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Options Basics Tutorial

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Introduction

Nowadays, many investors' portfolios include investments such as mutual funds, stocks, and bonds. But the variety of securities you have at your disposal does not end there. A type of security called an option presents a world of opportunity to sophisticated investors.

The power of options lies in their versatility. They enable you to adapt or adjust your position according to any situation that arises. Options can be as speculative or as conservative as you want. This means you can do everything from protecting a position from a decline to outright betting on the movement of a market or index.

This versatility, however, does not come without its costs. Options are complex securities and can be extremely risky. This is why, when trading options, you'll see a disclaimer like the following:

Options involve risks and are not suitable for everyone. Option trading can be speculative in nature and carry substantial risk of loss. Only invest with risk capital.

Despite what anybody tells you, option trading involves risk, especially if you don't know what you are doing. Because of this, many people suggest you steer clear of options and forget their existence.

Here at Investopedia, we take a different stance on the issue. In our opinion, being ignorant of any type of investment places you in a weak position. Perhaps the speculative nature of options doesn't fit your style. No problem--then don't speculate in options. But, before you decide not to invest in options, you should understand

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them. Not learning how options function is as dangerous as jumping right in: without knowing about options you would not only forfeit having another item in your investing toolbox but also lose insight into the workings of some of the world's largest corporations. Whether it is to hedge the risk of foreign-exchange transactions or to give employees ownership in the form of stock options, most multi-nationals today use options in some form or another.

This tutorial will introduce you to the fundamentals of options. Keep in mind that most options traders have many years of experience, so don't expect to be an expert immediately after reading this tutorial. We also suggest that you review our stocks tutorial if you aren't familiar with the stock market.

What are Options?

An option is a contract giving the buyer the right, but not the obligation, to buy or sell an underlying asset at a specific price on or before a certain date. An option, just like a stock or bond, is a security. It is also a binding contract with strictly defined terms and properties.

Still confused? The idea behind an option is present in many everyday situations. Say for example you discover a house that you'd love to purchase. Unfortunately, you won't have the cash to buy it for another three months. You talk to the owner and negotiate a deal that gives you an option to buy the house in three months for a price of $200,000. The owner agrees, but for this option, you pay a price of $3,000.

Now, consider two theoretical situations that might arise:
1. It's discovered that the house is actually the true birthplace of Elvis! As a result, the market value of the house skyrockets to $1,000,000. Because the owner sold you the option, he is obligated to sell you the house for $200,000. In the end, your profit is $797,000 ($1,000,000 - $200,000 - $3,000).
2. While touring the house, you discover not only that the walls are chock-full of asbestos, but also that the ghost of Henry VII haunts the master bedroom; furthermore, a family of super-intelligent rats have built a fortress in the basement. Though you originally thought you had found the house of your dreams, you now consider it worthless. On the upside, because you bought an option, you are under no obligation to go through with the sale. Of course, you still lose the $3,000 price of the option.

This example demonstrates two very important points. First, when you buy an option, you have a right but not the obligation to do something. You can always let the expiration date go by, at which point the option is worthless. If this happens, you lose 100% of your investment, which is the money you used to pay for the option. Second, an option is merely a contract that deals with an underlying asset. For this reason, options are called derivatives, which means an option *derives* its value from something else. In our example, the house is the underlying asset. Most of the time, the underlying asset is a stock or an index.

Calls and Puts

The two types of options are calls and puts:

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A **call** gives the holder the right to **buy** an asset at a certain price within a specific period of time. Calls are similar to having a long position on a stock. Buyers of calls hope that the stock will increase substantially before the option expires.

A **put** gives the holder the right to **sell** an asset at a certain price within a specific period of time. Puts are very similar to having a short position on a stock. Buyers of puts hope that the price of the stock will fall before the option expires.

Participants in the Options Market
There are four types of participants in options markets depending on the position they take:
1. Buyers of calls
2. Sellers of calls
3. Buyers of puts
4. Sellers of puts

People who buy options are called holders and those who sell options are called writers; furthermore, buyers are said to have long positions, and sellers are said to have short positions.

Here is the important distinction between buyers and sellers:
-Call holders and put holders (buyers) are **not obligated** to buy or sell. They have the choice to exercise their rights if they choose.
-Call writers and put writers (sellers) however **are obligated** to buy or sell. This means that a seller may be required to make good on their promise to buy or sell.

Don't worry if this seems confusing--it is. For this reason we are going to look at options from the point of view of the buyer. Selling options is more complicated and can thus be even riskier. At this point it is sufficient to understand that there are two sides of an options contract.

The Lingo
To trade options, you'll have to know the terminology associated with the options market.

The price at which an underlying stock can be purchased or sold is called the strike price. This is the price a stock price must go above (for calls) or go below (for puts) before a position can be exercised for a profit. All of this must occur before the expiration date.

