1 The Basics

Options have a bad reputation. Most people imagine them being used by greasy little day traders with Italian names who drink too much coffee and smoke too many cigarettes. I held this mistaken view for many years myself, until a good friend[1] and sharp investor finally talked me out of my uninformed prejudice.

As I learned about options, I found that they can help my investments when they are flat-lining, make money even in down markets, and become outstanding performers when markets are up. Just as with stocks, investing with options can be speculative and high-risk, or intelligent and informed.

Another misconception about options is that you need a degree in higher mathematics to use them. While some mathematics is certainly helpful, it isn't necessary.

I approach options as an *investor*. Viewed this way, buying or selling options is not very different from buying or selling stock. In both cases, you need to understand the company, which means having a good grasp of its financials, competitive advantage and any risks it may face.

This chapter describes the basic concepts of options. Other chapters will discuss specific strategies and will assume that you know the material covered here.

1.1 Overview

The basic idea behind options is hardly new — contracts to buy or sell something for a set price in the future have been around for thousands of years. Stock options made their formal debut in 1973, on the Chicago Board of Options Exchange.

What you are buying when you purchase an option contract is the right to buy or sell 100 shares[2] of a particular stock at a specific price (the **strike price**) anytime before a certain date (the **expiration date**). If you exercise your right to buy or sell, it is called **exercising the option**.

It's important to remember that these are rights, not obligations. The purchaser of the option contract has all the rights, and the seller has all the obligations. That means if you decide to exercise your right to buy or sell stock as the purchaser of an option, your counterparty (the seller) *must* sell you their stock, or buy your stock. And they must do it at the agreed upon strike price. While this may sound like it's better to be a buyer than a seller of options, the opposite is often the case.

[1] Thanks Eryk

[2] Some option contracts specify different amounts of stock, but this is not common.

There are only two kinds of options — calls and puts. Call options give you the right to buy stock at the strike price specified by the option. So if you happen to own a call option on IBM with a strike price of $25, and IBM shares are selling for $40, you can exercise your option and buy IBM for $25. You can then turn around and sell the shares for $40, making a profit of $15 per share.

The amount you pay for an option is called the option's **premium**. Buyers and sellers of options price the premiums pretty rationally. For example, if IBM shares are selling for $40 a share, an IBM call option with a strike price of $5 will be more expensive than one with a strike price of $15. Why? Because the strike price of $5 allows you to purchase IBM shares at a greater discount to the market.

Put options give you the right to sell stock at the strike price of the option. If you own a put option on Xerox with a strike price of $25, and Xerox shares are selling for $15, you can buy shares for $15 and then turn around and exercise your put, forcing your counterpary to buy shares at $25 — $10 above the current market price. So it's logical that put options become more expensive the *lower* the share price drops below the options strike price.

There is an active trading market for options contracts, which means that you do not need to exercise the option to make a profit from it. Just as someone sold you the option when you bought it, you can sell it to someone else after it has become more valuable. In fact, most options are not exercised.

Example

You have been following WHOOPIE!, makers of the famous Whoopie Burger, for several years. Recently WHOOPIE! had some trouble which sent their shares down from a high of $20 to their current price of $10. You think the market is over reacting, and decide to buy a call option, since you believe the shares will rebound.

So you buy a call option for a premium of $2.00, which has a strike price of $10. Your call expires in three months. Option quotes are give in **points**, or the price per share. Since option contracts usually specify blocks of 100 shares (called "round lots"), you will pay $200 plus commissions for the call option.

One month later, WHOOPIE! is trading for $17. As a result, your call is worth a lot more money. In fact, it will be worth around 9-points ($9.00 per share, or $900 for the contract). You sell your call option for this price, making a profit of $700.

Since someone who purchased 100 shares of Whoopie! at $10 a share would make the same profit as the call buyer in this example, you might wonder why you should bother with options. The answer is *leverage*. The purchaser of shares would invest considerably more for the same return. Putting it in terms of percentages makes it clearer:

Share Holder		Call Option Buyer	
Buys 100 shares of Whoopie!	$1,000	Buys 1 call option on Whoopie!	$200
Sells the shares of Whoopie!	$1,700	Sells the call option on Whoopie!	$900
Profit	$700	Profit	$700
Return	70%	Return	450%

The advantages of leverage are obvious. Of course, there's a downside. There's always a downside. If Whoopie!'s share price didn't increase until after your option contracts expired (three months, in this example), they would expire worthless. In this case, you would lose 100% of your investment. The shareholder may be better off in this case, since they will still own the stock and can wait as long as they need too for the price to recover, or recoup some of their investment by selling at a loss.

You've probably noticed that in our examples, the options reflect the price of the stock. In fact, *options have no value of their own.* An option's price is determined primarily by the activity of the underlying stock's price. This is why options are called **derivatives** — their value is derived from the price of another security.

