

Digging into volatility

One options trading strategy is to search for stocks you expect to be more volatile than is implied by the price of their options. Then you buy options on that stock with the expectation that higher volatility will increase your likelihood of a profitable trade.

With this strategy, your analysis focuses on understanding the volatility of stocks. This means studying the sizes, rather than the directions, of price movements.

As an example, the following analysis focuses on the volatility of five stocks, all priced around \$30/share. These five stocks have something else in common - at the time of this analysis, an at-the-money call option could be purchased on any of them for the same price.

Comparing Option Prices

Table 1 shows the pricing of September 2008 call options on the five stocks, as of February 18, 2008:

Table 1. Pricing of September 2008 call options

	<i>MF Global (mf)</i>	<i>Progress Software (prgs)</i>	<i>Nabors Industries (nbr)</i>	<i>Safeway Inc (swy)</i>	<i>Kensy Nash (knsy)</i>
<i>stock price</i>	\$28.41	\$30.40	\$30.70	\$31.99	\$27.30
<i>Purchase price of call options</i>					
<i>Sep 25 call</i>	\$5.80	\$7.00	\$7.60	\$8.30	\$4.90
<i>Sep 27.5 call</i>			\$5.90		
<i>Sep 30 call</i>	\$3.20	\$3.80	\$4.20	\$4.70	\$2.60
<i>Sep 32.5 call</i>			\$3.10		
<i>Sep 35 call</i>	\$1.50	\$1.80	\$2.10		\$1.20
<i>Sep 37.5 call</i>			\$1.40		

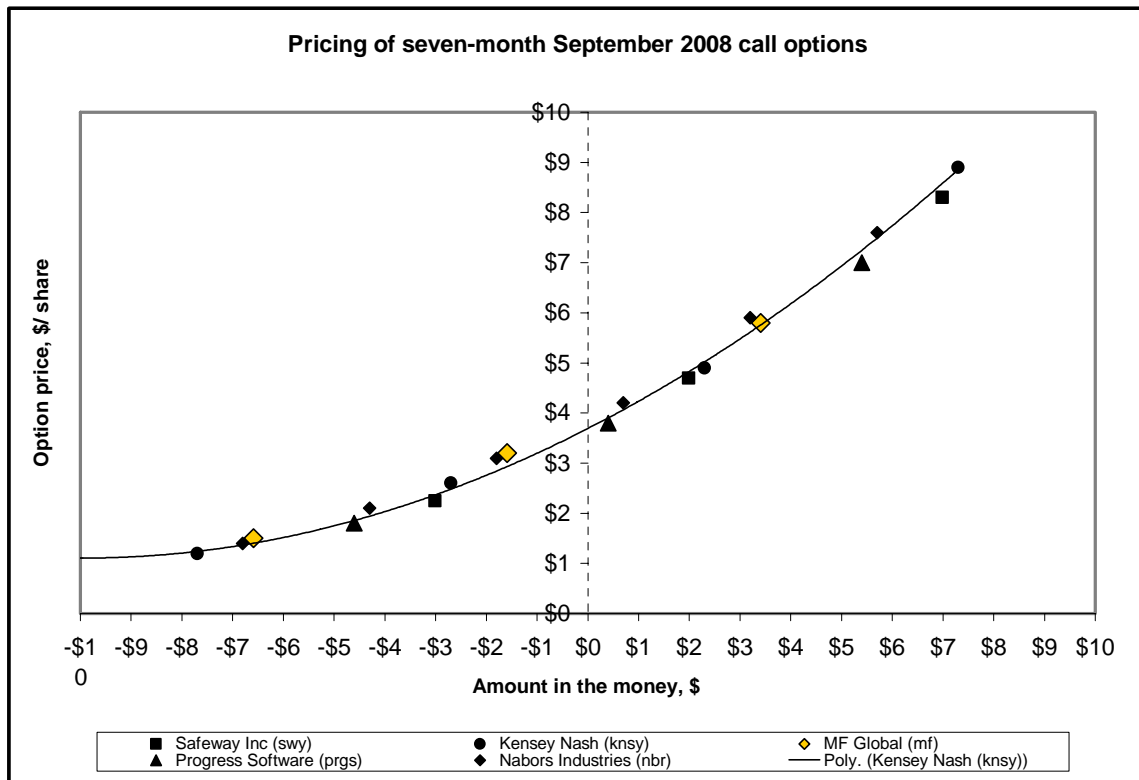
To see that the options on these stocks are priced equally, it is necessary to look at the data in a slightly different way. The stock prices are not all the same; therefore we cannot just compare the option prices directly, it is necessary to adjust for the different amounts they are in-the-money. A convenient way to do this is to chart the data like in Figure 1. The price of each option is plotted on the y-axis, against the amount it is in the money, on the x-axis.

