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# All About Stock Options

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# All About Stock Options

## Options - Options 101

Trading shares of stock has become as common as surfing the Internet. But, like any financial investment, trading stock is risky. The price can fall unexpectedly and stay down for lengthy periods. To offset that risk, and to trade with more funds than you have without borrowing, options are... well, an option.

An option is a contract giving the investor the right to buy or sell some instrument at a given price on or before a stated date.

Options contracts are written on all sorts of underlying assets: real property, stocks, bonds, and even movie screenplays. (Though the latter trade on a rather different sort of exchange...)

The basic idea is simple. Invest a (relatively) small sum today, to control something worth a larger amount today. Bet that the price will move in a given direction before a certain date, then sell and pocket the difference.

For example, suppose Google shares are selling at \$400 per share. But buying 1,000 shares of GOOG (the symbol for Google stock) at \$400 each would cost \$400,000. That's a substantial investment of cash, one beyond the means of the average investor.

Even buying on margin (borrowing) would typically get you only half the way there. Most stockbrokers will lend their clients only up to 50% of the total cost. (There are laws restricting them, in any case.)

But, you can still 'own' 1,000 shares of GOOG. Simply buy an option at, say, \$20 per share (the 'premium'). Now your investment is \$20,000 - hefty, but within reach. (That's called 'leverage' - controlling more than you own.)

Every option has an expiration date - the date by which the investor must 'exercise his option', i.e. execute a decision to buy/sell the instrument or lose his invested money. Depending on the underlying asset, and other factors, the date can be anywhere from a day to several months hence.

Options also have a strike price - the price at which the underlying instrument has to be bought or sold when exercising the option.

Continuing the example, suppose the option for GOOG expires in 30 days and has a strike price of \$410. The break-even price would be  $\$410 + \$20 = \$430$  per share. At this point, you are 'under water' by  $\$30$  per share  $\times$  1,000 shares = \$30,000. Ouch!

(Note: 'Under water' is - obviously - not the same amount as your investment. It's the amount you have to rise to reach break-even.)

But, three weeks pass and Google announces some good news about earnings. The price per share rises to \$440. Now you can exercise your option ('close your position') and sell.

The options contract price has increased as well, to \$25. Your profit is:  $(\$25 - \$20) \times 1,000 = \$5,000$ . (Ignoring broker fees.) Not bad. That's a 25% profit on a \$20,000 investment. (Of course, prices fall as well. More on risk and hedging strategies later.)

Options aren't for everyone. They're more complicated (though not too much), riskier, and generally involve shorter-term trades and the requirement to watch the market more closely.

But note that purchasing the options contract did NOT involve investing 5% ( $\$20/\$400 \times 100\%$ ) and borrowing 95% of the funds. Options contracts are a straight investment of funds, not a broker loan.

If the price goes in the predicted direction before expiration, you make money. Otherwise, you lose (some or all of) your investment.

As with any investment, do your homework. Make sure you understand how options work and what the relative risks are. In particular, study the market for that type of underlying instrument. Throwing darts blindly is the least successful options trading strategy.

Good luck... or should we say, good research.

## **Options - Blessed Are The Greeks ñ Part I**

The ancient Greeks are justly praised for inventing much of elementary mathematics. But it was left to moderns to create the tools that help options traders quantify risk and calculate prices. Chief among these tools are several quantities known fondly as The Greeks: delta, theta, gamma and vega.

While the underlying mathematics is heavy going, the basic concepts are simple and can be used by any trader to help measure risk and maximize profits.

The Greeks are based on factors that common sense would suggest affect the price of an option. The determinants are the underlying asset's market price, the option strike price, the time left to expiration, volatility and short-term interest rates. All these pieces of data are readily available and it's clear why they would affect an option's value.

Take the strike price for example. That's the contractually specified price at which the asset, say a stock, would have to be bought or sold if the option were exercised.

Suppose MSFT (Microsoft) were selling at \$28 per share and the option considered was a June 31 call. (Note: the '31' refers to the strike price, not the date on which the option expires.) This option is 'out-of-the-money' since the strike price is higher than the current market price.

Clearly, the price of the option itself (the 'premium') will be affected by just how far out-of-the-money the option is. One measure of this difference is the first Greek: delta.

Not a simple difference, the delta is a ratio, which compares the change in price of the asset to the change in price of the option. For example, if the delta in the above example were 0.7, for every \$1 rise in MSFT the call option can be expected to increase by 70 cents (\$0.70).

A trader doesn't need to know how to calculate it, only how to use it. (Any good options trading software will show all four Greeks, along with price, expiration, etc.) Delta tends to increase the closer the option is to expiration for those close to in-the-money. Delta is also affected by changes in implied volatility. (The latter is also frequently provided by trading software).

Theta measures what is sometimes referred to as the 'time decay' of an option. Since all have an expiration date, and since the less time left the less likely the market price will move in a desired direction, theta is a measure of risk and value.

Suppose that MSFT June 31 all were priced at \$3 and the theta were 0.5. Then, in theory, the value of the option would drop by 50 cents (\$0.50) per day.

As expiration nears, the price for a premium can be expected to decline at a faster rate. An option with, say, two days left is losing value quicker than one with three months remaining. That change is reflected in the value of theta.

## **Options - Blessed Are The Greeks - Part II**

In Part I, we introduced the concept of the Greeks as trading tools and discussed delta and theta. We continue by examining gamma and vega. (Note: unlike the others, vega is NOT a Greek letter.)

Next in line is gamma. Here again the mathematics is slightly advanced, but the idea is simple. (For those who remember some college calculus, gamma is a function of the first derivative of delta.)

Gamma measures the rate of change of delta with respect to changes in the price of the underlying asset. Gamma is helpful when trying to estimate the price of an option relative to the degree it's in or out of the money.

When an option is far in or out of the money, gamma is small. When the option price approaches 'at-the-money', gamma is a maximum.

Last, we look at vega. Vega measures the sensitivity of the price of an option to changes in volatility. Volatility is the frequency with and degree to which a price changes. When prices rise or fall sharply, volatility is high.

(Volatility is yet another 'Greek', beta. Mathematicians and traders both are restless and ever-curious people, so there are actually several kinds of volatility. Implied volatility, for example, is

determined by exercise price, rate of return, maturity date and premium. Historical volatility is another commonly charted item.)

The calculations are complex, but again the idea is simple. Risk increases as volatility rises, because risk is all about uncertainty and potential loss or gain.

If the price changes slowly, investors have time to react. If the price changes by an extremely small amount, there is little to lose or gain. Both factors are important in measuring risk. A highly volatile instrument experiences large swings in price in short periods of time.

