part 2

Succeeding with options

by Leonard Yates

Ed. Note: This is the second half of Yates' presentation of option strategies. Part 1 appeared in the September 1986 issue.

As promised in the first half of this article, here are three safe and reliable methods for succeeding in options without forecasting the underlying security.

Method #1: Temporary mispricings

Options frequently trade for as much as a one-half point difference from theoretical values for short periods. In such times of temporary mispricings, you should buy undervalued options and/or sell overvalued options. Strategies can be found that minimize your exposure to price movements in the underlying asset if desired, while waiting for option prices to return to normal.

An example will serve to make the point:

At midday on October 18, 1985, Federal Express stock was trading for 44-7/8 and the JAN 40 puts, almost five points out-of-the-money, were trading for 7/8. Pricing models indicated this put was 56 percent overvalued, as the theoretical price was only 9/16.

Let us first consider simply selling these JAN 40 puts. If we sell five contracts, the collateral requirement for this naked position is $4,000. Fortunately, most brokerage houses allow your collateral, as well as the proceeds from the option sale itself, to earn interest while it supports the position.

After a week's time, the option should return to its theoretical value, and we have the following outcome:

RETURN IF STOCK UNCHANGED	
JAN 40 puts decline to a price of 1/2.	
Gain [after commis.]	$109
Interest earnings	6
Total	$115
	(150% annualized yield)

Or playing the position all the way to January expiration (13 weeks hence), we have the following outcome:

RETURN IF STOCK AT 40 OR ABOVE	
JAN 40 puts expire worthless.	
Gain [after commis.]	$400
Interest earnings	85
Total	$485
	(48% annualized yield)

Some investors may not prefer naked writing because of its high margin requirements and open-ended risk. In addition, although the prospective $115 one-week gain may look attractive, this position has considerable sensitivity to price changes in Federal Express. If the stock rises one point your gain is practically doubled. But if the stock drops one point your gain is wiped out (see the accompanying chart).

Therefore it might be better to take a simultaneous position in another Fed Ex option to reduce the risk. Consider the JAN 45 puts, trading for 2-3/8 and theoretically valued at 2-1/4. If we buy just two of them it practically cancels the downside exposure of the five short JAN 40 puts. (Two contracts of one option can balance five contracts of another option because different options have different price-change relationships, i.e., deltas. Option software is useful for figuring all this out for you.)

The new position—long two JAN 45 puts and short five JAN 40 puts—happens to have a much lower collateral requirement: only $2,700.

Again allowing one week's time to go by, we have the following outcome:

RETURN IF STOCK UNCHANGED	
JAN 40 puts decline to a price of 1/2.	
Gain [after commis.]	$109
JAN 45 puts decline to a price of 2 1/8.	
Loss [after commis.]	-$83
Interest earnings	4
Total	$30
	[57% annualized yield]

The accompanying chart shows how this position is relatively insensitive to short-term price changes in the underlying asset. There is a slight downside bias, since the "hill" is centered over a price of 44-1/2, but the profit zone is an amazingly wide five point range.

The pure, more risky single option positions promise greater returns.

We'll not evaluate this position to January expiration because it's not a position that would be played to expiration unless you were forecasting a downside move in the stock. Beyond one week's time the profit/loss curve begins to take a decidedly bearish shape.

It's up to personal preference whether one uses conservative combinational strategies such as this or pure single option positions. Obviously the pure, more risky single option positions promise greater returns.

There are several reasons why options become temporarily mispriced, not the least of which is large institutional orders placed "at market." In this particular example, October 18 happened to be expiration day for the October options. Some institutional money manager might have needed to buy the JAN 40 puts that day in order to continue his "downside protection" for the Federal Express stock in his portfolio (in lieu of the expiring OCT 40 puts he may have been holding). Or maybe the Federal Express market makers were simply unwinding some lopsided positions.

In any case, price aberrations of sufficient magnitude to profit the private investor happen at least once or twice per week. If you're a daytime trader, this method could definitely be worth your while.

One possible disadvantage of Method #1 is that it requires intraday attention. Evening-time investors will find many opportunities among the closing quotes that evaporate by the opening bell.

In the previous issue, I outlined the advantages of using computers to take options positions when one had a good forecast of future price action. Since good forecasts of future price action are difficult to get, I then outlined one method of profitable trading without making such forecasts. This article describes two other methods of such trading.

Method #2: Maintain a balanced "strangle"

No kidding. There is an option strategy called the *strangle*. It involves the sale of out-of-the-money calls and out-of-the-money puts at the same time. As time goes by, both the calls and the puts decay in value. By choosing only out-of-the-money options your chances are excellent of reaping the entire benefit of the premiums should the options expire worthless.

