

# Crossing the OPTIONS FINISH LINE

Analyzing options in terms of their intrinsic values and using a 50-percent profit target provides a simple framework for determining whether to hold or fold a trade.

2005 call options on Sept. 3, 2004. Table 1 lists the amount each option is in the money (the intrinsic value), and the bid and ask prices. Figure 1 shows the option's ask prices in terms of their intrinsic values. The x-axis represents the amount each call is in-the-money and the point where its curve crosses zero — \$2.10 — is the estimated ask price of an at-the-money April call option.

If you make similar charts for options on different stocks, you can compare how volatile the market expects them to be. For a given expiration date, the higher the estimated price of an at-the-money call, the higher the implied stock volatility. When searching for underpriced calls to buy, look for stocks you expect to be more volatile than what is implied by the price of their options. (See "Related reading," p. 57, for other

articles that discuss this technique.)

While there are many ways to attempt to capture the potential profit in these situations, the "finish-line" strategy is fairly straightforward: 1) Buy call options that expire in seven months on stocks you expect to be more volatile than their options' prices imply, and 2) Hold these calls until they can be sold for a 50-percent profit or until they expire.

### The finish line

The finish line represents the price the stock must hit for a specific call option to post a 50-percent gain. Figure 2 shows the finish line for a Cisco April 17.5 call, which was priced at \$2.90 on Sept. 3, 2004 when the underlying stock was trading at \$18.75. (Note: I did not buy this option because it was not priced favorably. In "Bargain hunting for

BY GEORGE HOEKSTRA

Option prices reflect their underlying stock's implied volatility, which is the market's estimate of its future volatility. If you can gain insight into a stock's volatility characteristics, it is easier to buy underpriced call options and construct a potentially profitable trading strategy that requires little maintenance.

"Bargain hunting for options" (*Active Trader*, January 2005) shows that a good way to analyze option prices is to chart them by the amount they are in-the-money. Following up on some of the same stocks and options from that article, Table 1 and Figure 1 show the prices of three Cisco Systems (CSCO) April

TABLE 1 CSCO CALL OPTIONS (UNDERLYING PRICE OF \$18.75)

Three of Cisco's April 2005 calls are listed with their intrinsic values and bid/ask prices when the stock traded at \$18.75 on Sept. 3, 2004.

Option	Amount in-the-money (Intrinsic value)	Bid	Ask
April 15 call	\$3.75	\$4.50	\$4.70
April 17.5 call	\$1.25	\$2.80	\$2.90
April 20 call	-\$1.25	\$1.50	\$1.60

options,” this Cisco option was described as unfavorably priced, but it served as a reference for two options I did buy — Maytag and Elbit systems, which were priced favorably.)

Cisco’s call option curve (Figure 1) contains all the information needed to draw the April 17.5 call’s finish line. You need two points: The underlying price required for the call to be worth 50 percent more (\$2.90 + 1.45 = \$4.35) on both Sept. 3, 2004 (point A) and April 15, 2005 (expiration day - point B).

Figure 1 shows the option must be \$3.20 in-the-money for it to be worth \$4.35 on Sept. 3. Cisco must trade at \$20.70 (point A on Figure 3), or the call’s strike (\$17.50) plus its intrinsic value (\$3.20), for the call to be worth \$4.35 that day.

On expiration day, the call has no time value, so its price will be the same as its intrinsic value. On April 15, 2005, Cisco must trade at \$21.85 (point B), or the call’s strike price (\$17.50) plus its target market value (\$4.35), for the option to post a 50-percent profit.

The finish line is simply a straight line connecting point A and point B. When Cisco crosses above this line, you would sell the April 17.5 call since it will be worth at least \$4.35, which represents a 50-percent gain. If the stock languishes, you can let the option expire.

Figure 2 shows Cisco quickly rose from \$18.75 to \$20.75 in the first two weeks after Sept. 3, but fell short of the finish line. The stock then traded between \$18 and \$20 over the next couple of months. If you’d bought the April 17.5 call on Sept. 3 with this strategy, you’d continue to hold it.