For example, the MF Global September 25 call option is priced at \$5.80, and is \$3.41 in-the-money (\$28.41-\$25.00). So this option is represented in Figure 1 by a gold diamond at an x-value of \$3.41 and a y-value of \$5.80. Similarly, the MF September 30 call is

\$1.80 out of the money and is charted as a gold diamond at an X value of $-\$1.80$ and a y value of $\$3.20$.

Figure 1 shows that the data fall along a single curve. This means that, for the same amount in-the-money, the options on all five stocks are priced equally.

Figure 1: Option price chart for September 2008 call options



The point where this curve crosses the y-axis is the implied price of an at-the-money September call option. In this case it is $\$3.80$. If any of these five stocks were priced at exactly $\$30$ / share, you could buy a 7-month $\$30$ call on it for $\$3.80$. This is a good, tangible indicator of the pricing of the options.

Comparison shopping

In theory, options that have equally-priced options should have equal volatilities. Your analysis now moves to studying and comparing the volatilities of the five stocks. You will ask yourself, if I buy an option on this stock, how much stock price action am I likely to get for my $\$3.80$ premium? Remember that, when you are long an option, higher stock volatility will work in your favor. So, for equally priced options, you want to search for as much volatility as possible.

Figures 2 through 6 show historical price data for the five stocks. The time period is the most recent seven months, mid-July 2007 to mid-February 2008. The ranges on the scales are the same, so that we can visually compare the data for the different stocks.