Other factors play a role, and we'll get to the details of all this shortly. But first, here's a similar example for a put option:

Example

Just before WHOOPIE! took its famous price plunge from $20 to $10, you bought a $20 put option for 1-point.[3] As described previously, the stock plunged from $20 to $10. As a result, your put gained in value by about 10-points. It is now selling for $11.00. You can sell this option for a net-profit of 10-points per share, or $100 per contract.

Or, if you own shares and want to get rid of them, you can execute the option and force someone to buy them from you at $20 per share. In this case, the put is a form of *insurance policy* which pays off if your shares decline.

As mentioned previously, being a seller of options can also be a smart move. Here's an example from the point of view of a call seller:

Example

You own 100 shares of Arlo Ltd., a political cartoon company. Your shares have doubled from your $20 purchase price and are now worth $40 a share. You think the shares might drop, but you don't want to sell yet. So you sell a call with a strike price of $40, which expires in two months, for 5-points. ($500 total). The $500 is immediately deposited in your brokerage account.

Moving forward two months to the option's expiration date, here's how the situation would look if the share price dropped:

[3]The strike price is $20, the price of the option is $1.00 per share, or $100 for the entire contract.

Stock Price	Stock only	Stock + Put
$40	$2,000	$2,500
$39	$1,900	$2,400
$38	$1,800	$2,300
$37	$1,700	$2,200
$36	$1,600	$2,100
$35	$1,500	$2,000

Note that if the share price drops to $35, with the call you still have the same net gains as just owning the shares when the price is $40. For prices between $40 and $35, you actually make more profit.

1.1.1 Up To The Moment Summary

Let's take a moment and summarize what we've covered so far:

- Options are way cool.
- As cool as they are, it's better to use options from the point of view of an investor, not a speculator.
- Options give rights to sellers, and obligations to buyers.
- Usually, option contracts work in round lots of 100 shares.
- Option premiums are quoted in points, which is the price per share. You must multiply by the number of shares in a contract (usually 100) to get the total price of the option, then add commissions.
- All Options are contracts with five elements:
  1. Its type (call or a put).
  2. Its underlying stock - unique to each option contract.
  3. Its expiration date.
  4. Its strike price
  5. Its premium, which is the price you pay for the option (or are paid for selling the option).
- Call Option Properties:
  1. Gives the call buyer the right to buy the underlying stock at the strike price of the option.

2. Obligates the call seller to sell the underlying stock at the strike price of the option.
3. Increase in price when the stock price goes up.

- Put Option Properties:
  1. Gives the put buyer the right to sell the underlying stock at the strike price of the option.
  2. Obligates the put seller to buy the underlying stock at the strike price of the option.
  3. Increase in price when the stock price goes down.
- Options have no value of their own, but derive their value from the price action of the underlying stock.
- You can buy calls for leverage.
- You can buy puts for insurance.
- You can sell calls for income.

That's quite a bit! Go have a pizza and a coke, and take in a movie. When you are rested and ready to go, continue with the next section. When you come back, we'll focus on call options exclusively from here through the next few chapters. We will take up the subject of put options again in chapter 6.

1.2 The Major Factors That Affect An Options Price

There are four major factors (or six, depending on how you count them) that affect the price of an option. Listed roughly in order of importance, they are:

1. The relationship of the strike price to the share price of the underlying stock.
2. The time left until the option expires, and the volatility of the stock.
3. The dividend yield of the underlying stock.
4. The current risk-free rate.

The first two are by far the most significant for all options. The last two are of less importance. If the underlying stock has a high dividend yield, it can affect the price of an option. The most controversial is the effect of the risk-free rate (usually considered to be the rate of 90-day Treasury bills). Higher rates imply slightly higher option premiums and vice-versa. The extent to which this is a factor for short-term options is not agreed on, so we won't discuss it further here. Longer lived options (called LEAPS) show the effect of the risk-free rate more strongly, and we will return to this in subsection 13.1.3.

1.2.1 Relationship of Share Price and Stock Price

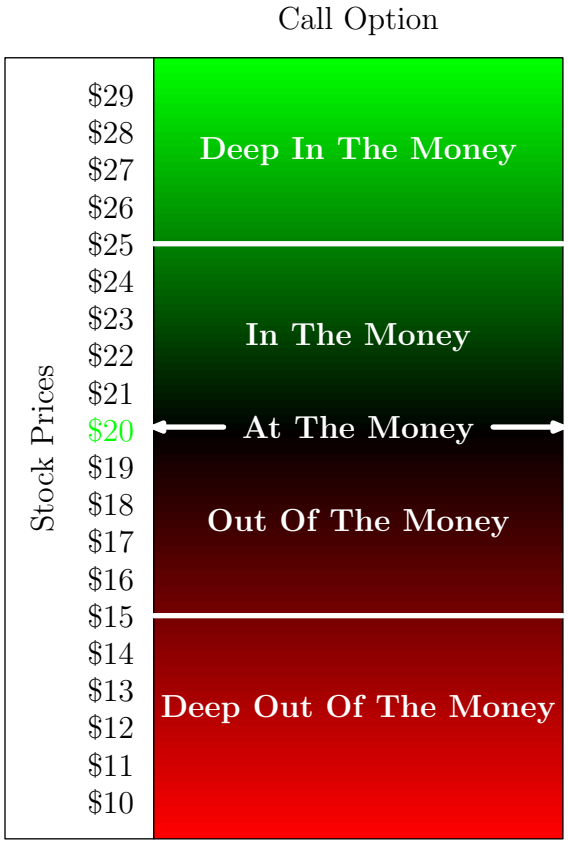

Figure 1.1: In-the-money, at-the-money and out-of-the-money call option with a $20 strike price.