Vega is one helpful measure for quantifying that volatility and making trading decisions. Any increase in volatility in an underlying asset, will tend to show up as an increase in the price of an option. Individual options vary in the amount of their reaction to volatility, though, and so different options have different vegas.

Keep in mind that all these pieces of data, though useful and arrived at by complex mathematical formula, are at bottom guesses. Educated guesses, to be sure, but nevertheless estimates in an inherently uncertain market. All are based on various models of how options prices and the assets underlying these derivatives may behave in the future. Those models are, as their proponents will agree, not exact predictions.

The two most common are perhaps the Blacks-Scholes model and the Binomial model. There's no need here to display these elegant but intimidating formulae. The savvy trader need only remember that the data should be used as part of an overall strategy of research, not as a substitute for research.

Acquire the software needed to display these figures, along with several other useful ones, and look for trends. Even short-term traders (as options traders tend to be) need to examine past long-term trends before placing their bets.

## **Options - Calls and Puts**

Options are contracts on some underlying trading instrument - shares of stock, bonds, a commodity, a mortgage loan, etc. (The list is endless.)

But regardless of what the option is on, there are common features. One of the most basic is the contract feature specifying what the option owner has actually contracted for.

### **CALLS**

A 'call' confers on the (option) contract holder the right to buy an asset at a stated price on or before a specified expiration date. A right to buy, not an obligation. The call owner always has the option to let his option expire. (Of course, he then loses the initial money invested in buying the contract.)

Call buyers are betting the underlying asset - the stock, bond, commodity, etc - will increase in price before the expiration date. And, not only rise, but rise enough to make a profit.

### **How much is enough?**

The price must rise enough to cover the difference between the market price and the strike price (the price at which the stock, say, must be bought). And, since the option itself has a cost, the price has to rise enough to cover that additional amount. That cost is called 'the premium'.

The cost (the premium) of an option - whether call or put - is determined by several factors, including the price of the underlying asset, the strike price, the time remaining on the option, and others.

(The time remaining is particularly important. Simple common sense suggests that if you have 90 days to exercise an option, your risk is lower than if you have only one day. In 90 days the price may well rise the several points needed to generate a profit. With only one day remaining, the odds are lower.)

Suppose it's April 1, for example, and Microsoft (MSFT) has a market price of \$27. Call options for June 30 are selling for \$3 with a strike price of \$30. You buy one contract for 100 shares.

So, if you held until expiration you either lose \$300 ( $\$3 \times 100$ , the initial price of the contract not including commission), or buy the underlying stock at \$30. If the current market price were \$35 you've made \$200. ( $\$35 - (\$30 + \$3) = \$2$  per share  $\times 100$  shares, ignoring commissions.)

When the market price of a share is above the strike price, the option holder is 'in the money'. If the market price is lower, he's 'out of the money'.

### **PUTS**

A 'put', by contrast, gives the option buyer the right to sell an asset at a certain price by a stated date. The right, not the obligation.

Puts are similar to 'shorting stock', in this sense. Put buyers are betting the stock price will fall before the option expires.

In this case the market price must fall below the strike price in order to garner a profit from exercising the option. (Ignoring the cost of the put, for simplicity.) Under those circumstances, the option holder is 'in the money'.

For example, take the same situation as above but let the option be a put. If the market price falls to, say \$25, your profit would be:

First,  $\$3 \times 100 = \$300 =$  Cost of put, excluding commissions.

Then, buy 100 shares at \$25 per share = \$2,500 to repay broker 'loan' (since shorting stock involves borrowing shares you don't own, then repaying later).

Finally, sell 100 shares at Strike price = \$30,  $100 \times \$30 = \$3,000$

Therefore, your profit =  $(\$3000 - \$2500) - (\$300) = \$200$ .

(Actually, the broker takes care of all the underlying mechanics. The investor merely orders the trades at a given time and date.)

Whether investing in calls or puts, wise investors do the needed homework. Options trading is risky and somewhat more complicated than simple stock trading. (Which is already complicated and risky enough.)

Study the history, volatility, and other factors of both the option contract and the underlying asset. Blindly throwing darts at a board is the best strategy for losing money.

### **Options - Funds and Options**

Trading options is risky. While the risk is limited to the cost of the option (the 'premium'), that isn't necessarily small. A Google June 400 call can cost around \$2800.

The premium may be only 28, but an option contract is a commitment for 100 shares. Hence, the figure is multiplied by 100. Of course, for that commitment the buyer is controlling roughly \$40,000 worth of stock. ('Roughly' since the strike price, \$400, differs from the current market price, say \$395 at the time of the contract.)

Options, by nature, have an expiration date. (That's part of what makes them an option.) As that expiration date draws near the worth of that option can rapidly approach zero, depending on the current market price and other factors. Hence, risky.

And that scenario only involves controlling 100 shares - not much in the scheme of things.

One way around these difficulties is to invest instead in a fund. Funds invest in stocks, bonds, commodities, indexes, even futures or options - all the things individual investors themselves trade.

Investors who purchase a fund (a mutual fund or 'open-end' fund) own a portion of the instruments the funds buy. The fund is managed by a fund manager, presumably a knowledgeable and experienced investment professional. The fund manager has (in theory, anyway) the available resources, time and expertise to make investments that garner returns superior to what the individual can make himself.

The investor in mutual funds pays a fee for the service, but gets not only expertise and resources but also the advantage of being able to pool funds (hence the name) with other investors. That pooling allows control of many more shares, bonds, etc than the average individual can.

This helps influence prices in that fund's direction. (If you don't think so - and considering that many of them lose money skepticism is warranted - look at a chart showing price fluctuation against daily quantity bought or sold by the larger funds. There's no question that large funds influence stock prices, which in turn can influence their fund's value.)

For those investors interested in options, but without the time, expertise or capital to profit from them options funds are available.

Make sure you study carefully what the fund actually offers, though. There's a difference, sometimes overlooked, between an option on or from a fund and a fund that buys options.

Some funds actually purchase options contracts and speculate just as individual options traders do. Since funds control a larger amount of capital than individual investors the 'multiplier effect' (leverage) of options investing is increased further.

Other funds, though, actually buy stocks and then issue options to the fund members on those stocks. That's a different animal. This can produce profits for participants, but are more like short term trades. As the share price rises, the options are just exercised, limiting income growth opportunities.

Mutual fund investors tend to be more interested in the long-term outlook and often seek income growth funds.

The same variety of options available to the individual are, of course, there for the fund manager. Options on stocks, bonds or commodities are commonplace, but one of the newer wrinkles is options on ETFs (Exchange Traded Funds).

Funds that invest in these are actually speculating by buying an option on a fund that's gambling on an index that measures a basket of stocks. If your head hurts - and who could blame you - maybe you should just buy stock.

