Strategic Perspectives

Cboe options on VIX futures

By Izzy Nelken, Ph.D.[1] and Professor Hans-Jörg von Mettenheim[2]

Introduction

Recently the Cboe (Chicago Board Options Exchange) announced plans to list options on VIX futures. These are expected to launch on October 14, 2024. This article discusses similarities and differences between these options and the options on the VIX which have been trading since February 24, 2006.

What are VIX options?

VIX options are available as monthly options or weekly options. They are cash-settled based on the settlement value of the relevant VIX contract and the exercise price. The expiration date is usually a Wednesday morning and the settlement value is the special opening quotation (SOQ) of the relevant VIX contract.

What are options on VIX futures?

Options on VIX futures are physically settled and result in the delivery of the nearest to expire VIX futures contract. These have European-style exercise and have a PM settlement. Their expiration date will typically be the Tuesday which is one day before the expiration of the nearest VIX futures contract.

A Comparison between VIX options and options on VIX Futures

The table below shows some of the pertinent differences between VIX options on VIX futures:

	VIX Options	Options on VIX Futures
Settlement	AM	PM
Typical Settlement Day	Wednesday	Tuesday
Settlement Style	Cash settlement	Physical settlement
Available Expirations	Spanning multiple months	Only to the nearest expiring VIX Futures contract

Some brokers may impose separate margin requirements on VIX futures and on options on the VIX index. Hence, even “risk reducing trades” may require additional margin. This would not be the case when VIX futures are coupled with options on VIX futures. Such risk-reducing trades will require lower margin amounts.

Strategies with options on VIX futures

Since options on VIX futures result in physical delivery of a futures contract, the trading account must have access to futures. An interesting feature of VIX Future options is that trading in the underlying is possible, essentially allowing for smoother implementations of strategies that rely on these kinds of trades. The VIX index itself is a theoretical index which relies on a continuously updating weighted average of SPX option prices. Interesting opportunities should also arise in the domain of short vol exposure, with additional puts allowing for a finely tuned position taking before or after uncertainty reducing events without the risks inherent in futures.

1 President, Super Computer Consulting, Inc. www.supercc.com, izzy@supercc.com
2 Head of the Research Axis Financial Stability, Market Dynamics, and Green Finance

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VIX future options are intended to trade with expiration every weekday. This will allow a more granular position taking than weekly or monthly VIX index options.

Essentially, finely tuned calendar spreads become possible. This adds a layer of sophistication to the universe of potential VIX term structure trading strategies which until now would only have been implementable through complex transaction.

The PM settlement is also potentially advantageous, compared to the prevalent AM settlement of VIX index options, are this allows the incorporation of news that reaches the market intraday.

A comparison of outcomes

Long call options

Consider the following typical scenario where someone want to protect against a stock market downturn by purchasing call options on volatility. After all, if the stock market drops, volatility will likely increase.

Case 1: Buy a call option on the VIX

Case 2: Buy a call option on the VIX futures contract

Suppose, that at option expiration, volatility increased and the call ends up in the money.

Case 1: The option buyer gets a cash settlement amount. The amount would be calculated based on the VIX settlement at expiration minus the strike price, all multiplied by a proper scaling factor (the multiplier). Therefore, the trade is completed.

Case 2: The option buyer gets a long futures position and has to pay cash. The cash amount is calculated based on the futures price at option expiration minus the strike price, scaled up by the multiplier.

If the option buyer manages to immediately sell their futures position with zero friction, their profit on the futures position will be zero and they will be left with the original cash.

But if they don't sell right way, they will have to manage the long futures position which may cause swings in their profit and loss. In extreme cases, they may lose more than the cash that they've received.

Long put options

Consider the following typical scenario where the stock market drops and someone want to profit if it recovers by purchasing put options on volatility. Typically, when the market recovers, volatility will tend to decrease.

Case 1: Buy a put option on the VIX

Case 2: Buy a put option on the VIX futures contract

Suppose that at option expiration volatility dropped and the put ends up in the money.

Case 1: The put option buyer gets a cash settlement amount. The amount would be calculated based on the strike price minus the VIX settlement at expiration, all multiplied by a proper scaling factor (the multiplier). Therefore, the trade is completed.

Case 2: The put option buyer gets a short position in a futures contract and has to pay cash. The cash amount is calculated based on the strike price minus the futures price at option expiration, scaled up by the multiplier.

If the option buyer manages to immediately cover their short futures position with zero friction, their profit on the short futures position will be zero and they will be left with the original cash.

But if they don't cover the short right way, they will have to manage the short futures position which may cause swings in their profit and loss. In extreme cases, they may lose more than the cash that they've received.

Summary

Options on VIX futures open a new range of trading strategies. It will be interesting to see how the Street will adapt to them. In the future, CBOE might be able to calculate and disseminate a new variant of the VVIX index (the volatility of volatility) which will be based on options on VIX futures.

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