Because the relationship of share price to stock price is of primary importance, it's convenient to have terms to describe the ways these prices relate. As illustrated in Figure 1.1, when price of a call option is equal to the stocks price, the call is **at-the-money**. If the strike price is below the stock price, the call is **in-the-money**. If the strike is way below the stock price, the call is said to be **deep-in-the-money**. Some people say if the stock is $5.00 or more above the strike, then the call is deep-in-the-money. Other people say that they know a deep-in-the-money option when they see one. It's not worth fighting over. Finally, if the strike is above the stock price, the call is **out-of-the-money**.

All options tend to be more valuable when they are in-the-money, and less valuable when they are out-of-the-money (indicated in the diagram by various shades of green and red). The deeper-in-the-money an option is, the more valuable it becomes. The opposite is also the case — farther out-of-the-money an option is, the less valuable it becomes.

This is all very logical. After all, if you own an in-the-money call, you can buy shares of the underlying stock at below market prices by exercising your call. You would expect

these calls to trade for a higher premium, and they do.

1.2.2 The Intrinsic Value of Options

If an option is deeply-in-the-money, or deeply-out-of-the-money, the other factors tend to have very little effect on the price of an option. And at the moment of expiration, this relationship is all that matters. Out-of-the-money options will expire completely worthless. In-the-money options will be worth the difference between the stock price and the option's strike price. Table 1.1 gives an illustration for a hypothetical call with a $20 strike price.

Stock Price	$20 Call Value at Expiration
$15	0
$18	0
$20	0
$22	$2
$25	$5
$30	$10

Table 1.1: Value of a call with a $20 strike at expiration.

Figure 1.2 shows this situation graphically. The vertical axis is the price of the call, and the horizontal axis is the stock price. Note that the option price remains stuck to zero until the stock price reaches the strike price of the option. At that point, the option premium curve angles sharply upwards, and grows linearly with the price of the stock.

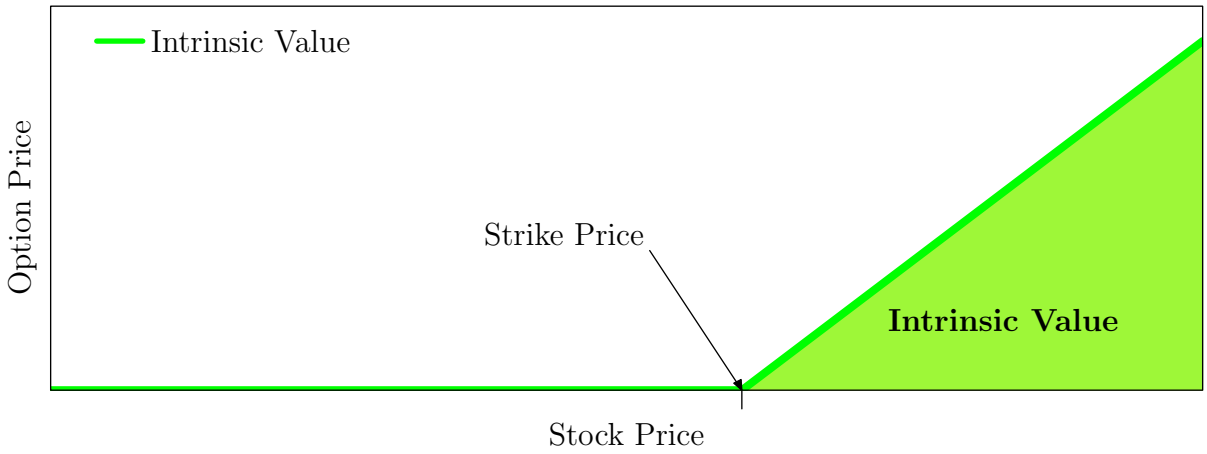

Figure 1.2: Price curve of call option at expiration

Since any option is always equal to at least the difference between its strike price and the current share price, Figure 1.2 also gives the minimum price curve — the lowest price a call can be worth at any given stock price.

The difference between the strike price of an in-the-money option and the share price of the stock is known as the options **intrinsic value**, and can be calculated easily:

Intrinsic Value = Stock Price - Strike Price

1.2.3 Time to Expiry: The Time Value Premium

This is a subject of great importance to option investors, so we will examine it closely.