An appropriate ratio between the number of calls and the number of puts can be selected that will "immunize" you to moderate price changes in the underlying asset. From time to time this ratio may need to be adjusted. If the price of the underlying asset moves up a few points, for example, you may need to "buy in" a few calls and/or sell a few more puts in order to re-balance your net position. The goal is to keep the position *delta neutral*, or practically insensitive to price changes in the underlying asset. Adjustments to the position will cost you, however, in terms of trade commissions, so their frequency should be kept to a minimum.

There is a fundamental reason why the strangle strategy ought to work especially well. It is because many assets have a *leptokurtic* rather than *lognormal* distribution of returns. Let me explain. And let's just talk stocks for a moment.

A basic premise of market theory is that stock returns (and stock prices, for that matter, since dividends are relatively constant) are lognormally distributed. This means, for example, that the chances of a stock doubling are roughly equal to the chances of the stock going to half its current price.

To grasp the concept of lognormal distribution, picture a bell shaped curve over a logarithmic scale (see Figure 1). On a logarithmic scale, the intervals represent orders of magnitude rather than simple units. The vertical axis here represents probability.

In Figure 2, the one-year probability distribution is shown for Telex. The curve is centered over 33-3/8, which was the market price for Telex on August 9, 1984. One year hence, on August 9, 1985, the price of

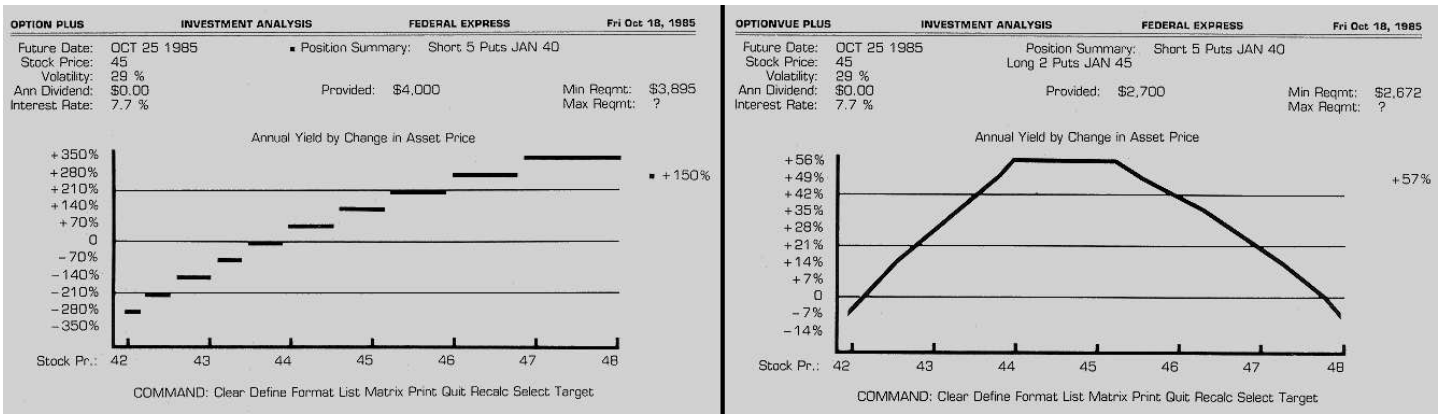


Figure 1:

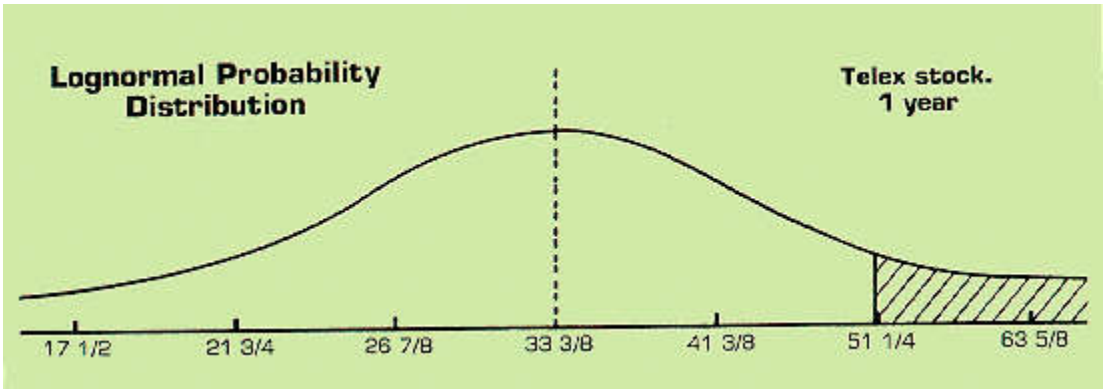


Figure 2:

Telex is expected to lie somewhere on this scale. The probability of the price being within a given interval is directly proportional to the area under the curve in that interval. For example, the shaded region illustrates the chances of the stock going to 51-1/4 or higher in one year's time. It is 17 percent, because the area under the curve from 51-1/4 upward involves 17 percent of the total area under the curve.

Note: The exact breadth of the Telex distribution is based on the assumption (a rather crucial one) that the volatility of Telex continues at its current level: 0.45. Volatility is a measure of how much a stock price fluctuates over a given period of time. It is a key element in the pricing of options. Most stock volatilities change only very gradually over long periods of time. However, they **can** sometimes change very rapidly during instances of company merger news or other serious management changes, turns of events, earnings unpredictability, etc.

Price aberrations of sufficient magnitude to profit the private investor happen at least once or twice a week.

As a practical matter, the lognormal distribution need not be centered over today's price, because stocks have positive long-term secular drift. Some of this positive drift is accounted for by the lognormal distribution itself, which carries an intrinsic positive bias, but not all of it. Therefore, the assumption that the one-year distribution for Telex centers over 33-3/8 may not be perfectly correct. Nevertheless, Figure 2 serves the illustrative purpose.

Now here's the catch: Studies have shown that actual stock price behavior is not precisely lognormal; it is somewhat leptokurtic. A leptokurtic distribution has a taller center area and somewhat fatter tails than the standard bell curve (see Figure 3). In a paper by Eugene F. Fama entitled *The Behavior of Stock Market Prices*, all 30 of the stocks comprising the Dow Jones Industrial Average were found to exhibit some degree of leptokurtosis. With every stock, the empirical distribution showed greater probability of being within a single standard deviation of the center point than the lognormal distribution would suggest—on average 6.4 percent more probable.

The lognormal distribution is, nevertheless, generally accepted as a very close approximation to real-world stock price behavior. The assumption that stock prices *are* lognormally distributed underlies most of the popular option pricing models, including the Black-Scholes model, the most widely accepted standard for the pricing of options.

Options are, and will continue to be, priced as though their underlying asset behaves lognormally. But the fact that price distributions are more leptokurtic than lognormal presents a profit opportunity for those of us who recognize it. By selling out-of-the-money calls of an appropriate strike price and selling out-of-the-money puts of an appropriate strike price, we can "hedge in" (strangle, if you will) the area of leptokurtic curve which extends above the lognormal bell curve.

The result is a greater probability for success with both the calls and the puts than their theoretical (and presumably, market) prices would indicate.

Just how much can we expect this leptokurtic discrepancy to contribute to the pocketbook? I don't know for sure. However, an excellent study by ECO Trends (One Richmond Square, Providence, RI 02906; Dec 1985 issue) would seem to indicate that a 46 percent annual return is reasonable. The method dl their approach, in which 10 years of price history was simulated, was to write equal numbers of calls and puts

