



Focusing on volatility

To hone in on options with the most favorable odds, structure a search that focuses on a certain stock price, exercise price, and expiration date, and then use a simple analysis approach to identify options that are the most underpriced.

BY GEORGE HOEKSTRA

Implied volatility is typically defined as the estimate of future volatility as reflected in the price of an option. The more volatile traders expect a particular market to be, the more option writers will demand in premium for the risk they assume by selling its options. One approach to options trading is to search for instruments you expect to be more volatile than what their option

prices are implying.

When you find such a stock or futures contract, you buy options on it with the expectation that they will give you an edge — that is, the stock will “give you more price action than you deserve,” in terms of what you paid for the options.

The search for these option bargains can seem overwhelming. Options are listed on over 3,000 securities. In

many cases there are hundreds of different options for each security — puts and calls, different strike prices and expirations, etc. Where do you start? To make the search manageable, let’s narrow the field as follows:

Underlying stock price: We will focus on stocks that are currently priced in a narrow range — say \$30, plus or minus \$2. Therefore, any stock that has listed options and was priced between \$28 and \$32 on June 6, 2005, qualifies.

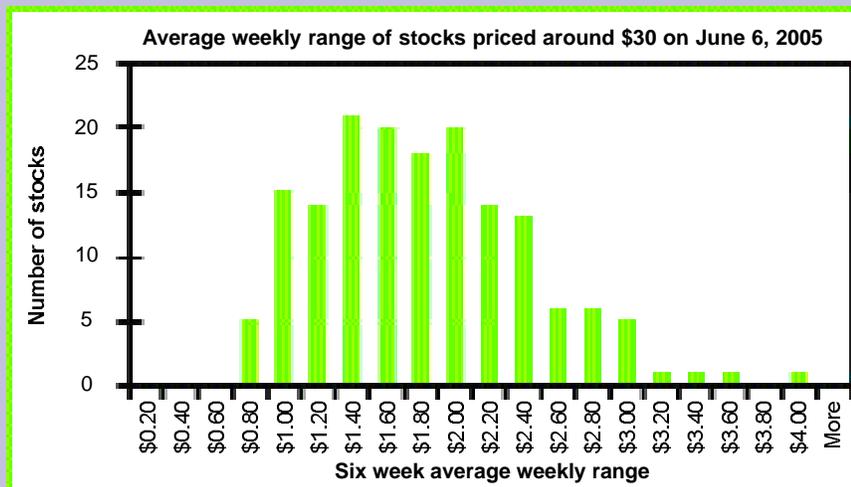
Puts or calls: call options only.

Exercise price: We’ll review only those options with exercise prices of \$30 per share.

Expiration date: We’ll consider only those options expiring on Jan. 20, 2006.

FIGURE 1 — RECENT PRICE ACTION: WEEKLY RANGES

Higher implied volatility is reflected in higher option premiums. This figure shows 161 stocks sorted according to their recent volatility, which is represented by a six-week average of the stocks’ weekly price ranges.



These simple criteria narrow the field from hundreds of thousands of options to just 161. They are all January 30 call options, on 161 different stocks trading between \$28 and \$32 per share.

Figure 1 shows these 161 stocks sorted according to their recent volatility, using data from June 6, 2005. In this case, volatility is represented by a six-week average of the stocks' weekly price ranges. To calculate this, you simply take the difference between the high and low stock prices for each week, and average those values over the past six weeks.

The height of each bar shows the number of stocks with that volatility. For example, the bar at \$1.60 weekly range shows there are 20 stocks that have had ranges of \$1.60 per week, on average, over the past six weeks. The least volatile stocks have varied by an average of only \$0.80 per week, and the most volatile stock has varied by an average of \$4.00 per week.

As mentioned, implied volatility is a measure of how expensive options are. Higher implied volatility is reflected in higher option premiums. In addition to the implied volatility data available in many option analysis software programs, you can find implied volatilities for listed stocks on several Web sites, including ivolatility.com and Optionetics.com, or on many brokers' Web sites. To get a feeling for how expensive our options are relative to the price volatility of their underlying stocks, Figure 2 shows the implied volatilities vs. the six-week average weekly range for each stock.