The farther away an option is from expiration, the higher its price will be. This is true for both in-the-money and out-of-the-money options. This reflects a call buyers natural desire to have as much time as possible for the stock to move in his favor, which will increase the price of his call options.

This means that prior to the option's expiration, the market value of an in-the-money option's premium will be a combination of its intrinsic value (subsection 1.2.2) and an additional amount which is usually called its **time value premium** or simply the option's **time value**. Since the time value portion of the premium is whatever is over and above the intrinsic value, you can easily find the amount of an options premium which is due to time. First find the intrinsic value as described in the previous section, then:

Time Value = Option Premium - Intrinsic Value

A simple algebraic substitution gives you a quick way to calculate the time value directly:

Time Value = Option Premium + Strike Price - Stock Price

Perhaps it's time for an example:

EXAMPLE

ARLO shares are trading at \$30, and a March \$25 call is selling for \$7.20. The premium — the entire amount you must pay per share for the call, is \$7.20. The intrinsic value of the March \$25 call is:

$$\$30 - \$25 = \$5.00$$

Since the option is selling for \$7.20, the time value is:

$$\$7.20 - \$5.00 = \$2.20$$

Or using the last equation to calculate it directly:

$$\$7.20 + \$25 - \$30 = \$2.20$$

Options which are out-of-the-money have no intrinsic value — their entire premium is time value.

1.2.4 Revisiting the Call Option Price Curve

Obviously when time value enters the picture, the simple curve shown in Figure 1.2 does not apply. Adding the time value premium gives us the more realistic curve shown in Figure 1.3. This graph shows that the actual call option price curve is a gently curving concave line, tending upwards. This curve is idealized — an actual call option price curve would be more jagged.

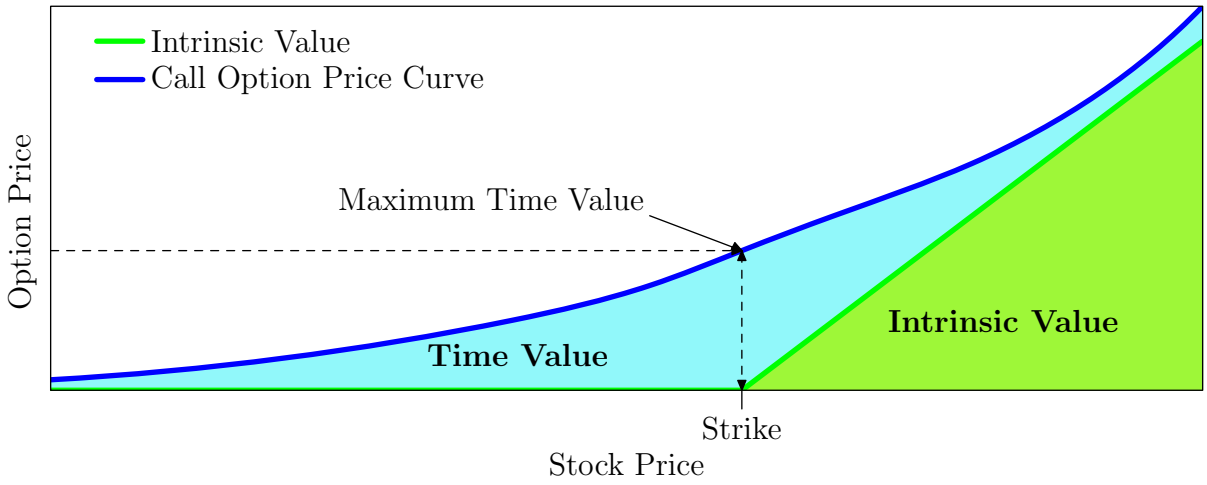

Figure 1.3: Price curve of call option with time value included.

There are several points of interest in this graph. Notice that an option's time value increases as the stock price approaches the strike price. The time value is at its maximum at the strike price. Time value will be at its minimum when the option is deeply-out-of-the-money, or deeply-in-the-money. This is clear in the graph, where the call option price curve comes very close to the intrinsic value line at both extremes of the graph. From this you might guess that there are other factors, besides time, which affect an option's time value premium, and you would be guessing correctly.

Time remains an important factor. Figure 1.4 shows the graphs of three call options. All of them have the same strike price but different expiration dates. In addition, a time-axis has been added — the time displayed in this graph is 3-months. Note that at every point in the three month period, the 3-month call sells for less than the 6-month call, which in turn sells for less than the 9-month call. The difference in prices of the three calls is greatest at the strike price — at the extreme ends of the graph, the curves are much closer together, indicating there is much less price difference between the calls at those points. Note also that at the three month point, the 3-month call expires with a value equal to the intrinsic value of the option.