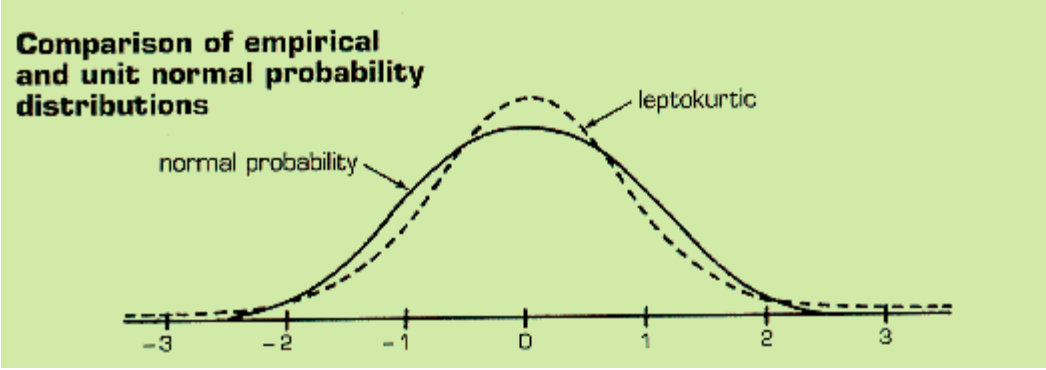
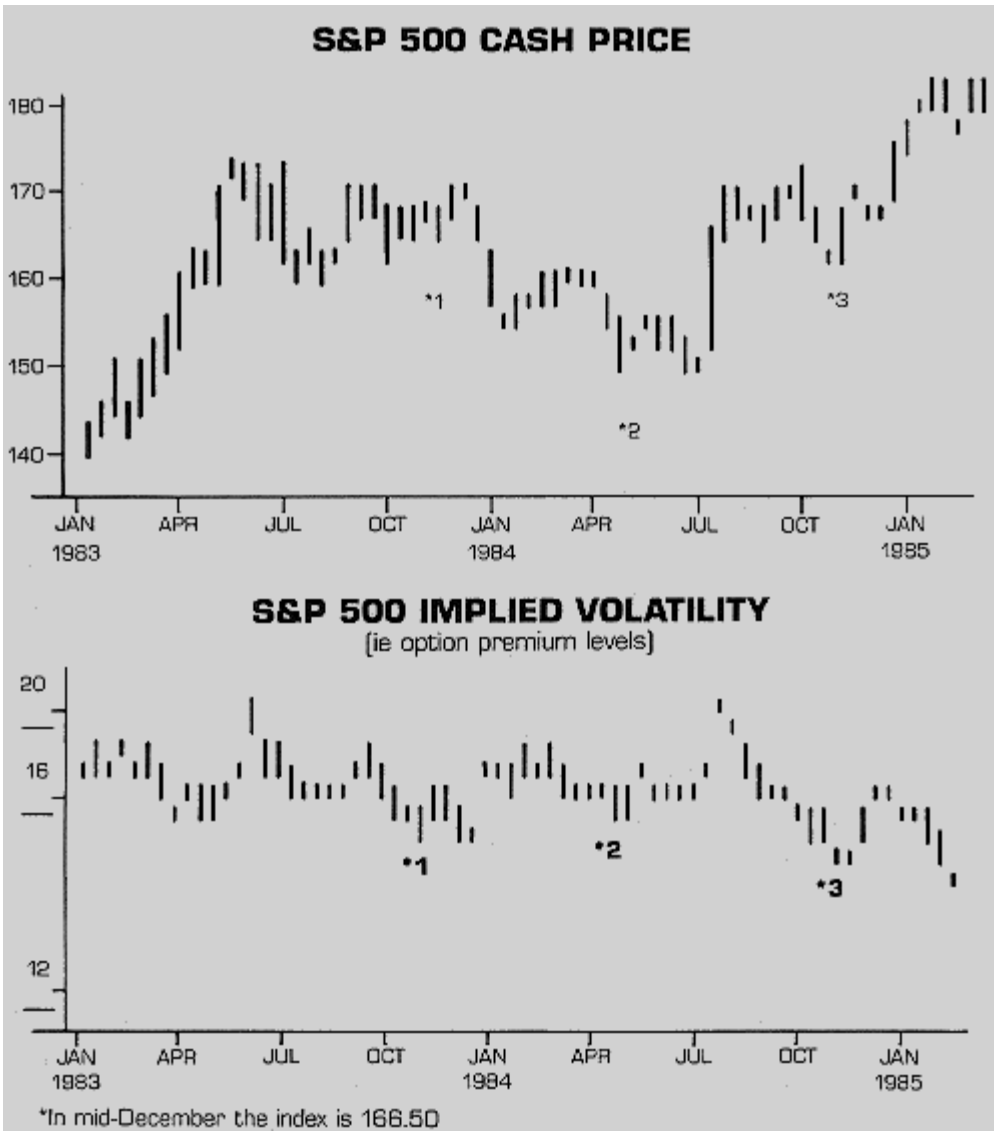

Comparison of empirical and unit normal probability distributions
leptokurtic
normal probability
-3
-2
-1
0
1
2
3

Figure 3:


S&P 500 CASH PRICE
180
170
160
150
140
*1
*2
*3
JAN 1983
APR
JUL
OCT
JAN 1984
APR
JUL
OCT
JAN 1985
S&P 500 IMPLIED VOLATILITY
(ie option premium levels)
20
16
12
*1
*2
*3
JAN 1983
APR
JUL
OCT
JAN 1984
APR
JUL
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JAN 1985
*In mid-December the index is 166.50

Figure 4:

on the S&P 100 index at 10-point strike price differences when there was only 20 days remaining till expiration. Thus a new position is put on each month and carried all the way till expiration. Greater returns than their study would indicate should be possible by applying delta balancing, loss stops (or other kinds of adjustments in response to adverse price moves), and utilization of the 10 days per month they left idle.