## **Options – Futures, Risks and Advantages**

The terms 'options' and 'futures' appear together often enough to confuse even knowledgeable traders into thinking they are the same thing. But, while they have important similarities, options and futures are distinct trading instruments.

An option is a contract conferring the right to its buyer to purchase an underlying asset at a fixed price (the 'strike price'). The right - not the obligation. A futures contract, by contrast, obligates the buyer (the 'long position') to purchase and the seller (the 'short position') to deliver some asset by a set date.

That underlying asset, in either case, can be a commodity (such as wheat, oil, gold), shares of stock, or some more nebulous instrument such as an index. Since an index is just a number no physical delivery is possible, such trades are settled in cash.

Futures have value as a mechanism for trading risk, publishing prices, and (like options) taking speculative advantage of leverage.

A farmer may not know in April precisely how much wheat he can deliver. Insect damage, droughts and other kinds of crop failure are even today very much real supply problems. Similarly, he can't predict in April exactly how much demand will exist in October. (In part, that depends on the supply.)

Selling a futures contract allows him to offload that risk to someone willing to bear it. He obtains a set price commitment today in exchange for a promise to deliver a good by a certain date in the future. On the other side of the contract, the buyer offers a promise today to accept delivery of the good in the future.

Neither knows with certainty what the market price will be on the expiration date of the contract, only what the market price is on the day it's entered.

For the contract buyer, a future offers several values in exchange for accepting the obligation to take delivery of (and pay for) a set amount of goods at a pre-set price.

One major value is, as in the case of options, the use of leverage. While options require paying of a premium (usually around 5%-10% of the current market price), futures have no in-built cost (apart from a small commission).

The buyer is required, though, to put up a 'good-faith' deposit, also in the neighborhood of 5% of the total. But that margin deposit allows the trader to control 10-20 times the amount of good he would otherwise have to pay for. That 'multiplied control' is leverage.

[Note: Though it's called a 'margin', it's NOT the same as buying stocks 'on margin'. In the latter case, that is a form of borrowing - with the broker lending the trader the amount needed to purchase all the shares the trader then owns.]

As a practical matter, a very small percentage of futures contracts actually result in the buyer accepting delivery of, say, 1000 barrels of oil. While the behind-the-scenes mechanics are somewhat complicated, at expiration the goods are ultimately transferred to brokers who sell them to those who actually make use of them.

To the traders the exchange is simple, though. Any change in prices is reflected in the accounts of the trading partners at the end of each day's trade. At some point the contract is either sold (the most frequent result) or expires.

## **Options - Hedging, Trim Risks Not Bushes**

Options are frequently used in hedging.

A hedge is an investment made to offset the risk incurred by entering another investment. Ironically, the basic idea is to bet against oneself, in a way.

Speculate that the market price will rise in the future and buy a call today. (A call is an option that confers the right to buy an asset at a set price in the future.) But, knowing that any price rise is uncertain, simultaneously buy a put. (A put is an option to sell at a preset price in the future.)

Now, why would anybody do such a crazy thing?

Well, hedging is, at bottom, a form of insurance. Though there are traders who use it more actively as a profit seeking strategy, such as hedge fund managers. By carefully selecting the appropriate combinations of strike price, expiration date and type of option an investor can minimize risk and maximize the probability of making a profit.

How? As an example, we'll consider a common hedging strategy: the Strangle. No, that's not something you do to your broker. That would be increasing risk, not minimizing it.

In this strategy, an investor holds both call and put options with the same maturity, but with different strike prices.

The contracts are purchased 'out of the money' and are therefore cheaper. 'Out of the money' means the strike price of the underlying asset is  $\bar{n}$  higher (for a call) or lower (for a put) than the current market price.

Suppose Microsoft (MSFT) is currently trading at \$30 per share. Buy one call at \$3 and one put at \$2 with the call having a strike price of \$35, the put \$25. (Total Investment =  $(\$3 \times 100) + (\$2 \times 100) = \$500$ .)

If the price over the length of the contracts stays between \$25 and \$35 the total possible loss = \$500, the cost of the options. Therefore the risk ('exposure') is limited to \$500.

Suppose the price drops near expiration to \$15. The call would expire worthless, but the put is worth  $(\$25 - \$15) \times 100 = \$1000 - (\$2 \times 100) = \$800$ . Subtract the cost of the call,  $\$800 - \$300 = \$500$ . This represents the net profit (ignoring commissions and taxes) on the trades.

The difference between the exposure and the potential profit represents a kind of hedge. Though the investor is, in a sense, 'betting' that the price could go either way, his downside is limited to the combined cost of the put and the call.

There are, not surprisingly, nearly as many hedging strategies as there are investors. A couple of common types are:

The collar: Hold the underlying asset and simultaneously both buy a put and sell a call of the same asset. The short call limits gains, but the long put hedges against any losses from the underlying asset.

The protective put: Buy the asset and also buy a put option on the same asset. At expiration, the asset may have gained (eliminating the value of the put option), but the rise in the asset offsets the loss.

Exotic combinations abound, but most involve speculating on the price direction of the underlying asset, while taking advantage of the leverage, cost and timing characteristics of options. As with any investment strategy, make sure you understand the pros and cons before laying down your bet.

## **Options - How To Read Options Listings**

Options price listings vary in appearance from site to site, but most will contain the following basic information. Here's a breakdown of what they list and what it means.

Shown below is one line from such a chart:

```
GOOG  
C Jun 400 27.80 27.90 27.85 .05 138 3
```

GOOG (above the line) indicates the company's stock symbol, in this case Google.

Column 1 identifies the type of option, whether a Call or a Put.

A Call is a contract granting the right to buy the underlying asset at a set price, a Put to sell at a set price - called the Strike Price. There are more exotic types of options (they're actually called 'exotics'), such as a 'chooser'. A chooser allows the investor to choose which type of option the contract will become at some point prior to expiration.

Column 2 shows the month during which the option contract will expire.

All options have an expiration date, by or on which the contract must be settled. The option at that point is either exercised by buying/selling the underlying asset, or simply losing the premium - the cost of the option.

All US options effectively expire on the third Friday of the listed month. So for example, in 2006, a June option would expire on June 16. This is the last day on which an investor can take an action, such as trading the contract or exercising the option.

Column 3 shows the Strike Price, which is the price at which the underlying asset would have to be bought or sold if exercising the option.

Column 4 states the Bid, the price a potential buyer is willing to pay for the option contract. Note this is the premium for the option, not the price of the underlying stock.

Column 5 states the Ask, the price at which an investor is willing to sell.

Column 6 shows the Last Sale, which lists the amount the option last sold at.

