Succeeding with options

part 1

by Leonard Yates

An option is one of the most flexible forms of contractual agreements ever developed. Options may be used to take advantage of almost any type of market scenario one can imagine. There are option strategies that can be used to profit from the expectation of increasing, decreasing, or stable prices, or of high or low market volatility. Other strategies may be used to exploit situations where an option may be under- or overpriced relative to other options or the underlying asset. Options are usually available with many different strike prices and terms to expiration on the same underlying asset. Therefore one generally can tailor a strategy close to one's goals.

Although option strategies may be developed that are very diverse in purpose and nature, they all have one thing in common: they are all motivated by the promise of financial reward. Unfortunately, there is no such thing as a "sure" option strategy; for every reward for which the investor grasps, he takes on a corresponding risk. The risks and rewards associated with option trading generally balance when the option is fairly priced. Astute option traders, however, do not look for situations where risk and potential rewards balance; they look for situations where potential rewards seem to outweigh the associated risk.

Many option trading strategies are based upon an assessment of the fair market value of an option in relation to the prevailing market price. However, many other option traders employ fundamental or technical analysis to determine the likely price behavior of the asset underlying the options, and then they take a position in options that will make the most of the move that is expected.

This article will introduce you to some of the concepts of "fair pricing." Then, three relatively safe and reliable methods are discussed for trading options quite successfully. Along the way I'll show how your personal computer can become an invaluable assistant.

Put and call options are currently available covering five types of underlying assets:

- Common stocks
- Stock indexes
- Government debt securities and GNMAs
- Foreign currencies
- Many futures contracts

In this article I will refer to the "underlying asset" rather than, for example, the "underlying security" or "underlying commodity" because the principles and methods discussed apply to all the presently available types of options, not just those on securities or commodities.

The concept of fair value

Pricing models have been developed for determining the fair value of an option. The process of evaluating market prices in relation to computed fair values is important; professional traders refer almost constantly to their models in order to avoid buying overpriced or selling underpriced options.

Numerical methods for determining the fair value of an option work by breaking down the potential price range for the underlying asset into a large number of small intervals. To each interval is assigned the probability of the underlying asset's price going there. Starting on expiration day and working backwards in time to the present, a single "fair value" is computed from a long series of probability-weighted averages.

Aside from numerical methods, a few "closed form" solutions have been derived. Among these, the Black-Scholes formula is by far the most widely used. Computing fair value with the Black-Scholes formula is much easier than by numerical methods. Even so, the formula is sophisticated enough that just to look at it, one could not possibly infer how it works.

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The Black-Scholes formula is at least simple in that it requires only a few inputs. These are as follows:

Underlying asset price and volatility

Option strike price

Time till expiration

The risk free interest rate (i.e., 13-week T-bills)

Most of these data are readily available. Only one—volatility—can be troublesome to compute and forecast. We will discuss volatility later.

The computation of "fair value" by means of pencil and calculator, no matter what the formula, is a time-consuming and error-prone process. Therefore, pricing models lend themselves well to implementation on a computer, which is one of the reasons I advocate computer assistance for all option traders and option investors.

Quite a few software packages are available for use on the IBM family and Apple computers which can not only compute "fair values" (in typically less than 0.2 seconds per option using the Black-Scholes formula), but can also simulate what *will* happen to option "fair values" across a broad range of future prices for the underlying asset. This can help you simulate trades and determine which of the available options on an underlying asset is the best to take a position in.

Our firm's software package, entitled OptionVue Plus ($695; Star Value Software, 12218 Scribe Drive, Austin, TX 78759), is recommended for this purpose because of its high level of sophistication and professional design. A unique feature of this software package is that it can generate specific buy and sell recommendations based on a user-supplied forecast for the underlying security and how much money is to be invested in any specific instance.

You may also refer to *The Individual Investor's Microcomputer Resource Guide* ($11.95; Investment Information Services Press 205 W. Wacker Drive, Chicago, IL 60606) for descriptions of several option

software packages. This guide is published by the American Association of Individual Investors. In addition detailed reviews of some option software packages are featured in *The Book of IBM Software 1986* ($19.95; Arrays, 11223 S. Hindry Avenue, Los Angeles, CA 90045).

For a thorough and well-written book on option pricing models, I refer the reader to *Option Pricing* (Dow Jones-Irwin) by Jarrow and Rudd. However, be prepared for some rigorous mathematics.

Someone may ask, "How much money does it take to get started in options?" Practically speaking, it takes at least $2,000, but even at that level your involvement had better also be a hobby. Otherwise the dollar returns on just $2,000 would not likely justify the time and effort required. In it for some serious money as well? I'd say the minimum is $15,000.