An option that is traded on a national options exchange such as the CBOE is known as a listed option. These have fixed strike prices and expiration dates. Each listed option represents 100 shares of company stock (known as a contract).

For call options, the option is said to be in-the-money if the share price is above the strike price. A put option is in-the-money when the share price is below the strike price. The amount by which an option is in-the-money is referred to as intrinsic value.

The total cost (the price) of an option is called the premium. This price is determined by factors including the stock price, strike price, time remaining until expiration

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(time value), and volatility. Because of all these factors, determining the premium of an option is complicated and beyond the scope of this tutorial.

Why use Options?

There are two main reasons why an investor would use options: to speculate and to hedge.

Speculation

You can think of speculation as betting on the movement of a security. The advantage of options is that you aren't limited to making a profit only when the market goes up. Because of the versatility of options, you can also make money when the market goes down or even sideways.

Speculation is the territory in which the big money is made--and lost. The use of options in this manner is the reason options have the reputation of being risky. Why? When you buy an option, you have to be correct in determining not only the direction of the stock's movement, but also the magnitude and the timing of this movement. To succeed, you must correctly predict whether a stock will go up or down, and you have to be right about how much the price will change as well as the time frame it will take for all this to happen. And don't forget commissions too! The combinations of these factors means the odds are stacked against you.

So why do people speculate with options if the odds are so skewed? Aside from versatility, it's all about using leverage. When you are controlling 100 shares with one contract, it doesn't take much of a price movement to generate substantial profits.

Hedging

The other function of options is hedging. Think of this as an insurance policy. Just as you insure your house or car, options can be used to insure your investments against a downturn. Critics of options say that if you are so unsure of your stock pick that you need a hedge, you shouldn't make the investment. On the other hand, there is no doubt that hedging strategies can be useful, especially for large institutions. Even the individual investor can benefit. Imagine you wanted to take advantage of technology stocks and their upside, but say you also wanted to limit any losses. By using options, you would cost-effectively be able to restrict your downside while enjoying the full upside. For more on using options as a hedge, check out our article on married puts.

A Word on Stock Options

Although employee stock options aren't available to everyone, this type of option could, in a way, be classified as a third reason for using options. Many companies use stock options as a way to attract and to keep talented employees, especially management. They are similar to regular stock options in that the holder has the right but not the obligation to purchase company stock. The contract, however, is between the holder and the company, whereas a normal option is a contract between two parties that are completely unrelated to the company. We talk more about this in our article "Company Stock Options: The Real Story."

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An Example of how Options Work

Now that you know the basics of options, here is an example of how they work. We'll use a fictional firm called Cory's Tequila Company.

Let's say that on May 1st, the stock price of Cory's Tequila Co. is $67 and the premium (cost) is $3.15 for a July 70 Call, which indicates that the expiration is the 3rd Friday of July and the strike price is $70. The total price of the contract is $3.15 x 100 = $315. In reality, you'd also have to take commissions into account, but we'll ignore them for this example.

Remember, a stock option contract is the option to buy 100 shares; that's why you must multiply the contract by 100 to get the total price. The strike price of $70 means that the stock price must rise above $70 before the call option is worth anything; furthermore, because the contract is $3.15 per share, the break-even price would be $73.15.

When the stock price is $67, it's less than the $70 strike price, so the option is worthless. But don't forget that you've paid $315 for the option, so you are currently down by this amount.

Three weeks later the stock price is $78. The options contract has increased along with the stock price and is now worth $8.25 x 100 = $825. Subtract what you paid for the contract, and your profit is ($8.25 - $3.15) x 100 = $510. You almost doubled our money in just three weeks! You could sell your options, which is called "closing your position," and take your profits--unless, of course, you think the stock price will continue to rise.... Say we let it ride.

By the expiration date, the price tanks and is now $62. Because this is less than our $70 strike price and there is no time left, the option contract is worthless. We are now down to the original investment of $315.

To recap, here is what happened to our option investment:

Date	**May 1st**	**May 21st**	**Expiry Date**
Stock Price	$67	$78	$62
Option Price	$3.15	$8.25	worthless
Contract Value	$315	$825	$0
Paper Gain/Loss	$0	$510	-$315

The price swing for the length of this contract from high to low was $825, which would have given us over double our original investment. This is leverage in action.

Exercising Versus Trading-out

So far we've talked about options as the right to buy or sell (exercise) the underlying. This is true, but in actuality a majority of options are not actually

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exercised.

In our example you could make money by exercising at $70 and then selling the stock back in the market at $78 for a profit of $8 a share. You could also keep the stock, knowing you were able to buy it at a discount to the present value.

However, the majority of the time holders choose to take their profits by trading out (closing out) their position. This means that holders sell their options in the market, and writers buy their positions back to close. According to the CBOE about 10% of options are exercised, 60% are traded out, and 30% expire worthless.

Intrinsic Value and Time Value

At this point it is worth explaining more about the pricing of options. In our example the premium (price) of the option went from $3.15 to $8.25. These fluctuations can be explained by intrinsic value and time value.