The chart compares the "priciness" of the options in terms of recent stock price action: How expensive are the options (y-axis), and how much has that stock been varying over the last six weeks (x-axis)? The upward trend of the data indicates stocks with more expensive options have generally been more volatile in the past six weeks, which makes sense. More volatile stocks *should* have more expensive options.

The goal of this analysis is to find options that are unusually cheap relative to price action.

FIGURE 2 — HOW "PRICEY" ARE THESE OPTIONS?

Comparing the implied volatilities to the six-week average weekly ranges for each of the stock in Figure 1 provides an indication of relative value: Stocks in the upper left have expensive options but have not had much price action; stocks in the lower right have cheaper options but have experienced more price movement.

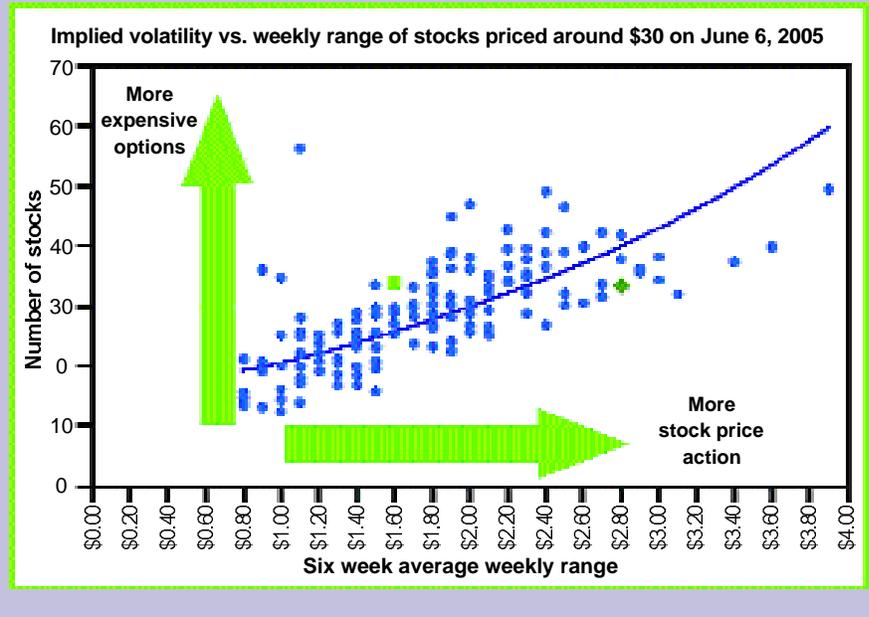


TABLE 1 — COMPARABLE OPTIONS

The RIO and TBH options are priced essentially the same: With both stocks trading around \$30, the RIO January 30 call option costs \$3.50, while the TBH call costs \$3.70.

	RIO	TBH
Stock price	\$29.93	\$30.57
Purchase price of call options		
January 25 call	\$6.40	\$7.10
January 27.5 call		\$5.10
January 30 call	\$3.50	\$3.70
January 32.5 call		\$2.05
January 55 call	\$1.70	n/a