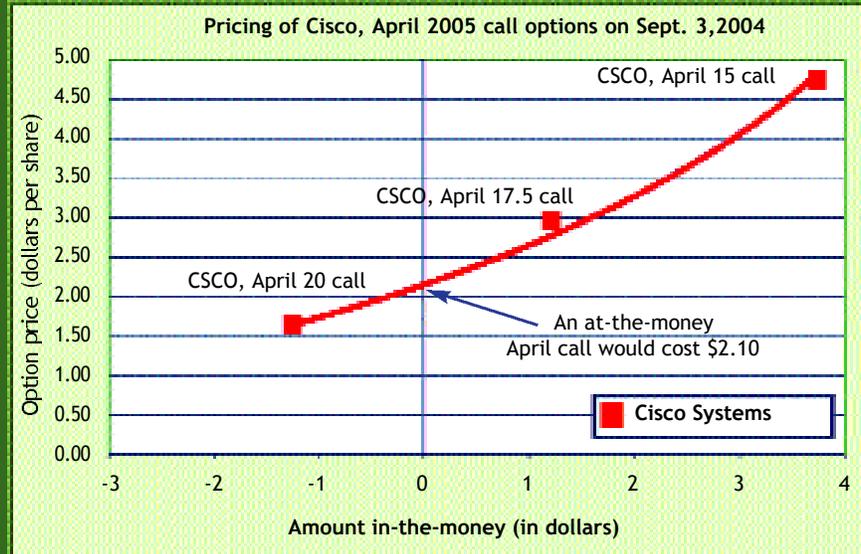
Figure 3 (p. 56) shows a finish-line chart for a Maytag (MYG) April 20 call purchased at \$2.20 on Aug. 27, 2004 when the stock was trading at \$20.20. The call’s 50-percent profit target is \$3.30.

On that day, the April 20 call must be \$1.80 in-the-money (with \$1.50 in time value) to trade at this level, which corresponds to a stock price of \$21.80 (point A = \$20 strike price + \$1.80 intrinsic

*continued on p. 56*

**FIGURE 1 CISCO CALL OPTION CURVE**

*By plotting option prices in terms of how much they are in-the-money (i.e., their intrinsic value), you can estimate an at-the-money option’s price and implied volatility.*



Data source for all figures: MSN Money

**FIGURE 2 CISCO FINISH-LINE CHART**

*This daily Cisco bar chart also shows the April 17.5 call’s finish line, or 50-percent profit target, based on the Sept. 3 purchase as the stock traded at \$18.75. Cisco moved higher in mid-September and approached the finish line before selling off toward the end of the month.*



**FIGURE 3 MAYTAG FINISH-LINE CHART**

*Maytag was quite volatile after we bought an April 2005 call on Aug. 27 when the stock traded at \$20. Over the past several months, the stock hasn't approached the call's 50-percent profit level.*



value). To calculate the April 15, 2005 expiration-day stock price (\$23.30), simply add the call price target to its strike price (point B = \$3.30 + \$20).

Figure 3 shows Maytag has been volatile since Aug. 27, and sold off sharply in mid-September before regain-

ing ground a month later — a \$6 range in 13 weeks. Here, as in the previous example, you'd still be waiting for finish-line strategy to pay off.

estimate average historical volatility on a weekly basis is to calculate a six-week moving average of the weekly ranges. If the current weekly range is below this average, volatility will likely increase in the near-term; the opposite is true if the current weekly range is above the aver-

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ing ground a month later — a \$6 range in 13 weeks. Here, as in the previous example, you'd still be waiting for finish-line strategy to pay off.

On Sept. 3, 2004, the Maytag and Cisco options had the same price for an at-the-money April call (\$2.10). Analysis of weekly volatility suggested that Maytag was likely to show higher near-term volatility, so its calls were better priced than Cisco's. A simple way to

age.

If you compare Figures 2 (p. 56) and 3, it's obvious that Maytag was more volatile in the subsequent three months, and covered a \$6 range vs. Cisco's \$3 range. As of Dec. 3, however, the finish-line strategy had not yet paid off for either example.

Elbit Systems (ESLT) call options also looked attractive on Sept. 3, according to the weekly volatility analysis. Figure 4

shows a finish-line chart for an ESLT April 20 call purchased for \$1.40 on Sept. 7 when the underlying stock traded at \$20.

