

Tony Caine and Stan Ivanov: Volatility traders

A professional options seller explains why he revised his approach after a past drawdown, and his risk manager discusses the mechanics of VIX options.

BY DAVID BUKEY



Tony Caine has learned how to make money in volatile markets. As fund manager of LJM Partners, Caine gained 21.35 percent in 2007, which ranked him among the top 10 Commodity Trading Advisors (CTAs) who managed at least \$100 million in assets last year.

Caine's education wasn't cheap, though. In July 2002, LJM Partners suf-

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fered a 46.17-percent drawdown after he bet against a sharp drop in the S&P 500 futures (SP) by selling uncovered puts. Caine recovered quickly, and his fund lost just 4.23 percent in 2002. But the experience gave him a new respect for risk and prompted him to overhaul LJM's option-selling strategy.

The fund's basic structure didn't change — Caine still sells option strangles (out-of-the-money calls and puts) on S&P 500 futures — but his risk-management techniques grew more sophisticated as he realized selling puts is much different than selling calls. LJM Partners has gained 514 percent (with smaller drawdowns) after strengthening its risk controls five years ago.

In April 2007, LJM Partners hired Stan Ivanov, 38, as chief risk officer. Ivanov earned a Ph.D. in chemical physics from Tulane University in 1997 and had been first vice president of quantitative risk management at The Options Clearing Corporation (OCC). At LJM, Ivanov launched a new long-volatility program designed to protect clients' assets and to

exploit recent spikes in the CBOE Volatility index (VIX).

Here, Caine talks about his 2002 drawdown and Ivanov explains why implied volatility (IV) is so important. Also, Ivanov and Managing Director J. Scott Sykora discuss how to trade VIX options.

AT: You suffered a steep drawdown when the S&P 500 fell sharply in July 2002. What happened?

TC: I violated all of my disciplines. The S&P 500 dropped to 900 from its high of 1,500 in 2000, and I moved all my [short] positions to strikes of 800 and lower. I dug my heels in when the market was above 900, thinking there was no way it was going to fall to 800 (Figure 1). But the market reached approximately 775 intraday on July 25.

I held on to short positions far too close to the money and far too long during volatile periods. In retrospect, I should have just cut my losses earlier and got out of the market. Instead, I tried to

hold on to the premium and hope for a quick bounce.

AT: Did your short puts move into the money?

TC: No, but it was close. I got out before the market reached 800.

AT: Did your trading approach change at that point?

TC: Yes, dramatically. I adjust my positions much more rapidly now. I stick to my discipline of staying balanced [directionally]. And if volatility picks up, I lighten my positions.

AT: If the VIX rises to a certain level, will you adjust positions?

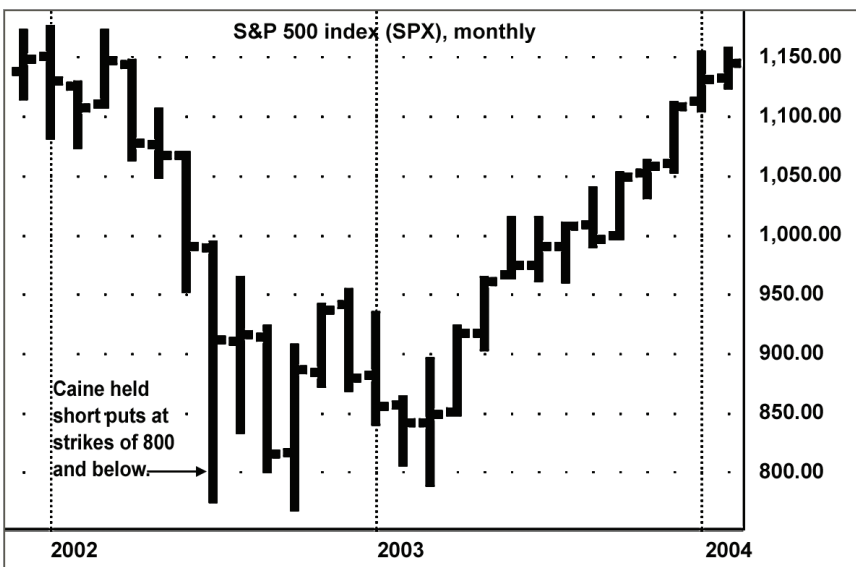
TC: It's not so much the VIX's aggregate level, but the rate at which the VIX is moving. Last year, the VIX was in the low to mid-teens before climbing into the low to mid-30s pretty quickly. The VIX is in the 20s now (Dec. 6), but if it rose back up to 30, then that move wouldn't be as big (in percentage terms).

AT: Do you have any advice for individual traders who sell option strangles on the S&P 500?

TC: It's a tough strategy to trade with few dollars, because a lot of the ratio adjustments I make are small. If I add or remove premium, I look at LJM's total positions, and then I might adjust one position per million dollars of total equity in an account.

LJM's minimum account size is \$500,000, and I'm considering raising

FIGURE 1: S&P 500, 2002-2003



In July 2002, Caine rolled his short puts to strikes of 800 and below, but his fund still took heavy losses. However, he strengthened his risk controls and his fund hit new equity highs within a year.

Source: eSignal

that to \$1 million. It's not because we have an ego and only want large

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accounts, but smaller accounts carry more risk and are more difficult to trade. So I don't recommend [trading short strangles] unless you have a lot of capital with a long-term perspective — three to five years.

AT: Have you developed any software tools to analyze the options markets?

TC: No. Years ago, I purchased Excel models, and I analyzed the markets until the sun came down before realizing my gut instinct was correct, anyway.