Zooming in on value

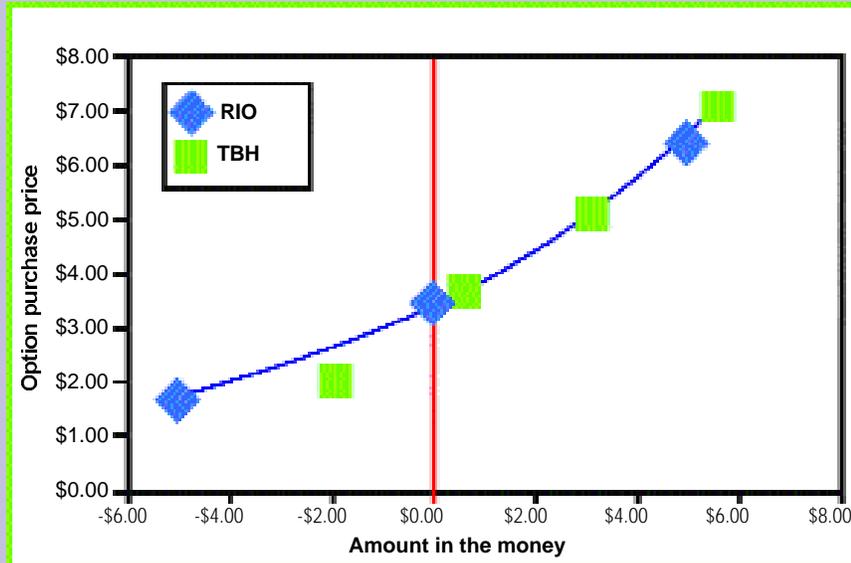
Stocks toward the upper left of Figure 2 have expensive options but have not delivered much price action over the past six weeks. Stocks toward the lower right have inexpensive options but have experienced lot of price action during the past six weeks. For example, the stock represented by a green square has an implied volatility of 35 per-

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FIGURE 3 — PRICING OF JANUARY CALL OPTIONS

There is a difference in the stocks' prices (\$30.57 vs. \$29.93), so this must be accounted for before we can draw any further conclusions about the option prices. Charting the option prices vs. the amount each option is in the money is a good way to adjust for the difference in stock prices shown in Table 1. Both stocks fall on the same curve, which means the options are comparably valued.



cent and has varied by an average of \$1.60 per week over the past six weeks. The stock represented by a green diamond has an implied volatility of 34 percent and has varied an average of \$2.80 per week.

Let's look more closely at these two stocks and their January 2006 options. The green diamond stock is Companhia Vale Do Rio Doce (RIO) and the green square stock is the Tele Brasil-Telebras HOLDR (TBH). Table 1 shows the options essentially are priced the same: With both stocks trading near \$30, the RIO January 30 call option costs \$3.50 and the TBH call costs \$3.70.

There is a difference in the stocks' prices (\$30.57 vs. \$29.93), so this must be accounted for before we can draw any further conclusions about the option prices. To adjust for the difference, chart the option prices vs. the amount each option is in the money, as shown in Figure 3.

Both stocks fall on the same curve, which confirms the options are comparably valued. The point where the curve crosses the Y-axis is the implied price of an at-the-money January 30 call. In this case, it is \$3.40. We can use this as a tangible measure of how expensive the January options are. In the near term, an at-the-money January 30 call option on either stock will cost \$3.40.

By sifting and charting the data this way, we have identified two options with the same exercise price (\$30), the same expiration date (Jan. 17, 2006), the same stock price (\$30), and the same option price (\$3.40 for an at-the-money call). Given their similarities, the market, in theory, is saying these stocks should have the same future volatility. However, Figure 2 showed the stocks' recent volatility has been quite different.

It's time to look more closely at volatility. Figures 4 and 5 show the past six months of daily price data for these stocks. Eyeballing the charts (which are plotted on identical price scales) suggests RIO has been more volatile than TBH. Analysis of the stocks' respective weekly ranges confirms this (Figures 6 and 7).

The six-week average weekly range is \$2.80

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for RIO and \$1.60 for TBH (the right-most blue dots on each chart). The charts also reveal the historical volatility patterns over the past six months. RIO's weekly range has averaged between \$2.50 and \$3.00 throughout 2005, and in about half of the weeks the stock's range was 3 points or larger. Thus, the current average of \$2.80 doesn't look like a fluke.

By contrast, TBH's weekly range has consistently averaged less than \$2.00 per week, and there are only a few individual weeks when it exceeded \$2.00. From this data, there is no reason to expect this stock to be as volatile as RIO.

In light of this information, RIO's options look like a bargain. Accordingly, on June 15, RIO January 25 call options were purchased for \$4.60, with the stock trading at \$27.50. This option will be held until it reaches a 50 percent profit (\$6.90) or until it expires on Jan. 17, whichever comes first (for more information about taking profits, see "Related reading"). An up move of \$3 — or approximately one week's average range, will be enough to produce a 50-percent profit. The option was sold for \$6.90 on June 17 with the stock at \$30.90.