Figure 2: Stock price chart for MF Global

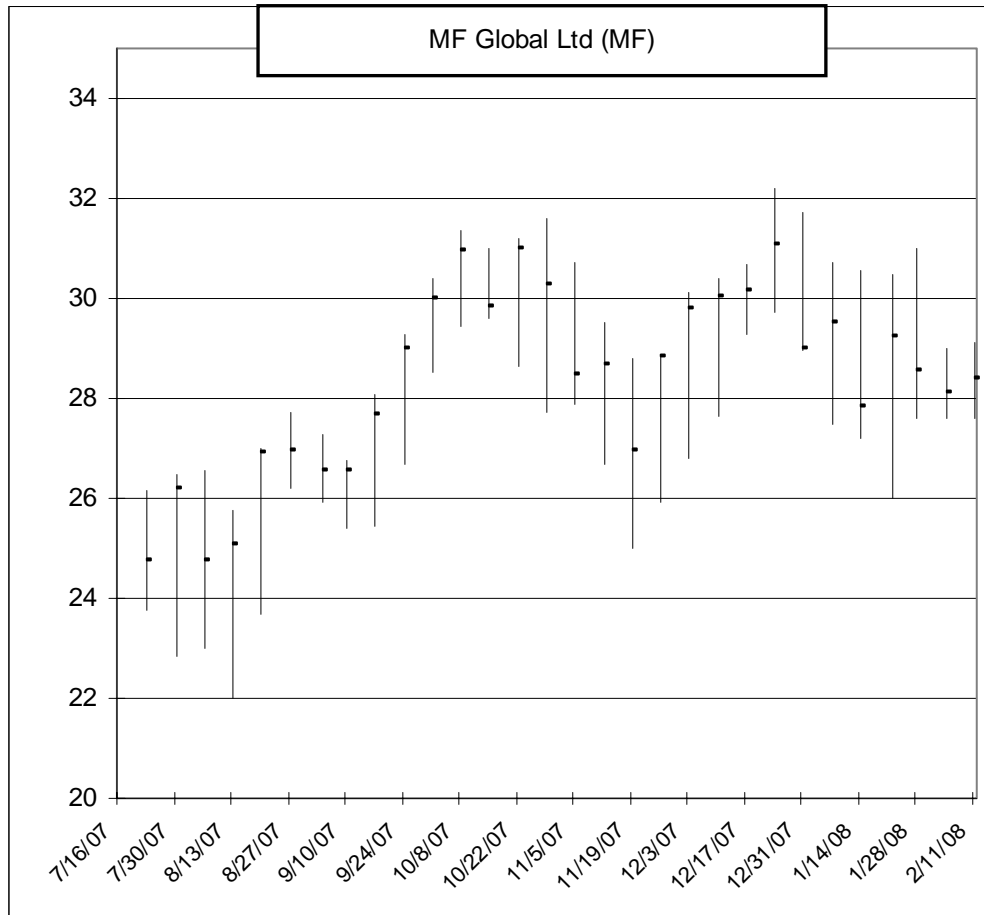


Figure 3: Stock price chart for Progress Software Corp.

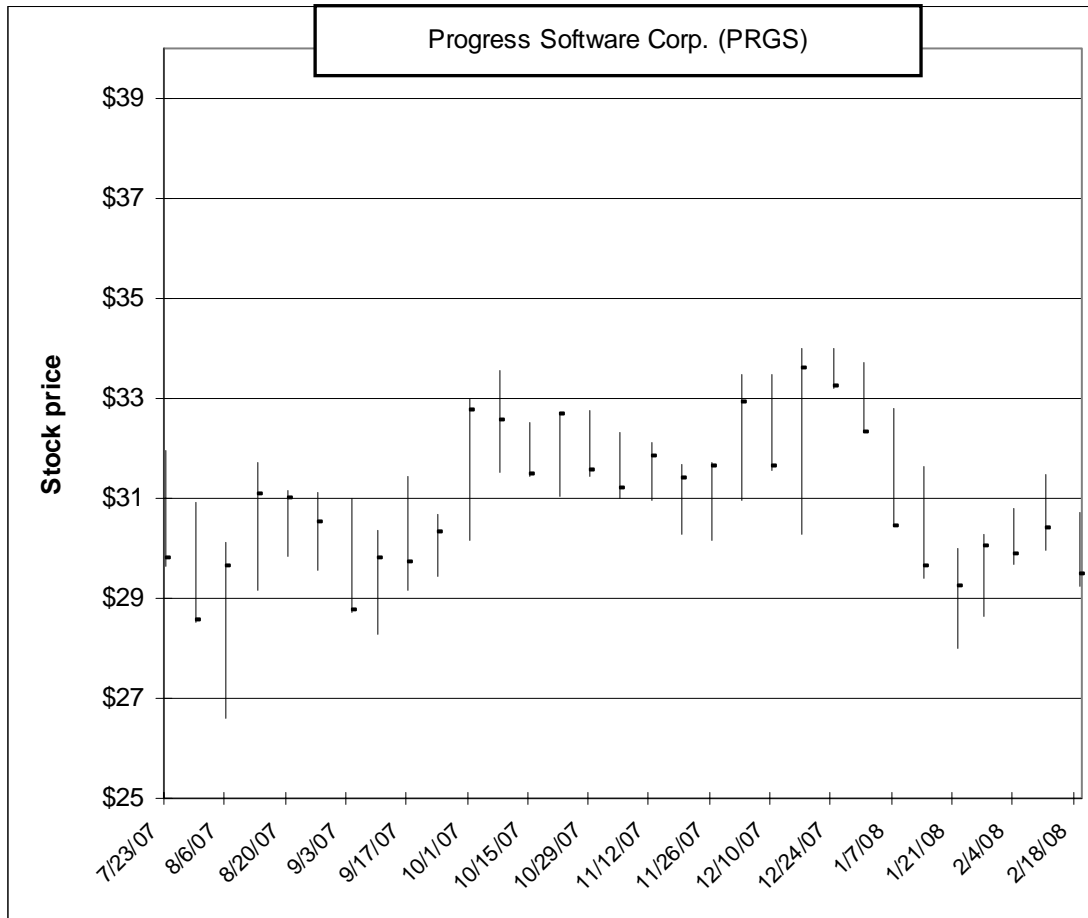


Figure 4. Stock price chart for Nabors Industries Ltd.

