

# The Rise and Rise of Volatility Trading...

Orc Software examines the increasing swing towards volatility trading by trading firms worldwide; looks at current market requirements and key differentiators. Edited by Annie Walsh, Chief Marketing Officer, Orc Software.

The jury's in. The recent rise in volatility trading within the capital markets, prompting further trading development in this area, will result in even greater numbers of trading firms, worldwide, expanding their global use of volatility trading strategies. While volatility as an asset class has been the subject of debate in certain circles for at least the past five to ten years, it has very recently received more heightened media and industry attention and scrutiny.

The subject has spawned much academic research. Back in May 2006, the Financial Times was writing about why volatility would become an asset class. More recently, Emmanuel Bourdeix, Credit Agricole Asset Management's head of derivatives and convertibles said: "volatility should be considered as an equity sector in its own right alongside financials, industrials and mining stocks."

In 2007 Izzy Nelken of Super Computer Consulting released her well-received book *'Volatility as an Asset Class'*. And, more recently Lehman Brothers International came out with its *'Volatility Trader Weekly'*, aimed at covering a spectrum of volatility products in response to the rapidly growing area of structured flow derivatives.

## What is Volatility?

Volatility is a measure of how rapid price changes have been (SV, or Statistical Volatility) and what the market expects the price to do (IV, or Implied Volatility). In other words, volatility refers to the amount of uncertainty or risk about the size of changes in a security's value.

A higher volatility means that a security's value can potentially be spread over a larger range of values. This means that the price of the security can change dramatically over a short time period - in either direction. A lower volatility means that a security's value does not fluctuate dramatically, but changes in value at a steady pace over a period of time.

High volatility tends to occur at times of market stress caused by major company credit rating downgrades, record crude oil prices, and military conflicts. Conversely, low volatility, which generally occurs in quiet markets, can *potentially* offer better prices for buyers. Nonetheless, there is no guarantee the market will make a significant move anytime soon.

Professional traders can today trade in volatility, corridor and covariance swaps, as well as gamma and correlation trades to seek excess returns, or alpha. It's not just confined to the OTC market as there are many exchanges globally offering listed options products, which have been a volatility staple for many years.

Volatility trades can be made using instruments in any asset class such as trading in commodities like gold, cotton and oil, indexes as well as treasury and short term interest rate (STIR) derivatives for the European (€), UK (£), American (\$) and Japanese (¥) currencies.

## Alpha Generation Attractions

Investing in volatility is attractive for investors seeking risk diversification and alpha generation. Often perceived as a negative representing uncertainty and risk, volatility can be potentially very rewarding if traders short on the peaks and buy on the lows. Money can be made, and increasingly so, with even greater volatility. This is in contrast to the stance of typical long-only asset managers.

"The idea of treating volatility as a separate asset class is attractive because of the highly negative correlation of volatility to stock market indices," wrote Hafner and Wallmeier in the 2006 paper, *'Volatility as an Asset Class: European Evidence'*, which investigated the risk-return trade-off of variance swaps on the DAX and EuroStoxx50 indexes between 1995 and 2004.

The most common instruments for investing in 'pure' volatility are variance swaps, which have been enjoying an

active over-the-counter (OTC) market. Major investment banks and consultants have, for some time, advocated integrating long volatility positions in the shape of variance swaps - or forward-starting straddles - into equity portfolios.

Volatility trading through listed options are historically regarded as the main instruments for volatility trading, with vanilla calls/puts and delta-neutral strategies extensively used.

The two main applications of volatility trading are firstly as an alpha generation strategy, a practice historically reserved for more specialist market participants. This market has seen a growing number of new entrants as the practical trading of the volatility markets opens up to a wider audience. The second strategy is as a hedging strategy, which looks to take advantage of the negative correlation between equity returns and volatility.

The maths behind volatility trading is complex and requires sophisticated technology and systems. In consequence, having the fastest available software is crucial. In executing a volatility view, variance swaps are ideal for taking a direct view on volatility for an underlying without the "path-dependency" issues of a delta-hedged option.

"In the listed products area there are many market participants with low-latency algorithmic trading engines constantly seeking volatility trading opportunities," says Markus Kämpe, senior product manager at Orc Software. "This makes the listed market not only competitive on volatility skills but also on having the fastest software."

Variance swaps are popular with volatility traders and offer a straightforward vehicle for achieving long or short exposure to market volatility. When using variance swaps, the volatility trader can achieve more success with tools for managing volatility risk and more exact methods for taking views on future volatility. Also popular with traders is volatility dispersion trading, a strategy designed to take advantage of relative value differences in implied volatilities between an index and a basket of component stocks.