Analyzing volatility: Beware of anomalies

The analysis shown here is similar comparing an option's implied volatility to the historical (statistical) volatility of its stock. But this analysis has a different twist. The stocks are screened in a way that allows an initial visual comparison of historical price action for stocks whose options are priced identically. This provides a more tangible element to the analysis.

There are certain conditions you must take into consideration when

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FIGURE 4 — PRICE VOLATILITY — RIO

RIO has fluctuated in a roughly 12-point range over the past six months.

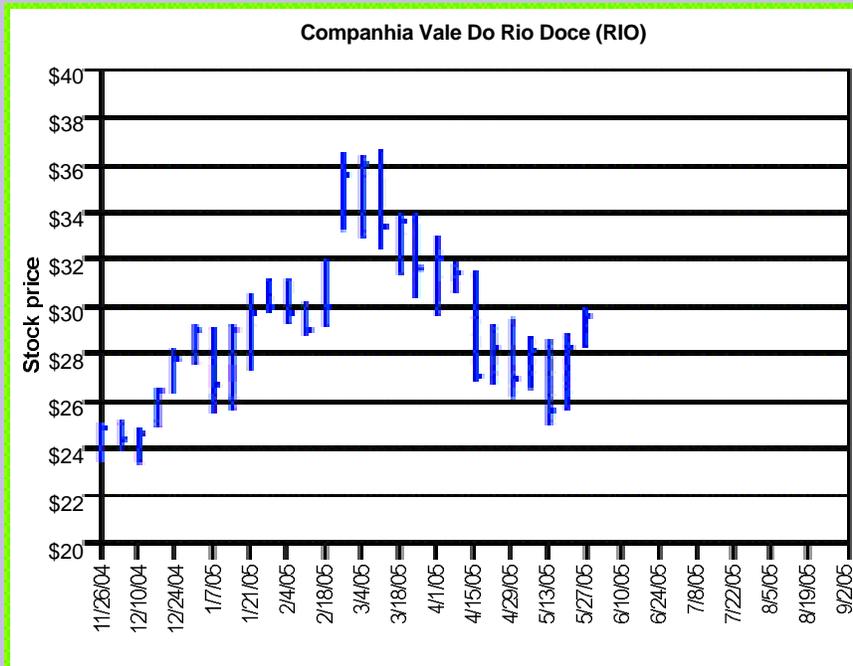
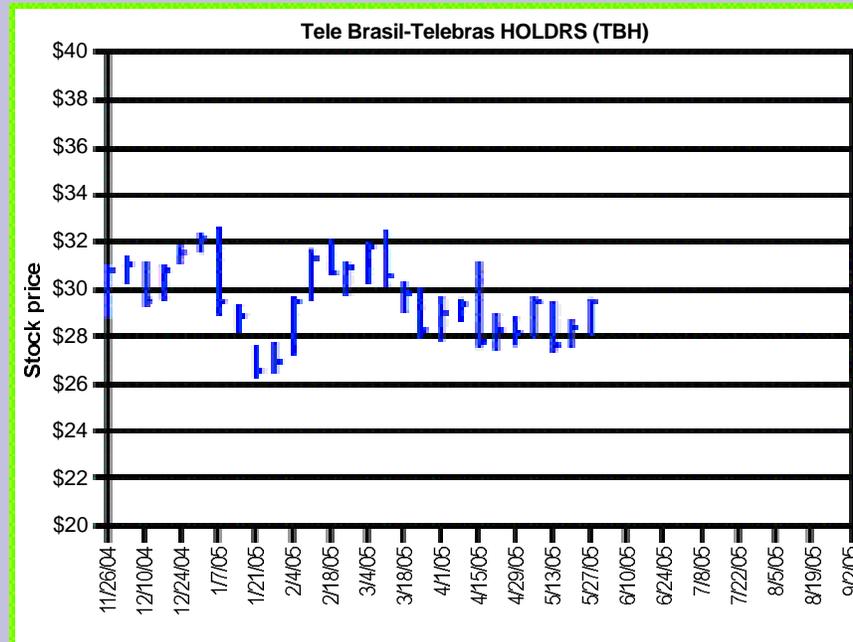