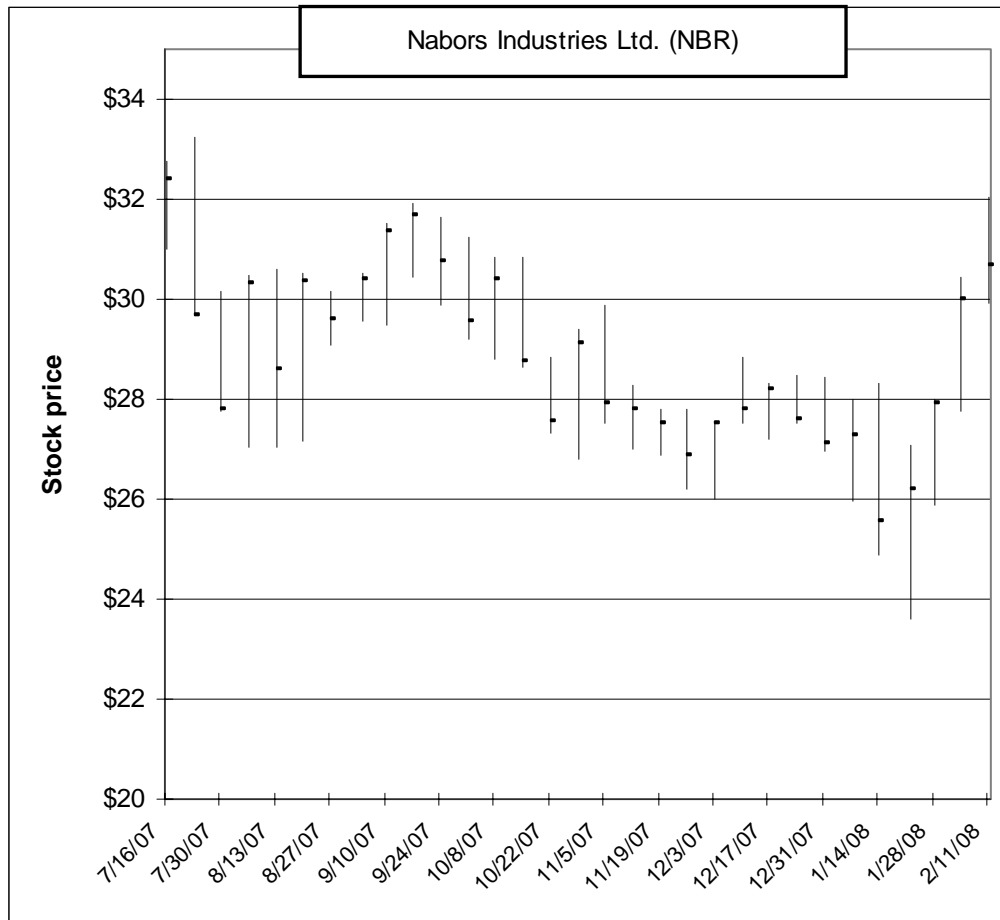


Figure 5. Stock price chart for Safeway Inc.