Column 7 lists the Net (or Change), the net change in price over the previous sale. (Charting the Net, obviously, is one basic aid in determining trends.)

Column 8 displays the Open Interest. Open interest is the total number of options open. Since options have an expiration date in the future, at a given time there are a set number of unexercised options contracts outstanding. If today's date were April 1, a certain number of options Call contracts for June Google (GOOG) would be open.

The number can change without expiration since, unlike stock shares, new contracts can be written. True, new shares can be floated, but that's a longer-term process. Some charts will show the total Open Interest summing a number of expiration dates. This number is frequently charted to form part of a trading strategy. Statistical studies show that the amount of Open Interest correlates with price changes. Exactly how, as with any technical analysis, is a matter of ongoing debate.

Column 9 shows the current volume of trades for the day.

Some listings will show the stock or options symbol for a company, such as GOOG (Google stock symbol) or GOOGPNT (Google Put option). Some will also include a -E, for example, or other letter to indicate the exchange - such as, the CBOE (Chicago Board of Exchange), or CME (Chicago Mercantile Exchange).

Keep in mind when calculating the amount of your investment that options contracts are typically for 100 shares. I.e. one option contract is an option on 100 shares. So, a June option on GOOG listed for 27.80 would cost \$2,780 (excluding commission).

## **Options - Leverage**

Why do options offer any advantage over trading stocks? They're riskier, since they expire within a certain amount of time and their values are more complicated to assess.

Since they expire the investor has to make a choice within a relatively short time frame. (Even LEAPs - Long-term Equity Anticipation Securities - are generally written for no more than two years.)

Since, as derivatives, they have no inherent worth they can move in sharply different directions from the underlying asset. One can short a stock or go long, but once bought the value of the shares is known. Even after you purchase options, their value is often solely 'time value', they're worth money only because some event may occur in the future, such as a rise in the price of the asset.

Nevertheless, options are actively traded in large volumes. What do options traders know that many investors have yet to learn? One thing they know is the value of leverage.

Imagine a teeter-totter in a children's playground. A small child can lift an adult into the air, provided the pivot point under the horizontal plank is placed appropriately. That force 'multiplier effect' has an analogy in financial markets.

For generally around 5% of the price of the underlying asset an investor can control - even

though they do not own - 100% of a quantity of stock.

Suppose MSFT (Microsoft) is trading at \$28 on a given day. A trader who anticipates that the price will rise can purchase one options call contract, which confers the right to buy 100 shares.

That call option, with say an expiration date in three months time with a strike price of \$30, will cost somewhere around \$3. (The 'strike price' is the pre-set price at which the shares have to be bought if the option is exercised.)

If the shares were purchased outright, even at the lower \$28 price, the investment would cost  $\$28 \times 100 \text{ shares} = \$2,800$  (plus commission). Buying a call instead costs  $\$3 \times 100 \text{ shares} = \$300$  (plus commission). That ratio,  $\$2800/\$300 = 9.33$  is the 'multiplier effect' known as leverage.

Conversely, you could invest the same \$2,800 dollars by simply buying more contracts to control more shares. That's another form of leverage. Controlling more shares for the same money is equivalent to controlling the same shares for less money.

How is this an advantage?

The answer is that, though the investor takes on the risk of losing the premium (the cost of the contract), that multiplier effect operates on profits as it does on costs. Since the investor controls more shares, profits are potentially higher.

Suppose MSFT rises above the strike price (\$30) to \$35. If you purchased the shares directly at \$28 per share, with \$300 to invest, you could only purchase 10 shares. (10.7 if you have a plan that allows fractional share investing, but part of that will go for a commission.)

Your profit on the trade would be (ignoring commissions)  $10 \times (\$35 - \$28) = \$70$ . If instead you had purchased an option on 100 shares, your profit would be  $((\$35 - \$30) - \$3) \times 100 = \$200$ .

You had to pay more per share, and the premium reduced your profits, but you controlled many more shares. The net is still considerably higher.

Keep in mind, though, that it works on losses the same way. If MSFT had fallen in price, but you were obligated to a strike price of \$30, exercising the option would cost you by that same factor. Under those circumstances, traders simply let the option 'expire worthless', limiting the loss to the amount of the premium.

The multiplier effect - leverage - is one major factor in the value of options.

## **Options - Options and Futures, Similarities and Differences**

You often see the phrase 'options and futures', as if the two were financial Siamese twins. But, though similar, there are important differences the savvy investor should keep in mind.

Both are so-called derivatives, since they have no independent worth as an asset, but derive their value from the instrument they are related to. However, there is an essential difference between the pair. Both are contracts binding two parties, but the terms of that contract define the difference.

A futures contract gives its buyer the obligation to purchase the underlying asset and the seller to sell (and deliver) it at a preset date. (If the futures holder liquidates his position prior to expiration, the delivery clause is voided, obviously.)

By contrast, an options contract, whether a call (buy an asset) or put (sell an asset), grants the holder the right - but not the obligation - to exercise the option. The holder is entitled to simply let the option expire without investing further.

Investors can enter futures contracts without inputting any funds (ignoring any commission), but an option always carries a cost - the 'premium'. (Note: This is only partially accurate since, in practice, futures contract buyers typically put down a deposit of around 10% of the price of the underlying asset. But the futures contract itself doesn't cost anything but a small commission.)

Futures contracts typically represent a larger investment in the underlying asset. (At least from the standpoint of a legal obligation, if not actual money laid out.)

The contract requires the buyer to either purchase the 'goods' by the deadline (which is rare), or sell the contract to another party. So, the financial obligation is, at least in principle, potentially very large.

The risk in options is therefore lower, with the amount limited to the premium cost.

Nevertheless, few traders actually take delivery of several tons of wheat or a few thousand barrels of oil. The contracts typically are actively traded until just before settlement time, at which time a buyer - one appropriate to that commodity - purchases the actual goods and re-sells them.

(Of course, futures contracts exist on non-physical 'goods' as well - such as index futures, bond futures, even futures on options!)

Similarly, only a small percentage of options traders actually take delivery of the underlying shares of stock, bond certificates, commodity or other instrument. (Some do, such as employees of companies granting options as part of employment compensation packages. And a small percentage of a very large number is still a substantial number of individuals.)

There are also important differences in the way profits (or losses) are realized from the two contracts.

A call option, for example, that is 'in the money' can be purchased and exercised immediately. 'In the money' means the 'strike price' - the price at which the underlying asset must be bought or sold via the option - is lower than the current market price.

For example, in April a June 17 call on Microsoft might have a strike price of \$25, with a current market price of \$27 per share. Assuming the cost of the option (and commissions) averages less than \$2 per share the investor can realize an immediate profit by selling the call or exercising the option.