FIGURE 5 — PRICE VOLATILITY — TBH

TBH has fluctuated in a roughly 6-point range over the past six months — much less than RIO.





performing this kind of analysis. In some cases, you will find price spikes dominate recent volatility, such as when a stock collapses on an earnings disappointment, or shoots up on a false rumor. In these cases, you must consider the longer-term picture of stock volatility to determine if such activity is likely to happen during the life of your option. If the recent price behavior has also been consistent over, say, the past six months, it is more likely that you will enjoy that kind of action as an owner of an option. If not, the option premium should not contain much credit for this kind of price movement. You should not rely on one summary statistic, such as historical volatility (standard deviation), to provide the entire story of a stock's volatility.

You can perform this analysis for stocks in other price ranges, or for options with different expiration dates. Similarly, bearish investors can search for exceptionally cheap puts. For a non-direction volatility trade (i.e., you don't care if the underlying market will go up or down), you can buy **straddles** consisting of underpriced calls and puts. In all of these cases, the key question is, how much stock price action am I likely to get for my option dollar? The analysis can also identify overpriced options to sell, either outright or in spread trades.

When searching for option bargains, your attention might be drawn to thinly traded options with wide bid-ask spreads. For these options, you should use the ask price for buys or the bid price for sells (or your best estimate of the price that would actually result in a filled order) when performing your analysis. Also, you should always check for dividends that might affect your options, and whether there are takeovers, pending mergers, or hot rumors affecting the price action of your stock or option.

In any option strategy, you shouldn't risk more than a small percentage of your bankroll in any one position. Even

the most carefully chosen trade can go wrong, and one bad event in the market can wipe out an entire portfolio overnight. It's best to spread your risk across different stocks, and over time. ☹

For information on the author see p. 6.
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FIGURE 6 — WEEKLY RANGE ANALYSIS — RIO

RIO's six-week average weekly range is \$2.80, and in about half of the weeks in this analysis, the stock's range was 3 points or more.

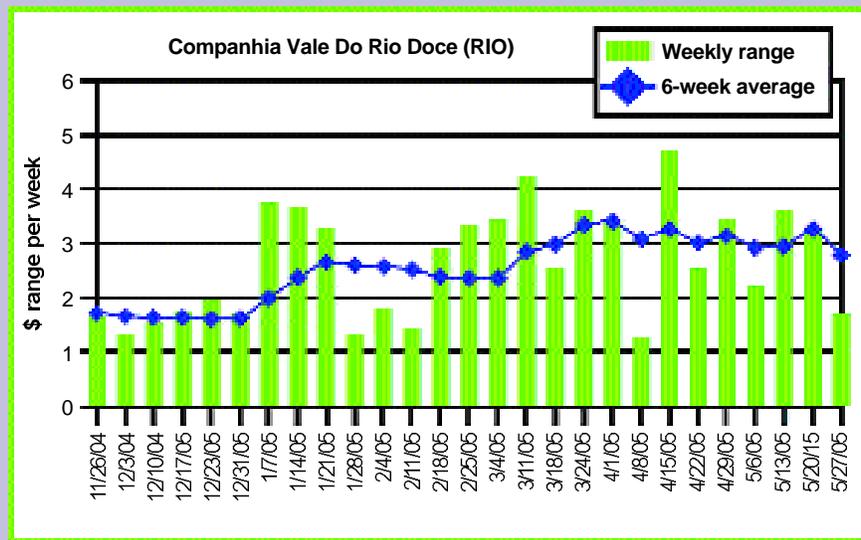


FIGURE 7 — WEEKLY RANGE ANALYSIS — RIO

In contrast to RIO (see Figure 6), TBH's weekly range has consistently averaged less than \$2 per week. This data does not suggest TBH will have as much volatility as RIO in the near future. In light of this information, RIO's options look like a bargain.