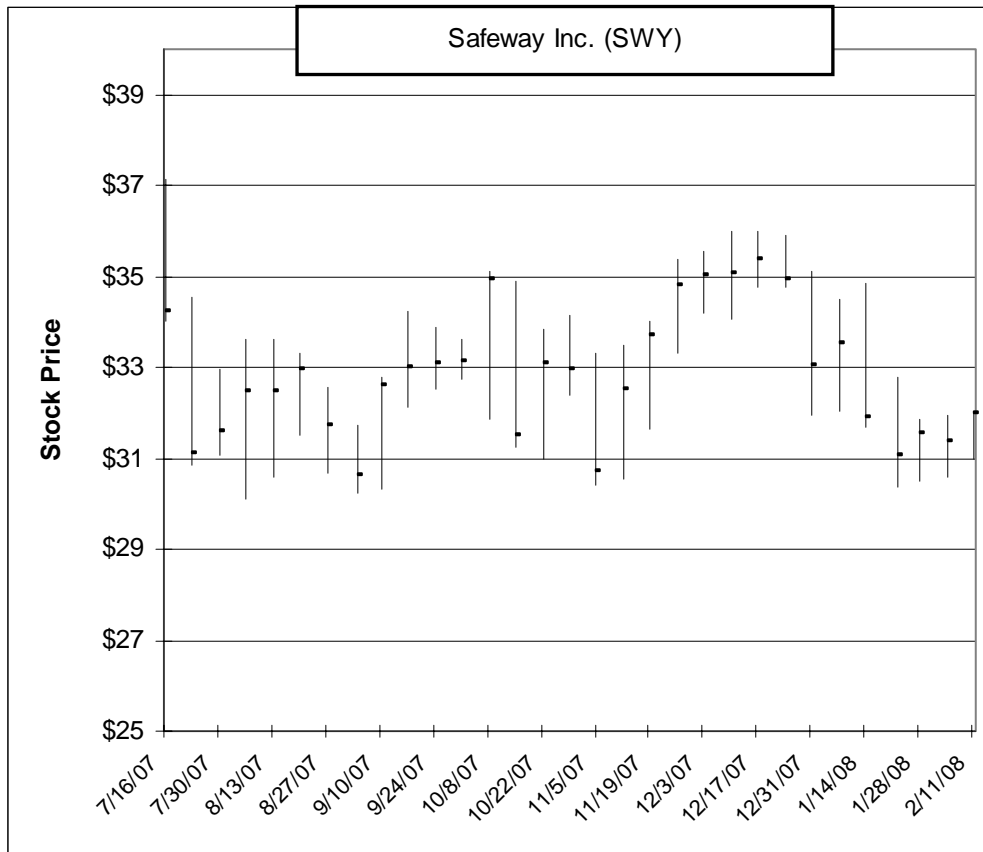
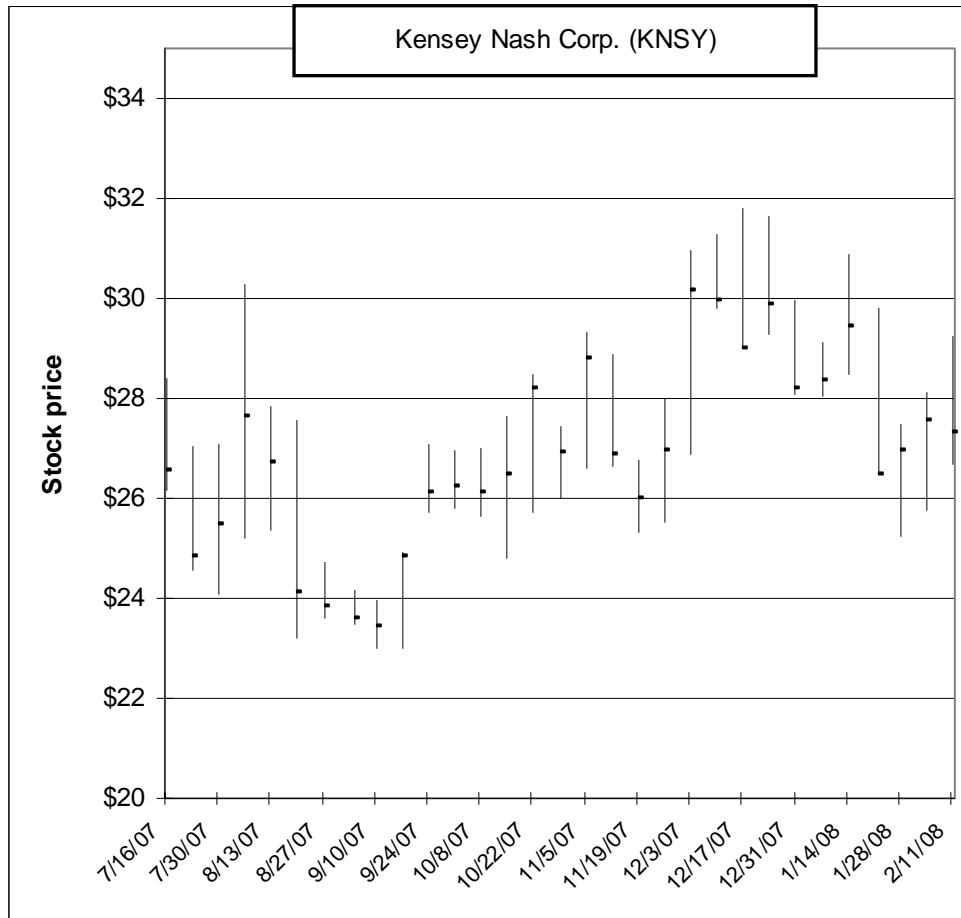


