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FOREIGN EXCHANGE OPTIONS

IMPLICITLY SELLING VOLATILITY

Active investor trading has brought about changes in the foreign exchange options market, leading to the revival of older – but still useful – concepts

Over the past couple of years, drastic changes have taken place in how private investors view and influence the foreign exchange options market. It has gradually become a far better environment in which to control risk.

'The current situation in the FX options market has positive effects on the global FX markets. The balance between option buyers and sellers has clearly shifted to become more neutral'
Niklaus Meyer, UBS

Specifically in FX, the options market used to be a buyer's market. Big market-making houses were generally short vega (at-the-money options) and short volgamma (out-of-the-money options). This has changed and there is a direct and a more indirect reason for this revision.

In a direct way, more and more private investors are selling FX options, thereby carefully adjusting the amount of leverage they wish to take. Such positions are risk-managed on a dynamic basis. Investors actively trade their position and use take-profit and stop-loss orders in the options as well as in the forwards market.

This is time-consuming for the investor since a whole universe of data is available for the decision-making. Even for professional FX traders it is hard to get a complete overview. Only a few of those indicators are actively looked at. These indicators are generally of a complicated nature and not easily accessible to a general audience.

YIELD ENHANCEMENT

A more indirect way of selling implied volatility has emerged with the dawn of FX yield enhancement products. In most cases, a buyer of such products is implicitly selling options.

As a result most market-making option books now have a more or less constant supply of vega and even the very much needed volgamma. This supply of options has a risk-reducing effect for the market makers. It partially offsets the corporate, institutional and speculative demand for vega. For those market-making banks, the risk is reduced even further due to the fact that these yield enhancement products are traded fully-funded. There is no leverage added, and no show-stopping credit limits need to be in place.

To this end, the current situation in the FX options market has positive effects on the global FX markets. The balance between option buyers and sellers has clearly shifted to become more neutral.

RISK REDUCTION

There are several reasons for this shift.

A great portion of the vega supply stems from FX yield enhancement products bought by private clients. These products are even bought by individuals who would generally not buy or sell the components alone (because the individual components seem too risky).

So why buy the package?

This question needs a closer look. It is much too simple to just think that a packaged solution sells because it pays a high yield. Above money market yields could be achieved in several other ways as well.

Therefore more insight might be gained by looking at an older concept – a strategy that emerged from the first days of option trading: the so-called buy-write.

BASIC STRATEGIES

In option textbooks and derivatives classes, the most common basic strategies are protective-put and buy-write. Both strategies are built of a core long position in an underlying (e.g. a company share or a US dollar deposit) plus a long/short position in an option. The protective-put adds a long put option to the underlying and therefore creates a synthetic long call position. The buy-write adds a short call option to the underlying and creates a synthetic short put position.

At a first glance, the protective-put position seems to be risk-reducing. The buy-write looks like the opposite. A closer look though reveals a slightly different picture.

The biggest difference between the two positions is the premium. The protective-put is a negative cash flow as opposed to the buy-write, where a premium is paid to the holder. So even though the upside is limited to the buy-write, one already begins with money in the pocket. This can be viewed as a discount on the price of the underlying.

On the other hand, the protective-put holder can be seen as buying the underlying too expensively but inclusive of downside insurance.

The decision concerning which strategy to choose depends on the needs of the investor. In a risk-neutral world, all three strategies have the same expected yield at maturity, namely the risk-free interest rate. More mathematically speaking, the mean value or first moment of their respective distributions of return is the same. But that's as far as features in common go.

The distributions of returns are a key difference. Their

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variance, or its square root, the standard deviation, is a measure of risk. For both the protective-put and the buy-write, the standard deviation is smaller than that of the pure long position. Therefore the Sharpe ratio of both strategies is also greater.

Outside the risk-neutral world, expected returns are not the same for different investors. Investors who enter a buy-write might choose the strike for the short option slightly above the level of the growth expectations of the underlying. This way, investors can maximise their return potential, should their view be confirmed.

Again it can now be argued that the Sharpe ratio increases. The distribution of returns is cut off beyond the strike and therefore, in most cases, the standard deviation gets reduced.

To recap, entering a buy-write increases the Sharpe ratio, even though one is selling an option.

DUAL CURRENCY

Welfare maximisation means minimising spreads. In other words, an investor should always aim for the simplest instruments to express a specific view. The most transparent components are usually the most liquid ones. Buy-writes – or the packaged version as a dual currency deposit – are transparent and liquid.

Above money market coupons are the dominant feature of dual currency deposits. Risk reduction and tight pricing are often neglected. As explained above, option theory helps us to gain a better understanding of them.

Buy-write is back

Reasons for the revival of the buy-write in foreign exchange – in other words for the arrival of the dual currency deposit:

- **High transparency**
- **High liquidity**
- **High yield**

After these arguments on risk reduction, now a final word on yield enhancement.

The standard deviation or width of a distribution is not only a measure of risk, but also of chance. The width of the distribution of returns is the main parameter when calculating the probability for an option to get exercised.

This width increases with the square root of time. In the words of John C. Hull, the uncertainty increases as the square root of how far ahead we are looking.

The consequences for the holder of a buy-write are evident. The shorter the tenure, the more premium per time the investor gets paid for the same probability to get exercised. This is the fair value. There is no arbitrage.

Dual currency deposits are quoted with a per annum coupon payment or yield. The shorter the tenure of a dual currency deposit, the greater the coupon payment becomes. And so we have the ingredients for a success story.

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