Books on options (including this one), tend to focus on the prices of options at expiration. There are good reasons for this. Many options strategies will be most profitable when the options expire worthless. But another reason is that it is only at expiration when the

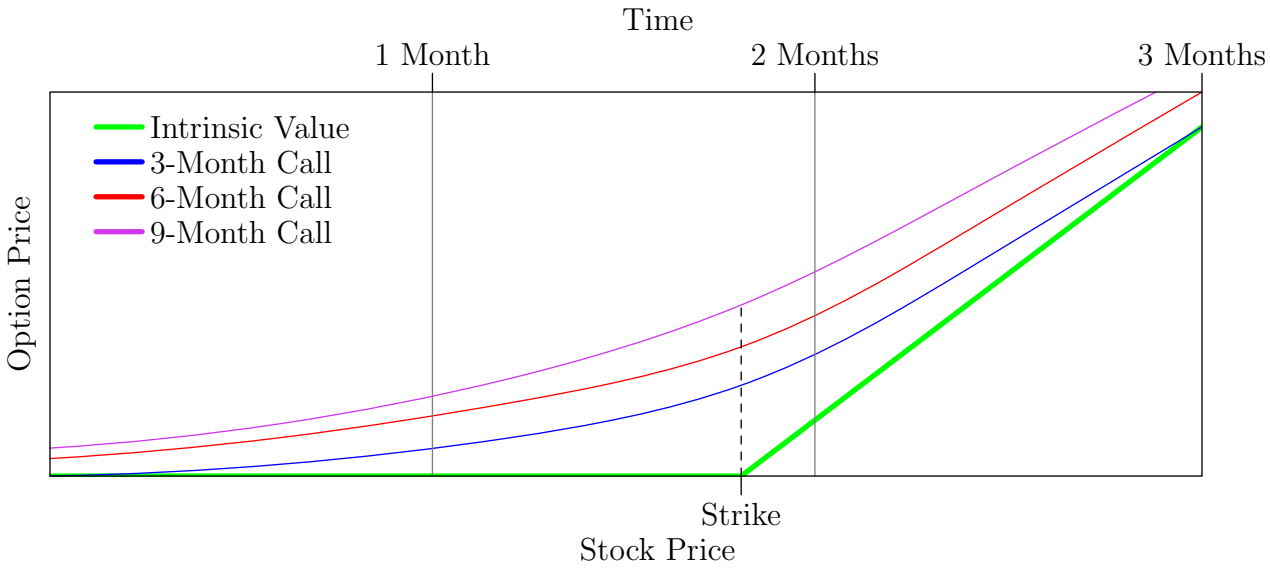

Figure 1.4: Comparison of three call options with the same strike price but different expiration dates over a three month time period.

options price can be predicted with 100% accuracy. Prior to expiration, the many forces that affect an option's premium make it very difficult to predict. There are mathematical equations, called **option pricing models**, which attempt to do this with varying degrees of success. The most famous is the Black-Scholes model, which is introduced in chapter 14.

1.2.5 The Rate of Time Value Decay

Another point to note in Figure 1.4 is that the curves are not parallel, as you might expect. This is due to the important fact that the *rate of decay of an option's time value is not linear*. It is not even constant throughout the life of an option — *time value premiums decay much more rapidly as the option nears expiration.* I won't get into the mathematics of time value decay at this point, but I will present a graph. Figure 1.5 illustrates how the time premium of an option decays over a 9 month period. Note that the curve is not a straight line. If you examine it closely, you will see that at the beginning the curve is nearly horizontal. As the time to expiry grows closer, the curve grows gradually steeper. Somewhere near the final month of the option's life, the curve becomes dramatically steeper, becoming nearly vertical. This is true for all options: the rate of time decay is slower the further away an option is from expiration, increasing significantly as the option nears expiration.

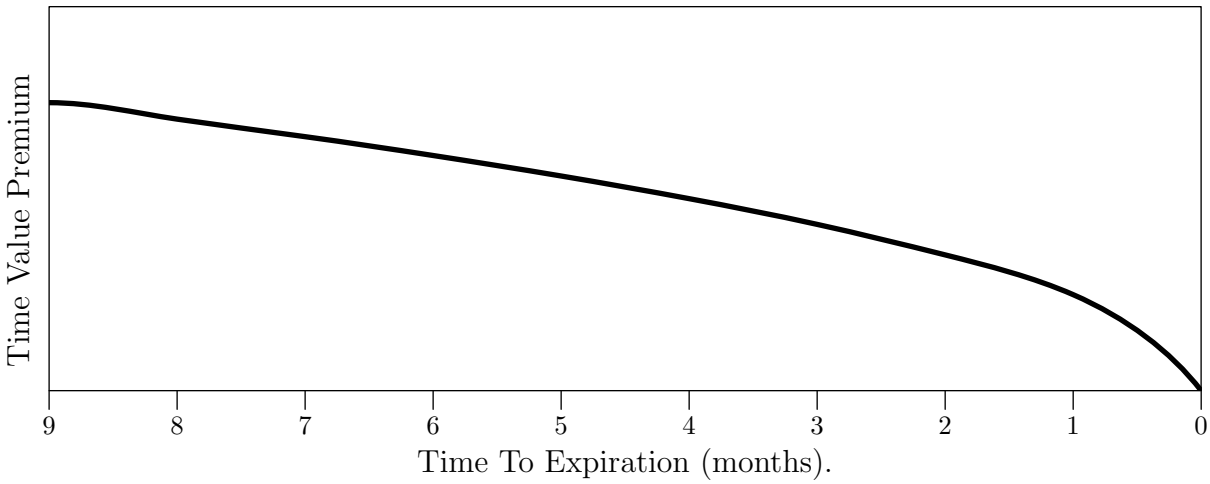

Figure 1.5: Time value decay of a 9-month call option.