Figure 6. Stock price chart for Kensey Nash Corp.



Which of the five stocks is more volatile? A visual comparison does not show obvious differences that jump out saying whether any of them was more or less volatile than the others during the last seven months. It is not surprising then that the options are priced about the same.

Simple gauges of volatility

How can we quantify volatility? One very simple gauge is the *overall trading range* during this seven month time window. What is the difference between the highest high and the lowest low over the seven month interval from July 2007 to February 2008? If you look at the charts, you can “eyeball” this number for each stock. For example, Figure 6 shows the 7-month trading range of Kensey Nash was from a low of about \$23 to a high of \$32, or about \$9 total range for the time period. The exact number is \$8.80. Table 2 shows this measure of volatility for all five stocks.

Table 2. 7-month trading range of stocks, July 2007 – February 2008

	<i>MF Global (mf)</i>	<i>Progress Software (prgs)</i>	<i>Nabors Industries (nbr)</i>	<i>Safeway Inc (swy)</i>	<i>Kensey Nash (knsy)</i>
<i>7-month trading range</i>	\$10.20	\$7.40	\$9.60	\$7.00	\$8.80

The overall trading ranges are pretty close to each other, considering that many stocks move \$7 to \$10 dollars in just *one week*! If we were to rank the five stocks by this measure, MF Global would be ranked most volatile.

Another measure of volatility is the *average weekly change*, that is, how much did the stock move from one Friday's close to the next Friday's close, on average, during this time? This number is not easily eyeballed from the charts, but is easily calculated in a spreadsheet (you only need a table of high-low-close data and some basic spreadsheet skills). The average weekly change for these stocks were:

Table 3: Average weekly change of stocks, July 2007 – February 2008

	<i>MF Global (mf)</i>	<i>Progress Software (prgs)</i>	<i>Nabors Industries (nbr)</i>	<i>Safeway Inc (swy)</i>	<i>Kensey Nash (knsy)</i>
<i>Average weekly change</i>	\$0.95	\$0.89	\$1.03	\$0.94	\$1.08

On average, these stocks all move by about \$1 per week. This gauge of volatility is again showing the stocks are more alike than different in their volatility. If you were forced to rank them on this basis, Kensey Nash would win as "most volatile".

Digging deeper

To look more closely at volatility, you can make charts like Figures 7 and 8. They show the *weekly ranges* of the stock price for each week in this 7-month time frame. The height of each bar represents the difference between the high and low stock prices for that particular week. The blue dots, and the lines connecting them, represent the moving average of the weekly range for the most recent 6 week period. Charts like these are also easily made from high-low-close data, if you learn basic spreadsheet skills. Studying them provides a way to look at volatility through a different lens than is typically used when options are priced.

Figure 7. Weekly range chart for MF Global Ltd.