Futures gains, on the other hand, are automatically 'marked to market' daily. I.e. the any change in the value of the position is adjusted in the accounts of the contracting parties at the end of every trading day.

Like stock prices, of course, the gain or loss is 'only on paper'. Unlike stocks however, that 'paper loss' can become very real when the contract expires and the holder is forced to liquidate.

Both instruments carry risk, but are valuable for the leverage they offer - the ability to control more funds than you invest.

## **Options - Risk Management**

There are more kinds of risk than there are investments, since every instrument carries several kinds. But risk isn't inherently bad. Without it there'd be fewer opportunities for profit.

The fundamental risk, of course, is price uncertainty. No one knows for sure whether GOOG (the symbol for Google stock) will be higher tomorrow or lower.

Options, like futures or bonds, carry an additional risk - at some point, from a day to several months or years, they expire. On or before that date, the holder has to decide whether to sell the contract, exercise the option to buy or sell the underlying asset, or simply let the option expire.

Each of these choices carries implications for gain or loss and all are uncertain (to some degree) with respect to the size of that outcome.

Complicating the price and timing risks of options is their volatility risk. It's uncertain, on any given day, how much the price will vary and how rapidly.

Ironically, options themselves are forms of risk management. Since the underlying asset, say a stock or bond, has risks as an investment, buying options allow holders to compensate for them.

Leverage is one form in which options help to manage risk. Leverage is the ability to control more than you own. Suppose you want to purchase a 100 shares of Google. At the current market price that's an outlay of around \$40,000 (excluding commission). That's a hefty sum for the average investor.

But you can control 100 shares of GOOG without owning them for less than 1/10th the cost - currently around \$2800 - the price of one option. (One options contract typically is written on

100 shares.)

How is that a form of risk management? The reason is there's another kind of risk: principal risk. I.e. the risk of losing (all or part of) your investment. (Actually this is a form of price risk.)

Purchase a 100 shares of GOOG and you stand to lose \$40,000 in the (very unlikely) case that Google goes bust. (Unlikely, but not impossible. Rapid shifts in technology or other factors have tanked more than one high-tech stock. 3Com and Cisco are two good examples. Though not zero, their shares experienced considerable declines in the past few years.)

Purchase one option instead and your principal risk is limited to the - painful if lost, but much smaller - amount of the premium: \$2800, the cost of the options. (Excluding commissions.)

Of course, the example is a little unfair since the odds of Google stock going to zero is itself close to zero. But there are companies for whom the odds are not so favorable and the principle (pun intended) is the same.

So, how do you manage these risks? Simple. Simple, but not easy. Start by identifying all the known risk factors and quantifying them. (Simple in that identifying and measuring them is straightforward, but minimizing them is anything but easy.)

Fortunately, there are several different software product offerings that will help you do that. It's no longer necessary to be a finance and mathematics wizard. The software incorporates the algorithms used by experts to measure various factors - such as delta, theta, vega, volatility and others - that can affect your potential profit or loss.

## **Options - Intro to Technical Analysis for Non-Dummies**

There exist today an array of charts, patterns and statistical analyses large enough to please even a Medieval numerologist. Though it often looks and reads much like mathematical tea-leaf reading, most of the commonly used tools are based on serious empirical studies of the markets.

The best way to explain what technical analysis is may be to contrast it with its arch-rival and sometimes partner: Fundamental Analysis.

Fundamental analysis consists of attempting to evaluate a financial instrument (a stock, bond, etc) by looking at factors affecting intrinsic worth. Company earnings, basic industry conditions - everything from the overall economy to who sits in the Chief Financial Officer's chair.

Technical analysis shuns measurements of such things as assets and liabilities and focuses less on company or industry specifics. It looks instead for statistical patterns among historical (both recent and long term) price movements, volume and a large number of other variables.

Some of these variables and patterns appear arcane to all but the specialists. Fortunately there are a few basic ones available to the savvy but still mere mortal.

One of the most basic is the simple bar chart. In use for centuries in one form or another, it consists of the familiar vertical stick with small horizontal tick marks attached.

The length of the bar shows the price range of the instrument for a recent period - usually the last 24 hours or the trading day up to that point. The horizontal mark on the right indicates the opening price, the left-pointing one shows the closing price.

A series of these laid out across a chart - for periods of a week, a month, quarterly, etc - forms a pattern. It's that pattern that the technical analyst uses (in part) to predict how the pattern will continue - i.e. what the price will be an hour or a day or a few weeks hence.

Traders who rely heavily on technical analysis are rarely long term players. Somewhat like predicting the rain, a set of data can help you guess with high probability what will happen in the short term. It's less useful for judging the outcome three months ahead.

Candlesticks - adapted from the Japanese, where they were used to forecast rice futures - are a common variation. The change consists essentially of 'fattening' the vertical stick and adding color to indicate variations between opening and closing prices.

Red strips are used to show a closing price lower than the previous period, green when the instrument closed higher. Again, different shapes suggest - to the initiated - different market movements.

Since options, like bonds, add the element of time expiration new variables to predict patterns come into play. Also, since as a derivative an option has no intrinsic worth, price and volume changes can (and do) occur as a result of changes to the underlying asset. Some of the variables that measure these changes make their way into technical analysis charts.

Delta, for example, measures how much an option price rises or falls relative to the change in price of the underlying asset. Theta measures how much an options position gains or loses in a period of time - a day, a week, a month, etc. Vega is a measure of how much a position gains or loses as volatility changes by a specified percentage.

Fortunately, there are software packages available that will allow tracking of these and other variables. Algorithms are built in that experts assert indicate thresholds and patterns that signal buy or sell.

Since there are dozens of such offerings, containing hundreds of different variables and patterns, only experience can teach you which are meaningful and which mere numerology.

## **Options - Trading Strategies, Basic Concepts**

There are several basic trading strategies, but in order to execute any of them successfully an investor new to options will need to know some elementary concepts.

The most basic are the call and the put. Buying a call confers the right, but not the obligation, to buy at a pre-set price. Puts grant the buyer the right to sell at a pre-set price. But options are sold as well as bought. That seller grants the buyer the right, and takes on an obligation to fulfill the other side of the trade.

There are several basic variations.

### **Long Calls**

The most basic, and easiest to understand, is the (long) call. MSFT (Microsoft), currently trading at \$28, have June 31 options that expire on the third Friday of June, with a strike price (pre-set, 'if exercised, must-be-bought-at-price') of \$31.

### **Short ('Naked') Calls**

When the option seller (the 'writer') doesn't own the underlying stock he's obligated to sell (if the option is exercised), he is said to be selling a 'naked' call. Since he's on the selling side of the contract, his position is said to be 'short'.