1.2.6 The Influence of Volatility of the Underlying Stock

In truth, "time value" is a bit of a misnomer. For highly volatile stocks, volatility will have a much more significant effect on the price of the option than the time to expiration. *More volatile stocks have higher option prices.* This makes sense, because if a stock has shown the tendency to make large moves upward, call buyers will be willing to pay higher prices for the calls. If two stocks are selling for exactly the same price, but one is highly volatile while the other isn't, the more volatile stock will have higher priced options. This will be true until the last few weeks before expiration, when even the most volatile stock's options will lose time-value premium. Prior to that, which is most of the options life, volatility holds sway.

The four variables discussed: stock price, strike price, time and volatility interact in complex ways. A rising stock price may push the price of a call up, while decreasing time will tend to push it down. This means you can lose money on a call even if the stock price rises, if you pay too much for the time value. The time value may decay so much that the rising stock price can't make up the difference. Because of this, a fundamental principle of option investing that will be repeated again in future chapters is that you should always strive to *sell time value, but purchase intrinsic value.*

1.2.7 The Dividend Rate

The dividend yield of the underlying stock can be important, especially if you are an option seller. Dividends tend to depress call option premiums: In fact, *the larger the dividend of the stock, the lower the price of the call options.*

There are reasons for this. Stock prices tend to go down by the amount of the dividend after it is paid out, but since call owners do not receive dividends, it's reasonable that

buyers would want to pay less for it.

If the dividend is extremely large, an option might trade for its intrinsic value way before the expiration date of the option. In some cases, it may even trade *below* it's intrinsic value. When an option's price is equal to it's intrinsic value, it is said to be **at parity**. Options which trade at parity are candidates for early exercise. You can see one of the reasons here — if an option is trading at parity or below, traders can buy the calls at a discount, exercise them, then hold the stock until they get the dividend.

1.2.8 Up to The Minute Summary

Here's a summary of the new material we've covered.

- The relationship of the strike price and the call price is a significant factor in the price of an option.
- Terms describing the relationship of a calls strike price to its share price are:
  1. A call option is at-the-money when its strike price equals its share price.
  2. A call option is in-the-money when its strike price is greater than its share price.
  3. A call option is out-of-the-money when its strike price is less than its share price
- Options are more valuable when they are in-the-money.
- Options are less valuable when they are out-of-the-money.
- The Major factors affecting an options price are:
  1. The relationship of the strike price to the share price of the underlying stock.
  2. The time left until the option expires, and the volatility of the stock.
  3. The dividend yield of the underlying stock.
  4. The current risk-free rate.
- These four factors interact in complex ways.
- An in-the-money options intrinsic value is the difference between its strike price and the stocks share price.
- The time value of an in-the-money option is the difference between its intrinsic value and the option premium.
- An out-of-the-money option has no intrinsic value, only time value.
- Time value is greatest at the strike price.
- Otherwise, the further away from expiration the option is, the greater the time value.

- Time value decays most rapidly in the last month or so of an options life.
- Time value is a misnomer: the volatility of the underlying stock can be a much more significant factor than time.
- An options price can be definitely predicted only for expiration.
- Option pricing models can be used to attempt to predict the options price prior to expiration.
- An option investor should strive to sell time value, and purchase intrinsic value.

1.3 Additional Information

We've covered all the basics in the previous sections. We close with a few additional details to round-out your knowledge.

1.3.1 The Mechanics of Option Markets

Details differ from exchange to exchange, and electronic exchanges are becoming more common. The traditional "floor" system still exists at some of the largest exchanges (such as CBOE), and is enhanced by the use of computers.

In a floor based system, there are four participants:

- Market Makers
- Floor Brokers
- Order Book Officials
- Exchange Officials

Market makers are entrepreneurs who own or lease a seat on the options exchange and trade for their own accounts to make a profit. As part of their agreement with the exchange, they have an obligation to "make a market" by standing ready to buy or sell options. Typically, they "make a market" on the options of a few stocks. This allows the market makers to become very knowledgeable about the other traders who deal in options on those stocks.

They employ different strategies to make profits. Market makers typically change strategies, depending on the circumstances of the day or moment. Sometimes they act as "scalpers", who benefit from the bid/ask spread. They will try to buy just as the price is about to rise, and sell just before it falls. Positions such as this are typically held for only minutes at a time.