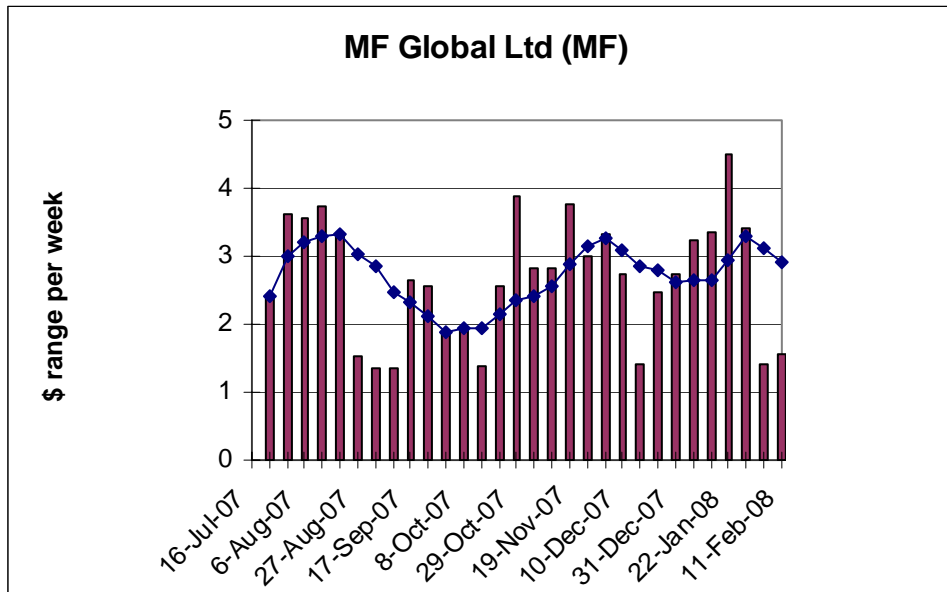
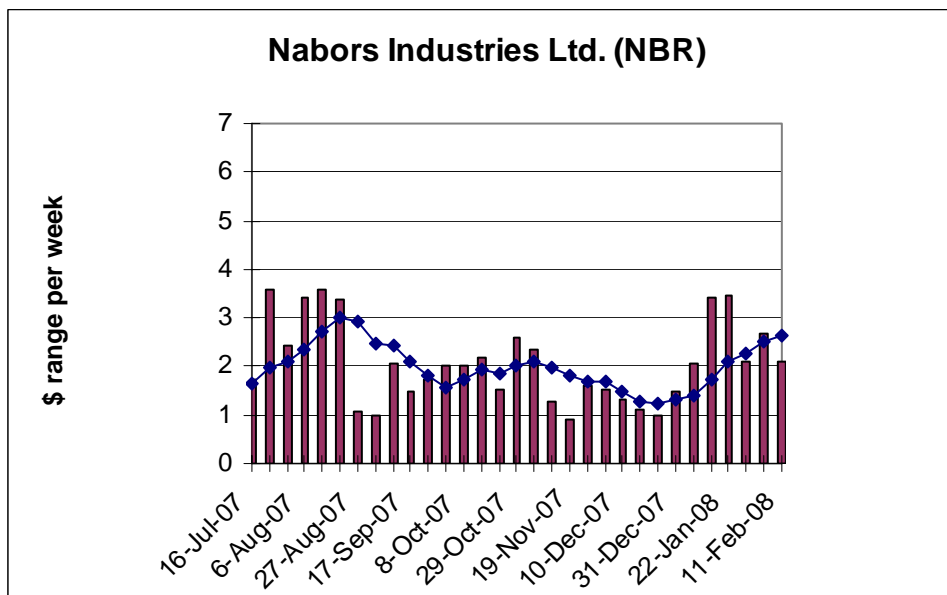


Figure 8. Weekly range chart for Nabors Industries Ltd.



These charts reveal some striking differences in the detail of the volatility of MF Global and Nabors Industries. MF Global had consistently higher weekly ranges across the whole time period. The heights of the bars for MF Global show a range of \$3 or more in nearly half of the weeks, while Nabors was struggling to span a \$2 range per week. During December, Nabors was nearly dead, fluctuating by only about \$1 between high to low most weeks. The blue line on the charts, which is a smoothed running 6-week

average range, is usually above \$2.50 per week for MF Global, versus \$2.00 or less for Nabors Industries.

Notice that this difference in weekly range is not reflected in the weekly change data in Table 3. In fact, according to the weekly change data, Nabors was slightly *more* volatile than MF.