One investor I know who applies the strangle method, and with whom I have contact on a regular basis, earns a steady $1,000 to $1,200 per month on his $30,000 investment by strangling the S&P 100 (OEX) index. That's a 40 to 48 percent annual rate of return. And he's been able to keep this up for a year and a half now.

An advantage of this method is that it requires very little effort to maintain. Although you would want to check your positions at least every other day or so, and possibly execute a trade about every other week, the effort required should be minimal with the right computer tools. Everything can be analyzed in the evening based on closing prices.

One disadvantage: Since the sale of a strangle is *naked writing*, it involves high dollar margins (some brokers require $15,000 minimum). Some investors may not have these kinds of resources. Naked writing also entails the possibility of significant losses should the underlying asset make a big price move before you have a chance to respond (i.e., while you're away on vacation). Many find the index options more attractive than stock options for this reason; a company can be bought out, an index cannot. Being out of the market during vacations is advisable.

Fortunately, the margin rules for options work in your favor with a strangle. For as many call options that can be paired off one-for-one with put options, the total requirement is the naked option margin for the calls or the naked option margin for the puts, whichever is greater. The reasoning involved here is that the price of the underlying security could not possibly move against your call position and your put position at the same time. As a result the side with the lesser requirement gets a free ride. Not only does it get a free ride but the proceeds from the sale help to support the net position.

Method #3: The volatility game

The system here is to buy *straddles* when implied volatility is running low (by historical standards), and sell naked straddles when implied volatility is running high.

The term straddle, used loosely in this section, means the purchase of both calls and puts on the same underlying asset but not necessarily of the same strike price and not necessarily the same number of calls as puts. These details can be optimized to achieve the highest returns at the lowest risk.

The term *implied volatility* refers to a sort of reverse relationship between an asset and its options. Normally we think of option values as being dependent on their underlying asset, and they are. But implied volatility is computed by working theoretical pricing models backwards to solve for volatility of the underlying asset as an unknown from actual market option prices. Of all the inputs to the Black-Scholes formula and other pricing formulas, underlying asset volatility is by far the most difficult to measure and forecast. Perhaps this is why, when option market prices differ from fair value, we say that options are implying a different volatility for their underlying asset.

True volatility, as measured from the price behavior of the asset itself using statistical methods, is relatively constant. Most asset volatilities change only very gradually over long periods of time.

Perceived volatility, as measured from option premiums, tends to be more shortsighted. If the price of an asset drifts sideways for several weeks, option premiums can be observed to diminish considerably. At this point option premiums are implying a much lower volatility than true volatility for the underlying asset.

This is the time to position yourself in a straddle.

The payoff comes when the asset makes its next significant move, and fortunately we don't care which *way* it moves. The basic nature of the straddle insures a gain. If the asset moves up, the calls gain more than the puts lose, an vice versa. An added bonus comes from the jump in perceived volatility which almost always accompanies a significant jump in asset price. This "re-inflates" the premiums of both calls and puts on that asset. Your straddle should be sold when implied volatility returns to an average level or higher.

If and when option premiums swell to unusually high levels— implying a higher than true volatility for the underlying asset— this is the time to sell (short) a straddle. Then as the perceived volatility subsides, you pocket the change from diminishing option premiums. Time is on your side as well, since option premiums waste gradually away over time. Nevertheless, the position should probably be closed as soon as implied volatility drops to an average level.

Notice the charts on the S&P 500 index in Figure 3. Implied volatility can be observed to fluctuate inside a definite range from 11 to 19. The asterisks mark three instances where implied volatility dipped especially low and a straddle purchase would have been appropriate. Notice that index price behavior is especially quiet prior to these opportunities.

In a short time, the index makes a breakout move and implied volatility soars again.

What returns can be expected from applying this method? Let's go over the numbers briefly for each of points 1, 2, and 3 on the charts for the S&P 500.

#1 In mid-December the index is 166.50

We can buy 4 MAR 170 calls @ 4.25 and buy 4 MAR 170 puts @ 4.50

for a total cost of $3,650.

In late January the index dropped to 155.00 and perceived volatility jumped to 16.

At this point the MAR 170 calls may be sold for 0.30

the MAR 170 puts may be sold for 13.25

Net gain: $1,780 = 49% or 400% annualized.

#2 In early June the index is 152.75

We can buy 3 SEP 155 calls @ 5.55 and buy 4 SEP 155 puts @ 4.00

for a total cost of $3,400.