They can also maintain positions over a longer period.

Floor brokers are typically employees of brokerage firms, such as Schwab, Scottrade, Merrill Lynch, etc. They work for a salary or receive commissions. Their job is to obtain the best price first, and secondly the fastest order execution. An off floor trader will route their order to a floor broker for execution. Most floor brokers have clerical staffs to assist them. Many brokerage firms engage in "prop trading" — proprietary trading for their own accounts. These brokerage may have additional people on the floor of the exchange to seek trading opportunities. They also route their orders through the floor broker.

The **Order book official** is employed by the exchange. They are allowed to trade, but not for their own account. The purpose of their trading is to facilitate order flow. The order book official discloses the best limit orders awaiting execution. (This is similar to the role played by specialists on stock exchanges). They also employ a staff to help keep track of the order book.

Exchange officials are also employed by the exchange. There are two types, **price reporting officials** and **surveillance officials**. The price reporting officials enter the order into the exchanges price reporting system. The details are immediately sent out, all over the world, so that all traders can see the information reflected in the trade. This takes only seconds. Surveillance officials guarantee an honest marketplace, making sure all participants follow the rules and behave honestly.

Example

A NYU professor decides to buy a call option on ARLO. He dials his broker, who takes his order, makes sure it is correct, and then transmits it (usually via computer) to the brokerage firm's representative at an options exchange.

At the exchange, the brokerage firm's clerical staff on the floor of the exchange receives the order, and gives it to a runner. The runner runs to the trading area and finds the firm's floor broker who trades in ARLO options. The floor broker then executes the order by trading with another floor broker, market maker, or order book official. When the trade is complete, the floor broker records the price obtained, and the information about the trader on the opposite side of the trade. The runner, who is waiting for all this to transpire, takes the confirmation back to the clerical staff on the exchange floor. The brokerage firm clerks confirm the order to the main broker, who then tells the customer.

The NYU professor might have decided to login to his brokerages trading site via computer. The steps work similarly, but the electronic systems attempt to automatically route the order to the trading venue that will provide the best execution for the trade.

Mechanics of Assignment

Perhaps ARLO shares do well enough that the NYU professor wishes to exercise his option and own the shares. But if the shares have gone high enough, perhaps the seller of the call will not wish to fulfill his part of the bargain.

This is where the Options Clearing Corporation (OCC) enters the picture. When the Professor tells his broker that he wishes to exercise his call, the broker informs the OCC

that they want to exercise one contract on ARLO. The OCC keeps records on every listed option, which they now check to see which brokerage firms are short ARLO calls. The OCC randomly selects one brokerage out of all the brokerages that are short ARLO calls, and notifies them it has been assigned. They must now deliver 100 shares of ARLO, at the strike price of the option, to the professors brokerage. The brokerage then delivers the shares to the professor, and debits his account for the cost of the shares, plus commissions.

If more than one customer of the broker has exercised ARLO calls, the brokerage can deliver the shares randomly, on a first-in/first-out basis, or by some other fair basis that is approved by the exchanges involved.

The OCC *guarantees both sides of the transaction*. In effect, the OCC becomes the seller to every buyer and the buyer to every seller. Should an option trader fail to perform as promised, the OCC absorbs the loss and proceeds against the defaulting trader.

In this way, options traders do not need to concern themselves with the credibility of their counterparties, only with the credibility of the OCC. Fortunately, the OCC's credibility is high. It is well capitalized and anxious to keep a smoothly functioning market. It can (and often does) enter the process before assignment. If someone wishes to purchase or sell an option and there is not an existing counterparty, the OCC can buy or sell the option to help keep the option markets liquid. As a result, the OCC has a zero net position in the market. Because it has the same number of short and long positions, it has little market price risk.

Besides its zero net position, it requires margin payments from clearing members. Clearing members are securities firms that have an account with the clearinghouse. All option trades must be channeled through a clearing member to the clearing house. Market makers are not clearing members, and their trades must be routed through a clearing members.

These margin payments help ensure the clearing houses financial integrity. The clearing members, in turn, demand margin payments from their trading customers. These are immediate cash payments that show the financial integrity of the traders and limit the risk of the clearing member, and therefore also limit the risk of the clearing house.

Minimum margin requirements are set by the SEC, but clearing members are free to make additional requirements on trading customers, and most do.

1.3.2 Bid/ask spreads and Limit Orders

One of the useful pieces of information available on electronic option trading systems is the bid/ask spread. Sometimes the last price is also made available. The **bid** is the highest price being offered by the buyer of an option. The **ask** is the lowest price being offered by a seller.

In some cases, the spread between these two prices can be very wide, and it may seem that neither reflects a fair price for the option. This can occur if the option has not had active trading for a few days. You should not feel obligated to offer a bid for an option or ask a price for an option that you feel is unfair.

If the option is actively trading, it often works well to "split the spread". That is, to

bid or ask a price that is in the middle of the spread. To do this, you would use a **limit** order. In general, *one should always use limit orders when trading either options or stocks.* While the people involved in the transaction may be honest, why tempt them? A limit order guarantees you a maximum buy price, or a minimum sell price.