There are many other stocks with 7-month at-the-money options priced around \$3.80. Most of them span average weekly ranges around \$2.20 per week. MF Global's average of \$3.00 per week stands out as high among them. A range of \$3.00 per week is typical of stocks whose 7-month options priced more like \$5.00 per share instead of \$3.80. From this comparative study of weekly ranges, MF Global looks like a possible bargain for an options strategy that can capitalize on high weekly stock volatility.

Closing the deal

This is a good time to dig even deeper into volatility. What was being said about MF Global during the last 7 months? What happened during the week of January 22 when the stock varied over a \$4.50 range in one week? Were there unusual events or announcements that week? If so, are they of a kind that are likely to occur between now and September (for example, quarterly earnings announcements)? How actively traded is the stock, and is there any pattern to when large price moves occurred?

In short, can you find anything unusual that has been causing this stock to move recently?

You should also check through news articles on your broker's website to see whether there were pending mergers, takeovers, or hot rumors that might have affected the stock, or might do so in the coming months. You should also check dividends. What is the dividend rate and when are dividends paid? If large dividends are due to be paid during the life of your option, that will lower your option's value. You should adjust for this, or else reject the option and search for another bargain.

In this case, a check of Yahoo news and the company website showed some significant recent news on MF Global; in fact it was just newly listed on the NYSE in July as an independent, public company. The stock price fell sharply below the initial offer price on its first day of trading. But this news did not alter the assessment that MF Global's options were a good deal for a strategy based on intra-week volatility over the next seven months. Accordingly its September call options were purchased on February 19, 2007.

You can do this kind of analysis for stocks in other price ranges, and for options with different expiration dates. Bearish investors can use this approach to search for cheap puts. For non-directional volatility trades (i.e. you don't care if the underlying market will go up or down), you can search for straddles consisting of underpriced calls and puts. In all cases, the idea is to focus on analyzing the *volatility*, and the key question is, how much stock price action are you likely to get for your option dollar?

To learn more about using this approach to uncover opportunities in options, see previous Active Trader articles, especially “Focusing on Volatility”, “Bargain Hunting for Options”, “Getting a Handle on Volatility”, and the article compilation “Options Basics Collection, Volume 1”, available from the Active Trader website.

Can you really gain an edge?

Can comparative analysis of simple volatility gauges really provide an edge in the options market?

In most active securities markets, a large number of informed traders bring their knowledge and analysis into the market. By competing actively among each other, their collective knowledge is quickly built into the price. Short of having inside information on what’s coming next for a company, it is hard for any individual to do beat the market, or to predict what the price should be.

An option is different in that its value is very sensitive to an estimate of the *volatility* of its underlying security. Therefore options provide a way to profit from insights on price volatility, even if you can’t forecast the price itself (notice that all the above analysis focuses on the *sizes*, not the *directions*, of price movements)

Options are listed on over 3000 different securities. In many cases there are hundreds of options for one security. There are literally millions of potential opportunities. Most of these options are thinly traded. When there are few or no active traders for a stock’s options, price quotes are often based on surface-level summary statistics that do not reflect the full depth of detail on price changes. If you dig deep, you can gain insights that are not reflected in price quotes.

This means real opportunity for the options investor who digs below the surface of volatility.

Control your risks!

When searching for option bargains, your attention will be drawn to thinly traded options with wide bid-ask spreads. For these options, you should base your analysis on the ask price for buys and the bid price for sells (or your best estimate of the price that would actually result in a filled order). Often, if you place a limit order between the bid and the ask, it will get filled if you are patient.

Your attention will also be drawn to unfamiliar stocks. Before you buy an option, you should always check for basic information on the company, including its dividend, pending mergers and acquisitions, and news that might be affecting the pricing of the stock or its options.

In any option strategy, you shouldn’t risk more than a small percentage of your bankroll in any one position. You can never know for sure if you are missing something. Even

the most carefully chosen trade can wrong, and one bad event in the market can wipe out an entire options portfolio. It is smart to spread your option investments over a mix of different underlying securities, and over a range of expiration dates.