In early August the index rose to 169.20 and perceived volatility jumped to 19.

At this point the SEP 155 calls may be sold for 16.50 and the SEP 155 puts may be sold for 0.45

Net gain: $1,723 = 51% or 304% annualized.

#3 In early December the index is 162.30

We can buy 4 MAR 165 calls @ 4.55 and buy 5 MAR 165 puts @ 3.15

for a total cost of $3,540.

By February 7th the index rose to about 184.00 and perceived volatility jumped to 15.

At this point the MAR 165 calls may be sold for 21.65 and the MAR 165 puts may be sold for 0.05

Net gain: $5,100 = 144% or 835% annualized.

Note: In every case an appropriate number of calls and puts was selected to produce a balanced position. Had the index moved the opposite way than it did (but by a similar magnitude) the results would have been roughly the same.

Trading on the basis of implied volatility extremes is easy to carry out with only occasional attention. There is plenty of time (days, or even weeks) to capture an opportunity and there is no particularly critical time at which the position must be closed, except possibly for certain situations involving short straddle positions.

Since the sale of a straddle is naked writing, it involves high dollar margins (some brokers require $15,000 minimum) and the possibility of significant losses should the underlying asset make a big price move. Some investors will want to play only the buying side of the volatility game.

However, since the selling side of the volatility game is akin to Method #2 (selling naked strangles), it carries all of the advantages of that method and I recommend pursuing it if you can.

Method #3 requires an accumulation of implied volatility information and the weekly maintenance of implied volatility charts—something your personal computer, again, can help you with.

Conclusions

Many a novice in options has experienced, shall we say, inconsistent results. Some have skipped from method to method without satisfaction, never sticking with an approach long enough to really make it work. A large part of the problem is failing to accurately forecast the underlying asset, and forecasting is the foundation of most people's approach to options. For quite a few, the problem is not having the right tools at their disposal, i.e., computer assistance.

I have presented the three best methods I know of for succeeding in options. Fortunately for those of us who have trouble predicting the market, all three of these methods work without the need to do so. If you happen to especially like one of the three methods, I would encourage you to focus on that method and stick with it. If you happen to be one of those who feel strongly about your ability to predict the market, you might bias your investments in favor of your forecasts, but I would be wary of going too far out on a limb.

I believe that the investor who is knowledgeable, persistent, and equipped with the right tools will find investing in options to be a very rewarding enterprise. Switching to a method that does not require one to forecast the underlying security might be just the ticket to safer and more reliable gains.

Leonard (Lenny) Yates is a professional programmer with 12 years of experience in both corporate and private software development work. He is the founder and sole proprietor of Star Value Software (12218

Scribe Drive, Austin, TX 78759, 512/837-5498), a company that specializes in options modeling software.

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The basics

There is a special vocabulary of options trading that must be mastered in order to understand the uses of options and communicate with brokers and other option traders .

An option is a legal contract that gives the holder the right to buy or sell a specified amount of the underlying asset at a fixed or determinable price (called the exercise or strike price) upon exercise of the option. Options that can be exercised at any time before they expire are sometimes called *American options*. They are to be distinguished from *European options*, which can be exercised only during a specified period immediately before expiration. Almost all listed options that trade in the United States are of the American type.

Options have standardized terms, including strike prices and expiration times. This is what makes it possible to provide a secondary market in which holders or writers of options can close out their positions by offsetting sales and purchases. By selling an option with the same terms as the one he bought, or buying an option with the same terms as the one he sold, an investor can liquidate his position at any time.

A **call** option conveys the right to *buy* and a **put** option conveys the right to *sell* a specified quantity of the underlying asset. For example, this might be 100 shares of a particular common stock.

The option buyer is the person who obtains the right conveyed by the option. He is sometimes referred to as the holder. Only the option buyer has a right to exercise an option. The seller of an option (often referred to as the writer) is obligated—if and when he is assigned an exercise—to perform according to the terms of the option. For example, if a Sears call is exercised by the buyer of the option, the option writer to whom the exercise is assigned must deliver 100 shares of Sears common stock. He will be paid for the shares at the exercise price, regardless of the current market price of Sears.

More terms of the trade

- **Covered call writer.** If an investor owns at least the amount of the underlying asset that is deliverable upon exercise of the calls he has written, he is said to be a covered call writer.

- **Exercise price.** The price at which the underlying asset will be sold if and when the option is exercised. Options at several different exercise (or strike) prices are usually available on each underlying asset.