1.3.3 Automatic Exercise

At expiration, when an option is in-the-money, it will be automatically exercised on your behalf. If you don't want this to happen, you need to get rid of the option, or call your broker (usually the day before is a good idea), to tell them you do not want the options exercised.

1.3.4 The Number of Shares in an Options Contract

As mentioned earlier, option contracts usually work on round-lots of 100 shares per contract. However, there are some exceptions. The most common cause of a change in the number of shares per contract is due to a stock split. Here are some examples of how stock splits can affect options that you own.

Gorksi Gold shares are selling at $40 a share. You own options on Gorski Gold with a strike price of $30. Gorksi Gold does a 2-for-1 split. This means that the number of shares available for purchase are now doubled, and the stock price per share is cut in half. So if you own 200 Gorski Gold shares pre-split, after the split you will own 400 shares, but the price per-share will be $20, instead of $40.

In a case like this, the strike price of your options will be cut in half, and you will usually be given twice as many contracts. However, if the stock-split does not result in a round-lot, the contract size will be changed. For example, if Gorski Gold was trading at $60/share and did a 3-2 split, the adjustment made to your option contracts would be to multiply the strike price by 2/3'rds, and have each option contract specify 150 shares of stock, instead of the usual 100.

More bizarre contract changes can occur during spin-offs and mergers, where option contracts can be changed to specify fractional shares and even a certain amount of cash. These are quite unusual, but it's good to be aware of them.

1.3.5 Expiration Cycles

Options expire in a predictable cycle — there are three:

JAJO January, April, July and October.

FMAN February, May, August, November.

MJSD March, June, September and December.

Every stock which has options will belong to only one of these three cycles. In addition, shorter term options are always available in the upcoming month for all stocks, no matter what cycle they trade in.

There are also longer term options, called LEAPs, which expire in January of a future year.

Finally, all options expire on the third Saturday of the expiration month, which means that the last day available for trading them is the day before expiration.

1.3.6 Series and Strike Prices

The expiration date and the strike price are used to form subsets of options classes which are called **series**. For example, all options belonging to the Intel class with the same expiration date and strike price form one series of Intel options.

Strike prices are set by the exchange that issued the options. With popular stocks that see a lot of activity, you may find options listed with strike prices that are $1.00 apart. More typically, exchanges use different 'distances' between the strikes depending on the price. Lower priced stocks have options listed $2.50 apart, while higher priced ones are typically $5.00 apart.

1.3.7 Option Symbols

Like stocks, options have ticker symbols which refer to specific option contracts. In practice, it is rarely necessary to refer to them, since brokers usually decode them for you on their bidding screens. Right now, the symbols are currently being transitioned to a new format which is supposedly better than the arcane older format. The new ones seem pretty arcane too, but I guess they are more descriptive. This transition will be completed in May 2010. I will spare you a discussion of the older format, since it will soon be gone for good. The new symbols specify the four properties in the following format:

UNDERLYING+YY+MM+DD+TYPE+STRIKE(dollars)+STRIKE(decimals).

The '+' signs won't be included, I just put those there to make it it a bit more readable.

Here's an example of how it works: A call option on Apple stock which expires on May 22, 2010, with a strike of $20.00 would have the following symbol:

AAPL100522C0002000

Well, that looks about as readable as mud to me. Here's how it is decoded: AAPL (Apple ticker symbol), 10 (2010) 05 (May) 22 (day), C (it's a call, if it were a put, this would be a 'P'), 00020 ($20 dollars), 000 (and zero cents).

Rest assured that I'll continue to follow the practice option traders typically use in writing and conversation, which would refer to this option as a "May'10 $20 Call on AAPL".

1.4 Chapter Glossary

At-the-money Strike price of option is equal to current stock price of underlying.

Call Option A contract between buyer and seller where the buyer acquires the right, but not the obligation, to purchase a specified underlying contract at a fixed price on or before a specific date. The seller of the call option assumes the obligation of delivering the underlying should the buyer wish to exercise his right.

Derivative A security whose price is determined by its relationship to the price of another security. Stock options (calls and puts) are examples of derivatives.

Exercise The process by which the holder of an option notifies the seller of his intention to take delivery of the underlying (if a call), or make delivery of the underlying (if a put), at the strike price of the option contract.

Intrinsic Value The amount by which an option is in-the-money.

Premium The price of an option. Premiums are expressed in points, and must be multiplied by the number of shares in a contract (usually 100) to get the total cost of the option.

Put Option Grants the buyer the right to sell shares at the strike price of the option. Goes up in value as the stock price goes down.

Strike Price The price that will be paid for selling or buying 100 share of stock, set at the time of purchase of an option contract.

Time Value the portion of an options premium above the intrinsic value. If the option is out-of-the-money, the entire premium is time value.

Time Value Premium A synonym for time value.