Basically, an option's premium is its intrinsic value + time value. Remember, intrinsic value is the amount in-the-money, which, for a call option, means that the price of the stock equals the strike price. Time value represents the *possibility* of the option increasing in value. So, the price of the option in our example can be thought of as the following:

Premium =	Intrinsic Value	+ Time Value
$8.25 =	$8	+ $0.25

In real life options almost always trade above intrinsic value. If you are wondering, we just picked the numbers for this example out of the air to demonstrate how options work.

Types of Options

There are two main types of options:

- American options can be exercised at any time between the date of purchase and the expiration date. The example about Cory's Tequila Co. is an example of the use of an American option. Most exchange-traded options are of this type.
- European options are different from American options in that they can only be exercised at the end of their life.

The distinction between American and European options has nothing to do with geographic location.

Long-Term Options

So far we've only discussed options in a short-term context. There are also options with holding times of one, two, or multiple years, which may be more appealing for long-term investors.

These options are called LEAPS (which stands for Long-Term Equity AnticiPation Securities). By providing opportunities to control and manage risk or even speculate, they are virtually identical to regular options. LEAPS, however, provide these

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opportunities for much longer periods of time. Although they are not available on all stocks, LEAPS are available on most widely-held issues.

Exotic Options
The simple calls and puts we've discussed are sometimes referred to as "plain vanilla" options. Even though the subject of options can be difficult to understand at first, these "plain vanilla" options are as easy as it gets!

Because of the versatility of options, there are many types and variations of options. Non-standard options are called exotic options, which either are variations on the payoff profiles of the plain vanilla options or are wholly different products with "option-ality" embedded in them.

How to Read an Options Table

Stk	Exp	P/C	Vol	Bid	Ask	OpInt
360networks (TSX)						20.15
20	Feb	C	3	1.00	1.25	26
22	Mar	C	10	1.60	1.85	138
24	Mar	C	2	1.05	1.25	366
18	June	P	2	2.50	2.75	11
20	June	C	12	4.05	4.30	83
24	June	C	1	2.65	2.90	77
Total option vol. 50				Total open int. 7,492		

Column 1 Column 2 Column 3 Column 4 Column 5 Column 6 Column 7

Column 1: Strike Price - This is the stated price per share for which an underlying stock may be purchased (for a call) or sold (for a put) upon the exercise of the option contract. Option strike prices typically move by increments of $2.50 or $5.00 (even though in the above example it moves in $2 increments).

Column 2: Expiry Date - This shows the termination date of an option contract. Remember that
U.S.-listed options expire on the third Friday of the expiry month.

Column 3: Call or Put - This column refers to whether the option is a call (C) or put (P).

Column 4: Volume - This indicates the total number of options contracts traded for the day. The total volume of all contracts is listed at the bottom of each table.

Column 5: Bid - This indicates the price someone is willing to pay for the options contract.

Column 6: Ask - This indicates the price at which someone is willing to sell an options contract.

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Column 7: Open Interest - Open interest is the number of options contracts that are open; these are contracts that have not expired nor been exercised.

Conclusion and Resources

We hope this tutorial has given you some insight into the world of options. Once again, we must emphasize that options aren't for all investors. Options are sophisticated trading tools that can be dangerous if you don't educate yourself before using them. Please use this tutorial as it was intended--as a starting point to learning more about options.

Let's recap:

- An option is a contract giving the buyer the right but not the obligation to buy or sell an underlying asset at a specific price on or before a certain date.
- Options are derivatives because they derive their value from an underlying asset.
- A call gives the holder the right to buy an asset at a certain price within a specific period of time.
- A put gives the holder the right to sell an asset at a certain price within a specific period of time.
- There are four types of participants in options markets: buyers of calls, sellers of calls, buyers of puts, and sellers of puts.
- Buyers are often referred to as holders and sellers are also referred to as writers.
- The price at which an underlying stock can be purchased or sold is called the strike price.
- The total cost of an option is called the premium, which is determined by factors including the stock price, strike price, and time remaining until expiration.
- A stock option contract represents 100 shares of the underlying stock.
- Investors use options both to speculate and hedge risk.
- Employee stock options are different from listed options because they are a contract between the company and the holder. (Employee stock options do not involve any third parties.)
- The two main classifications of options are American and European.
- Long term options are known as LEAPS.

Also:
1. If you think we missed something and have a question, tell us about it.
2. If you enjoyed this tutorial, make sure to tell a friend!
3. If you still aren't on our newsletter, why not?

Related Links

Archives of "Investing in Options" - Our regular options education column discusses everything from the basics of options to complex strategies.

The ABCs of Option Volatility - Many option traders rarely assess the market

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value of an option before establishing a position. Why is this?

Another derivative security similar to options is a future. Check out our **tutorial on futures**.

Other riskier methods of trading stock are **short selling** and **buying on margin**.

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