If the market price of the underlying asset decreases, the short call position will profit by the amount of the premium. The price rises above the strike price by more than the premium, the short position incurs a loss.

### **Long Put**

Traders who anticipate that the future market price of an asset, say a stock, will fall prior to expiration can buy the right to sell the stock at a fixed price. The put buyer has no obligation to sell the stock, but simply the right.

If, in fact, the market price does fall below the strike price (prior to expiration of the option) by more than the premium paid, he profits. If the price increases, or doesn't fall enough to cover the premium, the trader lets the contract 'expire worthless'.

### **Short Put**

Traders who speculate that the future market price will increase, can sell the right to sell an asset at a pre-determined price.

If the asset's market price rises, the short put position makes a profit equal to the amount of the premium. (Excluding any transaction costs, such as commissions.) If the price falls below the strike price by more than the premium, the 'writer' loses money.

Several basic trading strategies utilize the characteristics of these four basic positions. These strategies are either pure profit plays - speculating on coming out on the plus side of the equation - or combinations of speculation and hedging.

Hedging involves taking positions that tend to move in opposite directions. They profit less than pure speculation, but make up for it by offloading some risk.

'Bull spreads', for example, use a long call with a low strike price in combination with a short call at a higher strike price and a short put with a higher strike price.

'Bear spreads', by contrast, involve a short call with a low strike price and a long call with a higher strike price. An alternative method uses a short put with low strike price and a long put with a higher strike price.

Options trading software can demonstrate several concrete examples of how any of these - under different assumptions about future prices, volume, etc in combination with different expiration dates and strike prices - can result in profit (or loss).

## **Options - Trading Strategies, Profit and Risk**

Risk isn't inherently bad. Without it, there would be far fewer opportunities for profit. In particular, there would be no options market at all. No one would have to speculate on price direction or other factors, since risk always implies uncertainty about the future.

But risks come in different flavors and degrees. Let's examine some trading strategies with an eye toward risk...

### **Long Calls**

The simplest options trade, the one usually first executed by investors moving beyond stock or bond investing, is the long call. A call is a contract that confers the right to buy an underlying instrument at a set price, the strike price. For this right, the buyer pays a 'premium' - the cost of the option.

When that strike price is below the current market price, the option is said to be 'in the money', when above it's 'out of the money'. But whatever the market price when the option is purchased, the buyer is speculating that the market price will be above his cost (strike price + premium + commission) before the option expires.

The amount by which the market price is above that cost determines the amount of profit. Since, in theory, the market price can rise indefinitely, the profit potential is called 'uncapped'.

Unlimited potential profit, but not without risk. As the famous banker J.P. Morgan said when asked what the stock market would do: 'Prices will rise, and prices will fall.' When the price falls below, or fails to rise above the cost of the option the investor loses money. In this case, however, the risk is obviously limited to the amount of the option (plus a small commission).

These kinds of options make for wise investments for those with limited experience but who want to take advantage of the additional leverage provided by options. Leverage is the ability to control more than you own. Since the option price is typically around 5% of that of the underlying stock, the leverage is 20:1. This multiplier effect is one thing that makes options so attractive.

Be sure the option has adequate liquidity, though. Open interest (the total outstanding contracts) should be no less than 100. The higher the better.

## **Long Puts**

J.P. Morgan was right, prices sometimes fall. Sometimes they fall far and for a long time. When an investor judges this is likely, the next simplest options trading strategy can be employed: buying a put.

A put is a contract granting the right to sell an asset at a set price before or by expiration. It's slightly more difficult to understand, since the idea of selling something you don't own is odd.

Just like shorting stock, the trade (imagining the option were exercised) actually involves effectively borrowing the shares then immediately selling them. However, the investor never sees the underlying mechanics. As with shorting stock, the investor is on the hook for the 'borrowed' amount.

In this scenario the put buyer is speculating that the market price will fall below the strike price.

This is another situation in which the maximum risk is capped, this time by the price paid for the put. The reward too is capped, since the market price can't fall below zero. The maximum profit in that case is the strike price minus the cost of the put.

As with calls, ensure you choose an underlying instrument with adequate liquidity, preferably shares of over 500,000 ADV (Average Daily Volume). Look for open interest amounts over 100.

When trading options always be sure to select those with enough time left to judge the market trend. An option near expiration will be cheaper (options contracts are themselves actively traded), but carry higher risk. And risk is a bad thing... sometimes.

## **Options - Values and Prices, Part I**

Unlike stocks, options have an expiration date. Unless a company goes bankrupt or buys back all its stock, the stock investor always has the choice to wait for a price correction. Sometimes that wait represents the triumph of hope over experience, but more on that elsewhere.

That expiration date makes calculating an option's value more complicated, but also more accessible to some of the powerful statistical tools developed over the last few decades.

Two of the more common methods for evaluating options involve measuring their intrinsic value and their time value.

The 'intrinsic value' is the amount by which the option's strike price is 'in-the-money'. Strike price is the contractually set price at which the underlying asset would be bought or sold, if the option were exercised. 'In-the-money' means the strike price is lower (for a call option) and higher (for a put option) than the current market price.

For call options:  $IV = \text{Asset Market Price} - \text{Call Strike Price}$

Since options have an expiration date, but are purchased on some prior date their value changes as the expiration date nears. That change in time results in a decay of the value of the option as a trading instrument.

An option with two days remaining is generally worth less than one that gives the investor three months to act. At expiration the option is either in-the-money, in which case profits are possible, or it's out-of-the-money and the investor incurs a potential loss.

Time value is the amount by which the price of an option exceeds its intrinsic value.

For call options:  $TV = \text{Call Premium} - \text{Intrinsic Value}$

For put options:

$IV = \text{Put Strike Price} - \text{Asset Market Price}$

$TV = \text{Put Premium} - \text{Intrinsic Value}$

Note: The 'premium' is simply the cost of the call or put.]

For options that are 'at-the-money' (strike price = current price), or 'out-of-the-money' (strike price higher/lower (call/put) than current market price) the option has no intrinsic worth at that time. It only acquires value in so far as the market price can change, i.e. it has only time value.

For example, suppose MSFT (Microsoft) has a current market price per share of \$27 for a June 30 call. The '30' refers to the strike price, not the expiration date. If the premium is \$2, the option is out-of-the-money - since:  $\$27 - (\$30 + \$2) = -\$5$ .

I.e. if you bought the call and exercised it immediately you'd lose five dollars (plus commission costs).

Since, the option has no intrinsic value (negative intrinsic value isn't allowed), why would anyone execute such a trade?