In Europe, products where there has been most interest for trading variance swaps are the Eurostoxx50, Nikkei, S&P500, Hang Seng, DAX and the largest stocks in Eurostoxx50. In the US S&P500 is by far the "dominant product" from the market interest Orc has observed to date.

Volatility trading has always been an important focus for Orc's expanded development strategy and a key part of its Orc Trading offering for advanced, risk management trading solutions. Market Makers use Orc Trading to handle large trading volumes, and to achieve fast execution with comprehensive risk management. Professionals use the solution to quote thousands of instruments simultaneously on multiple markets with pre-defined or custom pricing models.

A significant number of Orc's professional client's trade volatility through listed options and options strategies – regarded by Kämpe as the main instruments so far for trading volatility among Orc's customers. The trend among these traders is to find new ways for executing their volatility trading strategies and an increasing number of traders have added variance swaps to their portfolio of traded instruments.

In the volatile markets witnessed of late, there has been increased interest in sophisticated hedging strategies and low-latency algorithmic trading solutions, where much of the volatility trading strategies are automated to quicken response to market fluctuations. Increased trading in variance swaps has also provided traders with yet another way of investing in their view on market volatilities.

While many of Orc's customers are market makers and options traders today, not all necessarily engage in volatility trading. "Throughout the years a significant proportion of our customer base has consistently engaged in volatility trading and there is no indication that there will be a change in this trading behaviour," says Kämpe.

"Certainly over the last three to five years we've seen increased interest in trading volatility with clients using different types of strategies or different types of instruments. A global approach to volatility trading is on the rise with trading firms wanting to leverage their volatility expertise and proprietary knowledge across as many markets as possible. This strategy also requires extensive connectivity to enable firms to compete in many competitive derivatives markets."

Traditionally many Orc customers have exercised strategies not only for the equity derivatives space but also for debt instruments. This has spanned treasury and short-term interest rate (STIR) derivatives (e.g. in Euribor, Eurodollar). Today volatility trading in commodity derivatives is gradually receiving more and more attention.

While Kämpe notes high interest among Orc's customer base in the OTC market for variance products, he sees that some clients are more watchful



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about their trading strategies since the onset of the credit crunch.

In the area of volatility and advanced derivatives trading, Orc provides valuable off-the-shelf and customized pricing and volatility models for any traded product or asset class. Customized volatility models can be used by clients to manage risk while generating real-time quotes with a more permissive, market tracking volatility model.

In addition to leading-edge functionality for working with volatility surfaces, the user interface provided by Orc is extremely robust and designed to also handle customer-developed models.

When trading volatility, it is important to manage volatility the way

traders want. "Traders require an advanced trading system that can support their unique ways of looking at, and working volatility," says Kämpe.

Kämpe adds: "Another market edge Orc provides customers is volatility models that can be worked with and an open interface - an API - where the customer is able to add their own volatility models, and work with the resulting volatility surfaces as flexibly as those provided with the Orc system."

Traders can trade and hedge products utilizing customized or proprietary pricing and volatility models for each product. The analytical capabilities enable volatility model parameters and points to be freely defined, as well as being able to control behavior of a volatility surface when the underlying price moves.

Orc Liquidator, the Orc solution developed for algorithmic trading, allows customers requiring full control over trading logic, to tailor volatility strategies to suit their specific requirements. By automating as much as possible of the proprietary volatility trading strategies (including scanning multiple markets for detecting volatility discrepancies to trade on and sophisticated hedge strategies) the low-latency solution is a primary choice for any trader with volatility trading at the top of their agenda.

Significant solution enhancements introduced by the firm two years ago have allowed Orc's customers to plug their own customized volatility models into their trading systems. "With these enhancements we are in a good position to keep our volatility trading solution at the market edge and respond to future changes in market demands in volatility trading," says Kämpe.

With variance swaps currently the most traded volatility products among its customers, Orc believes that interest in trading volatility as an asset class will grow further - both for listed and OTC products.

"We are starting to see interest in trading options on variance swaps, but need to see more participants undertaking this to know it will be a major trading strategy in the future," says Kämpe.

"That said, the increased interest in options on variance swaps together with higher volumes in VIX options indicate that trading options on volatility will very likely be part of many volatility traders' business in the future."

Looking further along, Orc reveals that some moves are underway to support additional types of pricing and volatility models, thereby providing traders with even more tools for gaining greater control. ■