However, as we mature as an organization gut instinct doesn't count. That's why LJM hired Stan Ivanov as chief risk officer earlier this year. Stan developed various risk models [at the OCC]. We plan to integrate Stan's risk models and execute trades more efficiently. More importantly, we will focus on hedging our [short] positions.

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AT: Stan, how does implied volatility fit into the equation when LJM trades short strangles?

SI: It's a critical element. Implied volatility is a stochastic variable, which means it's not known for sure. The best-case scenario is when you sell options at high IV, and the realized volatility is low over the option's life.

One issue is time decay is defined at a constant volatility. Suppose you sold an option at a specific level of implied volatility. If IV climbs, you won't see the option's value decay [because of time]. In some cases, an option's value won't change after two or three days, even though the market is flat. But time always enters into the option-pricing equation.

AT: So you don't see an option's normal time decay because implied volatility is a larger part of its value?

SI: Yes. The option premium may remain high or even increase. Those cases are rare, though.

If implied volatility is constant, then you will definitely see time decay. On the other hand, let's say time passes and IV declines. In these cases, time decay is even bigger and options sellers profit more quickly.

AT: In addition to short strangles, your firm now trades positions that benefit from rising volatility. Do you mind explaining how your long-volatility strategy works?

SS: At the beginning of 2007 we decided to offer a new strategy that would profit from a sharp downward move in the markets. Also, we wanted to offer clients

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ways to protect the gains they have earned over the years. Stan [trades the long-volatility strategy] and brings academic discipline to the firm.

Rather than selling premium, we are now buying premium. Think of it as running the short-strangle strategy 180 degrees in the other direction. We are starting to trade derivatives other than options on S&P 500 futures, such as VIX options.

AT: Trading VIX options can be more complicated than trading options on standard indices such as the S&P 500 (SPX) or the Dow Jones (DJX). What do traders need to know about VIX options?

SI: The VIX index is based on S&P 500 options that expire in 30 days. Or, it's an interpolation of the closest expiration and the next month, so it definitely has the 30-day risk horizon.

One can't trade the spot VIX index, although VIX options are formally defined as options on that index. (If you are trading the nearby month, then VIX option's strikes refer to spot index values.) When pricing options on VIX, one needs to use the forward VIX levels extracted from VIX futures.

AT: When you trade VIX options that expire in more than 30 days, are the terms at-the-money, in-the-money, and out-of-the-money slightly different?

SI: Yes. VIX options' "moneyness" should be exclusively defined in terms of VIX forward prices.

Let's say you own a three-month, 21-strike call and today's VIX is 22 or 23. (That call may seem ITM by one or two points, but it may not be. It depends on the VIX futures, or forward, price at the same expiration.) You don't price a 21-strike VIX call the same way as a U.S. stock option with the same spot price and volatility. You have to look at the VIX's forward levels, because volatility tends to revert to the mean.

AT: It's hard to make money just by buying VIX calls, isn't it?

SI: It's very hard. In theory, it's a losing proposition. You have to trade very carefully and use complex models to at least [break even] over a relatively long time period. You need a chance to capture a spike in volatility.

AT: Why don't you just sell VIX puts? Isn't that a good hedge for a long stock portfolio?

SI: Maybe, but then the put seller is exposed if volatility declines. The exposure is limited, though, because you know the volatility will not drop to zero. You wouldn't expect implied volatility to be less than 9 percent — VIX's historical low since its inception in 1990.

However, one needs to sell a significant

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number of puts to collect enough premium to compensate for possible losses in a long equity portfolio. And selling large numbers of VIX puts is risky in this case.

In general, it's better to buy VIX calls as a hedge. The VIX index didn't exist in October 1987 when the stock market crashed on Oct. 19. But the CBOE did calculations based on the S&P 100 (OEX) and the [hypothetical] VIX index was above 150 that day. Some of the strikes traded at 250- to 300-percent implied volatility, according to some traders. It had to do with the market's reaction and overall panic under those extreme conditions.

The hypothetical VIX index jumped from 36.37 on Oct 16, 1987 to 150.19 on Oct 19, 1987. The VIX was just 49.5 on Nov. 19, and fell below 30 on Feb. 19, 1988. [Owning] short-dated VIX calls would have been very profitable.

As the stock markets go down, IV goes up. This pattern can be explained by the

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leverage effect, liquidity, and human behavior. In addition, volatility tends to revert to its mean, although [this tendency] is more subtle and is often overlooked.

If you trade an aggressive delta-neutral strategy (e.g., a *short strangle*) and you want to sell the same premium on both sides, you must sell calls with strikes that are closer to the money than the short puts' strikes on the downside.

AT: What is the leverage effect?

SI: The leverage effect is the economic explanation for this phenomenon (*IV climbs as markets fall*). Assume you have a company with fixed assets and liabilities. If the company's value drops, its assets decrease as the liabilities stay the same. As a result, an investment in this company is riskier. If you measure risk in terms of implied volatility, then IV will increase.

There are different ways — including behavioral finance and mathematical approaches — to trade this skew. But experts have concluded the market panics

more on the downside and liquidity dries up. As a result, options' premiums increase — especially puts.

AT: In the past 10 years, IV fell 75 percent of the time when the S&P 500 rallied. Doesn't that mean call-selling strategies have some type of edge?

SI: Yes. The historical correlation between the S&P 500 and the VIX is 75 to 78 percent. But if you consider so-called “tail” events — the market's extreme up and down moves — you'll see that negative correlation is practically 100 percent.

Selling calls on the S&P 500 is less dangerous, because the market is more liquid. If you sell calls, you can buy them back quickly to eliminate risk. However, if you sell puts and the market gaps down, you will have to pay much more to buy them back. 📌

Chris Peters and Jay Kunstman contributed to this article.