- **Expiration date.** This is the date on which the option expires. If an option has not been exercised prior to expiration, it ceases to exist. That is, the option buyer no longer has any rights, the option writer no longer has any obligations, and as a result the option no longer has any value. The expiration date for all options traded on common stocks and stock indexes is the Saturday immediately following the third Friday of the expiration month. Options at three or more expiration dates are usually available for each underlying asset.

- **Premium.** This is the price of the option. Premiums are subject to continuous change in response to such variables as the relationship between the exercise price and the current market value of the underlying asset, the volatility of the underlying asset, the amount of time remaining until expiration,

current interest rates. and the effect of supply and demand in the options market.

Call option premiums go up when the price of the underlying asset goes up, so that a bullish speculator might buy a call in hopes of. a profit. Conversely, put option premiums go up when the price of the underlying asset goes down, so that a bearish speculator might buy a put in hopes of a profit.

The bottom line—an option premium is a direct reflection of the potential returns associated with the option. The more volatile the underlying asset, for example, the more expensive its options because the greater volatility gives rise to greater possibilities of success for the buyer of the option.

A writer who is not a covered writer may hold an option that offsets some or all of the risk of the option he has written, in which case he is said to be in a **spread position**. A writer who is neither a covered writer nor in a spread position is called an **uncovered** writer (or, more colloquially, "naked" writer). The distinction between covered and uncovered call writing positions is important since, as will be seen, uncovered call writing can involve substantially greater exposure to risk than covered call writing.

• **Intrinsic value and time value.** It is sometimes useful to treat the value of an option as consisting of two components: intrinsic value and time value. *Intrinsic value* reflects the amount, if any, by which an option is in-the-money. If a call option with a strike price of 40 is available on a security that is presently trading at 44, then the option is said to have an intrinsic value of 4 because the holder could exercise his option, obtaining the security for a price of 40 and sell it on the market at 44 for a 4-point gain. *Time value* is whatever value the option has in addition to its intrinsic value, and reflects what a buyer would be willing to pay for the option in the hope that at some time prior to expiration its value will increase because of a favorable change in the price of the underlying asset.

• **In-the-money.** This is simply a way of saying that, at the current market price of the underlying asset, an option has some intrinsic value. The amount of the intrinsic value is the amount by which the option is said to be in-the-money.

• **At-the-money. W**hen the market price of the underlying asset is the same as the exercise price of an option, the option is said to be at-the-money.

• **Out-of-the-money.** If the exercise price of a call is above the current market price of the underlying asset, or if the exercise price of a put is below the current market price of the underlying asset, the option is said to be out-of-the-money by that amount.

• **Delta.** Delta is the change in an option contract's dollar value in response to a one point change in the price of the underlying asset. For instance, if a call option on common stock rises ½ point in reponse to a one point rise in stock price, the option is said to have a delta of 50, because if the stock rises one point then the option holder gains $50 per contract. Deltas for stock options range from 0 through 100 for calls, and from -100 through 0 for puts. Put deltas are negative because of their inverse price relationship with the underlying asset.

• **Spreads and straddles.** These are two types of combination positions, which involve positions in more than one option at the same time. A *spread* involves being both the buyer and writer of the same type of option (puts or calls) on the same underlying asset, with the options having different exercise prices and/or expiration dates. A *straddle* consists of purchasing or writing both a put and a call on the same underlying asset, with the options having the same exercise price and expiration date.

• **Strategies.** The various uses for options are called strategies. Covered writing, naked writing, simple

purchase, spreads, straddles, and conversions are all names for different option strategies. Some of the more exotic strategies involve positions in up to four separate options on the same underlying asset.

• **Time and exercise considerations.** The time value of an option decreases as its expiration date draws closer. For in-the-money options, the total option premium gradually moves toward the intrinsic value of the option until the option is worth exactly the intrinsic value on the last day. For out-of-the-money options, the total premium gradually decays to zero.

Exercise of in-the-money options at some point prior to expiration is a practical certainty. For most in-the-money options, exercise happens on the final day of trading. Failure to exercise an in-the-money option prior to expiration is to throw away its intrinsic value, and a holder will never do this except by accident or negligence.

Exercising an option sooner than the last trading day, rather than selling it back on the market, is seldom done unless the time premium is practically all gone. This is because to exercise an option is to throw away its time premium (the writer receives a windfall). For example, if a call option with a strike price of 40 is trading at a price of 4-7/8, and the underlying asset is trading at a price of 44, to exercise would be to redeem the option's intrinsic value of 4 (the stock, worth 44, is obtained for 40). However, to simply sell the option back on the market would redeem its full value: 4-7/8.