Computer-assisted trading

The importance of computer assistance in option trading cannot be overemphasized. Even when simply buying calls or buying puts, a good options program can help steer you into the right option. And it can make a big difference which of the available options you pick.

Consider the following example:

The date is August 9th. A stock, trading for 33-3/8, sports the following set of option prices:

	Calls			Puts		
	Sep	Dec	Mar	Sep	Dec	Mar
30	4–1/2	5–3/4	6–7/8	5/8	1–5/8	2–1/4
35	1–3/4	3–3/8	4–1/4	r	41/8	r

Suppose we have a forecast for this stock to rise to between 35 and 40 in about six weeks' time. There is $4,000 to invest. What would be the best call option purchase? With six different calls to choose from, what rational process does one follow? My answer: let a computer do it.

By modeling option price and time change relationships, a computer can forecast what will happen to option prices (and therefore our profits) based on our forecast for the underlying asset. For each of the six call options available in this example, the computer figures how many contracts may be afforded with $4,000 and then simulates the potential outcomes of that investment, averaging them into a composite result: i.e., expected return.

The computer ranking for all six call options is as follows:

	% Expected Return	Standard Deviation
Best call purchases:		
1. Buy 8 Calls SEP 30	+56%	+/–30%
2. Buy 9 Calls MAR 35	+52%	+/–24%
3. Buy 11 Calls DEC 35	+46%	+/–29%
4. Buy 6 Calls DEC 30	+41%	+/–20%
5. Buy 22 Calls SEP 35	+40%	+/–78%
6. Buy 5 Calls MAR 30	+35%	+/–16%

Notes: Discount broker trade commissions are taken into account. These percentage expected returns are not annualized. Expected return is computed by averaging investment outcomes over the target price range for the underlying asset. Standard deviation is the plus-and-minus amount that encompasses 68 percent of all possible outcomes, and is computed using traditional statistical analysis methods. You could consider standard deviation a measure of risk. The higher the standard deviation, the greater your uncertainty of the outcome, i.e., the greater the risk.

These results are interesting because, for those who prefer to "fly without instruments," the instinctive reaction is to buy the near-term, just out-of-the-money option: i.e., the SEP 35s.

But notice the SEP 35s rank only fifth on the computer's list. In fact, buying 22 SEP 35s would likely yield only 40 percent, or $640 less than the computer's top choice. And of all six options, the SEP 35s are far and away the most risky at 78 percent standard deviation!

Few people are aware that it can make this much difference to pick the right option. A personal computer and some good software can help you quantify your judgments and place your money where it earns the best return. If nothing else, computer analysis can prevent the investor from making many a costly mistake.

Before leaving this example entirely, let us briefly consider whether there is a spread or some other combination that would possibly do better than the simple purchase of a call option.

Again letting the computer do the work:

Bast Spreads:

	Buy	Sell	% Expectad Return	Standard Daviation
1.	14 Calls SEP 30	14 Calls SEP 35	+70%	+/–1%
2.	15 Calls MAR 35	15 Calls SEP 35	+57%	+/–18%
3.	41 Calls MAR 35	41 Calls DEC 35	+51%	+/–2%
4.	23 Calls DEC 35	23 Calls SEP 35	+51%	+/–27%
5.	9 Calls DEC 30	9 Calls SEP 35	+43%	+/–4%
6.	16 Calls DEC 30	16 Calls DEC 35	+36%	+/–11%

Yes indeed. One stands out: The vertical debit spread Sep30/Sep35. It promises a 70 percent return on your money. The risk is also the lowest among all the candidates, even including the call purchases and other strategies considered. The standard deviation of only 1 percent means that there is practically no variation of outcomes for this investment if the stock is anywhere in the range from 35 to 40 six weeks from now.

Briefly reviewing, a spread is a position involving two options of the same type (either calls or puts) on the same underlying asset. The trader buys a number of contracts in one option and simultaneously sells the same number of contracts in another option, hoping to benefit from a favorable change in their relative prices.

Spread trading strategies are more conservative than strategies involving the outright purchase or sale of a single option. And for moderate forecasts (somewhat bearish, to neutral, to somewhat bullish) with time horizons of six weeks or more, spread trading strategies are generally much more profitable.

Trading on the basis of forecasting the underlying asset promises incredible returns if your forecasting is good. Unfortunately, predicting the market can be tricky. Some consider it more of an art than a science. Even those who have a science for it confess to the cost and/or time-consuming nature of the process. Not all investors may want to spend this much effort. That is why I want to discuss three safe and reliable methods for succeeding in options without forecasting the underlying security. These methods will be covered in the next issue.

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