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THE WORLD'S EVENTS, PRICED IN US MARKETS

RESEARCH PAPER 02 · DERIVATIVES

Pricing Geopolitical Risk in SPX Options

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ABSTRACT

Geopolitical events are discussed as though markets price the event. They do not. They price a distribution of outcomes conditional on the event, and they do so through a small number of observable channels. This paper sets out those channels, explains why the option market's response to a headline is usually a response to something else entirely, and describes the specific way that mispricing tends to resolve. It is a framework paper. It contains no forecast, no view on any current situation, and no return figures.

1 Markets do not price events

A common error, and it survives because it sounds obviously true: the market has priced in the conflict, or the election, or the sanction.

An option market cannot price an event. It prices a distribution. What it responds to is a change in the shape of that distribution, and headlines change the shape only when they change one of a small number of underlying quantities. Most do not.

This matters practically because it explains the most reliably confusing phenomenon in event trading: a dramatic headline arrives, the index barely moves, and the price of insurance falls. Nothing is broken. The headline resolved uncertainty rather than creating it, and resolved uncertainty is worth less than uncertainty.

> The question is never "is this event serious". It is "does this event change the width of the distribution, or only its location".

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2 The four channels

Geopolitical risk reaches an equity index option through four channels, and they are worth separating because they behave differently and they resolve on different timescales.

Channel one: the physical channel

Something in the real economy is interrupted. A shipping route closes, a production facility stops, a commodity cannot move. This is the slowest channel and the most tractable, because it is countable. Vessels, barrels, tonnes and lead times are observable, and the transmission from the

interruption to a corporate margin is arithmetic rather than sentiment.

Channel two: the policy channel

The event changes what a central bank or a government is likely to do. A supply shock that raises headline inflation constrains a bank that was preparing to ease. This channel frequently dominates the physical one, and it is the reason a regional event with negligible direct economic exposure can move a US index more than a larger event with none.

Channel three: the positioning channel

The event forces holders to transact. Mandates require reduced exposure, risk limits bind, and dealers hedging their own books amplify the move mechanically. This channel is the fastest and the least related to fundamentals. It is also the one most often mistaken for the market forming a view.

Channel four: the uncertainty channel

The event widens the range of outcomes without changing the central case. This is the channel that moves the price of insurance most directly, and it is the one that decays fastest, because uncertainty resolves whether or not the situation improves.

TABLE 1. CHANNEL CHARACTERISTICS

CHANNEL	SPEED	OBSERVABLE IN ADVANCE	WHERE IT SHOWS IN THE OPTION SURFACE
Physical	Weeks to months	Often, if you count the right things	Longer-dated implied volatility, sector dispersion
Policy	Days to weeks	Partially, via the reaction function	Volatility around scheduled policy dates
Positioning	Hours to days	Rarely	Front-dated volatility, skew steepening
Uncertainty	Immediate	No	Front-dated volatility, and it decays first

Illustrative. Descriptive of the ordinary pattern, not a rule, and channels frequently operate together and in opposite directions.

3 Why the front of the curve overreacts

When a geopolitical headline arrives, the response is concentrated in short-dated options. This is usually described as fear, which explains nothing. The mechanism is more specific and more useful.

Short-dated options are the cheapest instrument for expressing a view on an imminent binary, and they are also what a risk manager reaches for when an existing book must be hedged before the close. Demand arrives in the front regardless of whether the event has any long-horizon consequence, because that is where the instrument that fits the problem lives.

The result is a curve that steepens at the front, and a front that then decays as the binary resolves. The decay does not require the situation to improve. It only requires it to become known, which is why insurance can cheapen while a situation deteriorates, a sequence that looks irrational and is not.

The trap this creates

The obvious inference is that elevated front-dated insurance following a headline is systematically expensive and can be sold. That inference is correct often enough to be dangerous.

The situations where it fails share a feature: the event is not a binary that resolves, but the first observation of a process that continues. In those cases the front is not overpriced, it is early, and the seller has written insurance against something that has barely begun. Distinguishing the two in advance is genuinely hard, and any framework claiming otherwise is selling confidence.

4 What is actually observable

Four things can be measured rather than inferred, and they are where the analytical work belongs.

- **The gap between implied and subsequent realised volatility.** Not a forecast, an accounting identity after the fact, and the only honest scoreboard for whether insurance was expensive.
- **The term structure's shape.** Whether the front is elevated relative to longer tenors, which distinguishes an event premium from a level shift.
- **Skew steepness.** How much more downside protection costs than equidistant upside, which reveals whether the market is pricing a

widened distribution or a directional view.

- **Whether the physical channel is countable.** If an interruption can be quantified in units that eventually appear in a margin, the transmission is analysable. If it cannot, the position is a view on sentiment wearing an analytical costume.

5 The case against trading this at all

A framework paper that only makes its own case is marketing. Three arguments against.

The sample is small and each event is different. Geopolitical episodes that meaningfully moved a US index are few, and each had features the others lacked. Pattern-matching across such a sample produces confident conclusions from thin evidence, and the confidence is the dangerous part.

The channels are not separable in practice. The four-channel decomposition is analytically tidy and operationally difficult. In a live episode the channels fire together, sometimes in opposite directions, and attributing a move to one of them is usually a story told afterwards.

Selling elevated insurance into an unresolved situation is the classic way to be destroyed. The strategy of writing the post-headline spike has a long record of working repeatedly and then failing once, comprehensively, in the episode that did not resolve. Any account of this activity that does not put that failure mode in the foreground is not describing the activity honestly.

6 What would have to be true

For a geopolitical event to be tradeable in index options rather than merely discussed, three conditions have to hold at once.

The event must reach the index through a channel that is countable, rather than only through sentiment. The option surface must be pricing a different distribution from the one the countable channel implies. And the position expressing that gap must survive being wrong about timing, because the gap can persist or widen for longer than a position can be financed.

Most events fail at least one of these, which is the practical conclusion. The analytical work is mostly the work of establishing that an event is not tradeable, and being willing to write nothing is not a failure of the process. It is the process functioning.

IMPORTANT INFORMATION

This paper is general information and education only. It is not financial product advice, it is not a recommendation to buy or sell any instrument or strategy, and it does not take into account your objectives, financial situation or needs.

Nothing in this paper is a forecast, a view on any current or future geopolitical situation, or a statement about the direction of any index, security or price. Strategies referred to involve the sale of options, where losses can substantially exceed the premium received and, in some configurations, the capital committed.

No return figure, target or expected outcome is stated or implied. Any tables are illustrative and are provided to show a mechanism, not to describe a result. Past performance is not a reliable indicator of future performance.

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