We sold the call at its 50-percent profit level (\$2.10) on Nov. 4 with the stock at \$21.70. After waiting two months, a move of just \$1.70 in the stock was enough to chalk up a 50-percent profit.

**Balancing volatility and probability**

Finish-line charts highlight the challenge of finding cheap options. Overall, longer-term profits will depend on the percentage of options that cross their finish lines. The lower the finish line — that is, the closer it is to the current stock price — and/or the higher the volatility, the greater the chance the stock will reach the profit target.

Cheaper options offer lower gains. Higher stock volatility means more fuel to drive a stock toward the finish line. Because this approach is structured so most of your winners will be 50-percent profits and most of your losers will be complete losses, it is advisable to keep a 75-percent winning percentage in mind.

In general, if you buy a seven-month at-the-money call and the underlying stock moves up by the same amount as the option's original price within one month, you should be able to sell the option for a 50-percent profit.

For example, Cisco's and Maytag's at-the-money April calls were selling for \$2.10 on Sept. 3, and their finish lines were approximately \$2.10 above their respective stock prices during September. Similarly, the Elbit Systems at-the-money April call cost \$1.40, and its finish line was roughly \$1.40 above the stock price during September.

**Cheap options and market direction**

Buying calls is just one variation of the finish-line strategy. You can easily change the strategy's market bias (i.e., bullish, bearish, or neutral). If you're bearish, buy puts instead of calls. In sideways markets, you can take advantage of potential volatility increase with long straddles, which consist of the simultaneous purchase of call and put

options.

Whichever direction you chose, underpriced options will give an advantage in a long-option position, which means more potential profit if the stock moves in your direction, and less risk if it doesn't. Overall, "bargain" options offer a better chance of gains than fairly priced ones.

However, if you buy options with seven months to expiration and use a strategy with a directional bias (i.e., more long calls than puts or vice versa), you must protect against unfavorable market moves. A sudden drop in the overall market can wipe out an entire portfolio of call options, even if you bought them at underpriced levels. Holding cash, using neutral strategies or other forms of hedging are necessary to avoid ruin.

### Profit target advantages

Why set a fixed profit target at all? Wouldn't it make more sense to monitor each option position and hold it until it is no longer underpriced? While this

ultimately is a matter of preference, an underpriced option (unlike a stock) can't stay underpriced for long.

On expiration day, it will be worth the amount it is in-the-money, or zero. It is not necessary to continually monitor the option's price. If it was underpriced when you bought it, you can expect to benefit from that edge as expiration approaches.

A fixed target also imposes discipline and focus. You don't run the risk of overreacting to the latest news or hiccup in the stock. Instead, once you buy a bargain-priced option, your work is done and you can start searching for other cheap options.

Why set a 50 percent target? Why not 100 percent or 150 percent? It makes sense to set a target that is easily reached within a stock's normal variation. For bargain-priced options, 50 percent is such a target. A well-chosen, underpriced, seven month option will move up 50 percent if the stock moves favorably by about 1.5 times its typical weekly range within 3 months. It is reason-

able to aim for this to happen on 75 percent of your trades.

Finally, when selecting options, always consider the effect of dividends and check for possible mergers or rumors that might explain odd option pricing before trading. 

For information on the author see p. 10.

## Related reading

See "Variance and standard deviation" on p. 83 of this issue.

"Bargain hunting for options," by George Hoekstra. *Active Trader*, January 2005. Using statistical and implied volatility to find cheap call options.

"Getting started in options," *Active Trader*, April 2001. A beginner's guide to trading options.

"Choosing the best option," *Active Trader*, July 2001. One trader's guidelines for finding the option that best suits the needs of a particular trade.

"Long straddles: The importance of buying time," *Active Trader*, November 2004. How to construct higher-probability long straddles by finding options with the best volatility characteristics and tapping into LEAPS.

"Putting volatility to work," *Active Trader*, April 2001. A guide to different types of volatility, and how to improve your trading with practical volatility-based analysis and trading techniques.

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FIGURE 4 CROSSING THE FINISH LINE

This figure shows a successful options trade: After we bought an at-the-money ESLT April 20 on Sept. 7, we sold it two months later when it hit the 50-percent target.