Instances where an option might be exercised well in advance of the end of its life are: (1) in-the-money stock calls with less remaining time premium than the amount of an impending stock dividend, and (2) deep in-the-money puts. In the case of in-the-money calls, market makers will often exercise them in time to obtain a stock dividend if the dividend is larger than the amount of option time premium they are forfeiting. In the case of deep in-the-money puts, it can be more advantageous to be short the underlying asset (the result of exercising) than to continue to he long the put and forfeiting the potential to earn interest, since the option position costs the holder had cash.

A review of the basic strategies

• **Simple purchase.** This is the straightforward purchase of a call or put. In its purest sense, the simple purchase is a speculation that the price of the underlying asset will move sufficiently in favor of the option to realize a profit.

• **Naked sale.** The sale of a call or put without the presence of a covering position in the same account—either in the underlying asset or with a long position in another option of the same type and not expiring sooner than the option sold. Naked writers are betting that the price of the underlying asset will remain in a range that allows the option to eventually expire worthless, or that they can repurchase the option later at a lower price.

If, however, the price of the underlying asset does not remain in the hoped-for range, the naked writer may experience large losses if the option is driven deep into-the-money. The writer of a naked call, for example, incurs theoretically unlimited risk because of the possibility of the underlying asset's price soaring. The risk of writing naked puts is theoretically limited only by the fact that the price of the underlying asset cannot drop below zero.

• **Covered sale.** The sale of a call or put when the appropriate position (long if call; short if put) in the underlying asset is present in the same account. Covered writers aim to hedge their position in the underlying asset.

• **Debit spread.** The simultaneous purchase of one option and sale of another option of the same type (puts or calls) that results in a net debit due to the fact that the option purchased had a higher premium than the option sold.

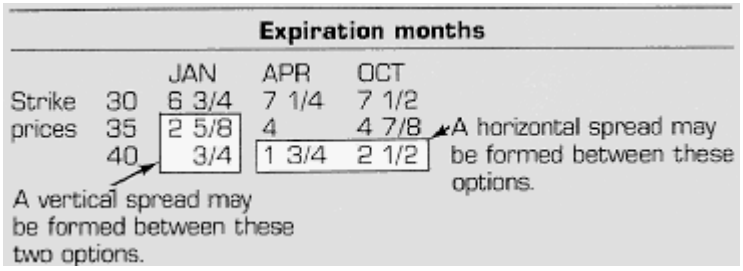
• **Credit spread.** The simultaneous purchase of one option and sale of another option of the same type (puts or calls) that results in a net credit due to the fact that the option sold had a higher premium than the option purchased. Again, depending on the specifics, a credit spread may represent a bullish, bearish, or neutral position in the underlying asset.

• **Horizontal or time spread.** The simultaneous purchase of one option and sale of another option of the same type, where both options are of the same strike price (i.e., of different expiration months). Horizontal spreads tend to be neutral, benefiting mostly from the passing of time, but can sometimes have a bearish or bullish bias.

• **Long straddle.** The simultaneous purchase of a call and a put of the same strike price and expiration month. The buyer of a straddle hopes for a significant move in the price of the underlying asset, but he doesn't care which way. If the asset price moves up, the call should gain more than the put loses, and vice versa.

• **Vertical spread.** The simultaneous purchase of one option and sale of another option of the same type, where both options are of the same expiration month (i.e., of different strike prices). Vertical spreads have a decidedly bullish or bearish inclination, depending on whether the spread is in calls or puts, and whether it is a debit or credit spread.

Note: The terms horizontal and vertical can be thought to | relate to the way option quotes have always been presented in the *Wall Streat Journal* and other papers. For example:



• **Short straddle.** The simultaneous sale of a call and a put of the same strike price and expiration month. The seller of a straddle hopes for very little price movement in the underlying asset. If the asset price converges close to the strike price of the options near expiration day, the straddle seller may realize a significant profit from both options due to time decay.

For a more detailed look at options, I refer you to several books on the subject:

Characteristics and Risks of Standardized Options (pamphlet) (available from most brokerage houses)

The Stock Options Manual, by Gary Gastineau

Options As A Strategic Investment, by Lawrence McMillan

The Dow Jones-Irwin Guide to Put and Call Options, by H. Clasing Jr.

Inside the Commodity Option Markets, by John W. Labuszewski and Jeanne Cairns Sinquefield

Option Pricing, by Jarrow and Rudd (rigorous mathematics).