Because an out-of-the-money is less expensive than one in the money and the further out-of-the money the cheaper it is. There are many trading strategies that utilize this fact as a hedge or for potential profit. Given a three month period, the market price may well rise to more than cover the premium and produce a profit. That's what makes options trading speculative.

## **Options - Values and Prices, Part II**

In Part I, we outlined an example. MSFT (Microsoft) stock with a current market price of \$27, and a June 30 call option with premium of \$2. (I.e. an option whose characteristics are: contract to buy 100 shares of MSFT by June 16 at a strike price of \$30. Remember the '30' refers to the strike price, not the expiration date.)

Since that option was out-of-the-money it sold at a discount. That's 'compensation' for the

greater risk entailed in buying the call. As that June 16 date nears, the premium will go down. A June 30 call option will sell for less on June 10th than it did on March 16th.

That 'decay' characteristic turns speculating into more than a game of blind chance. The game becomes one of calculated risks.

An option that's in-the-money has intrinsic value. (See Part I).

The deeper in-the-money it is the more its price tends to move like that of the underlying asset. For example, suppose the current market price were not \$27, but \$35 and the cost of the call 3\$. Now,

$$\$35 - (\$30 + \$3) = \$2.$$

[In this case, the Intrinsic Value = \$35 - \$30 = \$5. Note, it doesn't include the premium.]

That doesn't seem like much of a gain, but remember one contract is for 100 shares, the \$2 is per share. So  $\$2 \times 100 = \$200$ . Even subtracting a \$10 commission, the immediate potential profit is \$190.

[Note: all examples are for 'American style' options - an option that can be exercised anytime before expiration. 'European style' options, such as those written on indexes rather than individual equities, are exercised AT expiration.]

But traders who sell options aren't likely to give away money. Any opportunity of the kind described would be subject to immediate arbitrage. Arbitrage is buying and rapidly selling in two different markets to take advantage of just such differences in price, to reap quick profits.

That tends to push prices in the direction of breakeven.

As a result, time value becomes one of the primary factors for profiting from options investing. That factor has two basic determinants: (1) time remaining until expiration, and (2) difference between strike price and current market price.

Two options with different strike prices but the same maturity will have two different time values. Similarly, two options with the same strike price, but two different maturities will have two different time values. In both cases, the premium will be affected by the size of the difference.

For the sake of simplicity, assume the underlying asset price doesn't change and that the strike prices of different options is the same. The remaining variable is the amount of time until expiration. Any chart of options premium vs time-to-expiration, then, will show a declining line. The option closer to expiration, has a lower time value.

Also note, the option with an out-of-the-money strike price will have a premium closer to zero, the closer its maturity is to expiration. That illustrates the effect of time value.

The concept is simple - as expiration nears, premium prices fall. Using the idea in a trading strategy is less so. For advice on that, see elsewhere in this series.

## Options Trading 101

Stock and Bond trading strategies run the gamut from the simple 'buy and hold forever' to the most advanced use of technical analysis. Options trading has a similar spectrum.

Options are a contract conferring the right to buy (a call option) or sell (a put option) some underlying instrument, such as a stock or bond, at a predetermined price (the strike price) on or before a preset date (the expiration date).

So-called 'American' options can be exercised anytime before expiration, 'European' options are exercised on the expiration date. Though the history of the terms may lie in geography, the association has been lost over time. American-style options are written for stocks and bonds. The European are often written on indexes.

Options officially expire on the Saturday after the third Friday of the contract's expiration month. Few brokers are available to the average investor on Saturday and the US exchanges are closed, making the effective expiration day the prior Friday.

With some basic terminology and mechanics out of the way, on to some basic strategies.

There are one of two choices made when selling any option. Since all have a set expiration date, the holder can keep the option until maturity or sell before then. (We'll consider American-style only, and for simplicity focus on stocks.)

A great many investors do in fact hold until maturity and then exercise the option to trade the underlying asset. Assume the buyer purchased a call option at \$2 on a stock with a strike price of \$25. (Typically, options contracts are on 100 share lots.) To purchase the stock the total investment is:

$$(\$2 + \$25) \times 100 = \$2700 \text{ (Ignoring commissions.)}$$

This strategy makes sense provided the market price is anything above \$27.

But suppose the investor speculates that the price has peaked prior to the end of the life of the option. If the price has risen above \$27 but looks to be on the way down without recovering, selling now is preferred.

Now suppose the market price is below the strike price, but the option is soon to expire or the price is likely to continue downward. Under these circumstances, it may be wise to sell before the price goes even lower in order to curtail further loss. The investor can, at least, minimize the loss by using it to offset capital gains taxes.

The final basic alternative is to simply let the contract expire. Unlike futures, there's no obligation to buy or sell the asset - only the right to do so. Depending on the premium, strike price and current market price it may represent a smaller loss to just 'eat the premium'.

Observe that options carry the usual uncertainties associated with stocks: prices can rise or fall by unknown amounts over unpredictable time frames. But, added to that is the fact that options

have - like bonds - an expiration date.

One consequence of that fact is: as time passes, the price of the option itself can change (the contracts are traded just like stocks or bonds). How much they change is influenced by both the price of the underlying stock and the amount of time left on the option.

Selling the option, not the underlying asset, is one way to offset that premium loss or even profit.

## **Options Trading 102**

Options trading can become very complicated very quickly. There are LEAPS (long-term contracts), choosers, barriers, compounds (exotics) and a host of technical parameters to measure volatility and predict price movements.

Thankfully, some of these complications can be simplified into a number of simpler trading strategies. Most revolve around using the fact that options have a contractually specified expiration date and strike price. This makes trading in them subject to some techniques not available in regular stock investing.

### **Calendar**

The 'calendar spread' or 'time spread' strategy involves simultaneously buying and selling two options of the same type, with the same strike price, but different expiration dates.

For example, purchase two calls of MSFT (Microsoft) at a strike price of \$27, but one set to expire on April 15, the other on June 17. The idea is to attempt to gain from the difference in price as each contract advances closer to maturity.

### **Straddle**

In a 'straddle' strategy the investor holds both a call and a put (on the same underlying asset, of course) with the same strike price and expiration date.

At first blush, this seems like betting against oneself. No matter which way the price goes, the investor loses. But, it's also true that no matter which way the price goes the investor gains.

It's this feature that makes a straddle a kind of hedging strategy. Since price direction and amount can only be predicted to some degree of probability, the investor is 'hedging his bets'.

While risky, the strategy can produce profits when price movements are large. Offsetting those potential profits is the fact that, where others are also betting on a large price movement, these options contracts tend to be priced higher.

### **Strangle**

Yet another variation is the 'strangle'. The investor holds both call and put options with the same maturity, but with different strike prices.

These contracts are purchased 'out of the money' and therefore cost less to buy. ('Out of the money' means the strike price of the underlying asset is higher (for a call) or lower (for a put) than the market price.) Their purchase price (premium) is lower since if the option were exercised immediately the investor would experience an immediate loss.

Suppose Microsoft (MSFT) is currently trading at \$30 per share. Buy one call at \$3 and one put at \$2 with the call having a strike price of \$35, the put \$25. (Total Investment =  $(\$3 \times 100) + (\$2 \times 100) = \$500$ .)

If the price over the length of the contracts stays between \$25 and \$35 the total possible loss = \$500, the cost of the options.

Suppose the price drops, though, to \$15. The call is worthless, but the put is worth  $(\$25 - \$15) \times 100 = \$1000 - (\$2 \times 100) = \$800$ . Subtract the cost of the call,  $\$800 - \$300 = \$500$ . This represents the net profit (ignoring commissions and taxes) on the trades.

Definitely do try this at home, but wear a safety helmet... in the form of following carefully the movements of both the options and the underlying assets.

## **Options - Volatility**

Because the actual calculation, and sometimes even the discussions, of volatility involve some fearsome mathematics, novice options traders often forgo learning about it. Those traders are at a disadvantage compared to their more intrepid competitors. And unnecessarily so, since the concept is not only useful but simple to understand.

In essence, volatility is a measure of how much and how fast prices are likely to change. Will MSFT (Microsoft), currently at \$27 increase to \$28 in the next hour, or fall to \$26? Does it continue to fluctuate like that for the day, or several days? Those are wide price swings in a short period - hence high volatility.

The issue is important since, if the price changes slowly, investors will have time to react. If the price changes by an extremely small amount, there is little to lose or gain. Both factors are important in measuring risk.

Mathematicians and options researchers being restless and curious people have naturally not stopped there. They've devised several different ways of defining and measuring volatility.

The most basic uses a statistical concept called 'standard deviation'. While the calculation is complex, the idea is simple. It's basically just a measure of how far from an average a certain amount differs (i.e. deviates). That calculation, carried out for data covering a year and then massaged a bit, becomes the figure shown in charts.

A variation on that number, called Implied Volatility (IV), uses factors you would intuitively expect: market price, strike price, expiration date, interest rate.

### **Why should a trader care?**

One reason is that IV tends to increase when the market is bearish and decrease when the market is bullish. Common sense reveals why.

If it's August in the Northern Hemisphere, say New York, and the temperature is 80 degrees (Fahrenheit), how likely is it to deviate to below 40 at noon? If it's late February, 40 degrees at noon isn't at all unlikely, but in August it would be surprising.

That deviation from the norm, and the measurement of its likelihood forms the basis of betting on future movements. (In fact, there are option-like derivatives known as Weather derivatives that do just that.)

If it were August in New York, traders would be bullish that it would rise above 70F. (It often does.)

### **How can a trader use volatility in evaluating trades?**

Volatility is one common measure of risk and options are fundamentally about trading risk. One of the most widely used gauges of that volatility is VIX (Volatility Index). First developed by the CBOE (Chicago Board of Exchange), it's calculated using a weighted average of implied volatility. The data forming that average comes from a wide variety of strike prices for calls and puts from the S&P 500.

Traders use VIX to gauge market sentiment, with a range of 20-25 indicating a probably sell-off. VIX increases as the market goes down and decreases when the market moves up. Again, common sense suggests an obvious reason.

Since volatility implies uncertainty, traders tend to be less concerned about a rising stock market than a falling one. Though shorting certainly forms part of many trading strategies, most traders look to gain from higher prices, not lower.

The higher the perceived risk, the higher the implied volatility and the more expensive options become. As the market declines, puts become more popular. Since traders generally expect the trend to continue (at least in the short term), committing to buy at a lower price becomes a preferred position. Higher demand means higher prices - in this case, for puts.

Tracking volatility should form part of any trader's strategy. Fortunately, one doesn't have to be a mathematician to incorporate this tool. Software that calculates and tracks the common measures of volatility are readily available. Add it to your toolbox.

## **Options - Glossary**

Bid - The highest offered price at a specified time.

Black-Scholes Model - A theoretical method of pricing using strike price, market price, interest rates, expiration date and other factors.

Butterfly Spread - A trading strategy consisting of the purchase of two identical options, together with the sale of one option with a higher strike price, and one option with an lower strike price.

(All options are of the same type, have the same underlying asset and the same expiration date.)

Calendar Spread - A trading strategy consisting of one long and one short option of the same type with the same exercise price, but which expire in different months.

Call - An options contract conferring the right to buy an underlying asset, such as 100 shares of stock, at a pre-set price, by a specified date.

Condor - A trading strategy consisting of the sale (or purchase) of two options with consecutive exercise prices, together with the sale (or purchase) of one option with a lower exercise price and one option with a higher exercise price.

Covered Call - A trading strategy which consists of holding a long position in an asset and selling call options on that same asset.

Delta - A ratio comparing the change in the price of an option to that of a change in the underlying asset.

Exercise Price - See Strike Price

Hedge - A technique of reducing risk by taking positions which tend to move in opposite directions.

Historic Volatility  $\bar{\sigma}$  (See Volatility) Calculated by using the standard deviation of underlying asset price changes from close to close trading for the prior 21 days.

Holder - The buyer of an option. (See Writer)

In-the-Money - A (call/put) option is in-the-money if the strike price is (less/more) than the market price of the underlying security.

Intrinsic Value - The difference between the underlying asset's price and the strike price. (For both puts and calls, if the difference is negative, the value is given as zero.)

Naked Option - An option written (sold) without a position in the underlying asset.

Option - A contract to buy (call) or sell (put) an underlying asset at a pre-set price by ('American style') or on ('European style') a specified date.

Open Interest - The total number of options contracts not closed or delivered on a given day.

Out-of-the-Money - An option whose exercise price has no intrinsic value.

Premium - The price an option buyer pays to an option seller.

Put - An option contract granting the right to sell an asset at a pre-set price within a specified time.

Straddle - A trading strategy consisting of a long (short) call and a long (short) put, in which both options have the same strike price and expiration date.

Strangle - A trading strategy consisting of a long (short) call and a long (short) put in which both options have the same expiration date, but different strike prices.

Strike Price - The price at which an underlying asset must be bought (call) or sold (put), if an option is exercised.

Time Value - The amount by which the current market price of a option exceeds its intrinsic value.

Volatility - A measurement of degree of change in price over a specified period of time.

Writer - The seller of either a call or put option.

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That's what WOW is all about. Your success is our ultimate goal and our reason for growth.