QTS Final Pitchbook: Options Volatility Strategy

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Motivation

- **The Cost of Insurance:** In financial markets, options function as insurance against extreme price swings, with Implied Volatility (IV) acting as the premium investors pay for that protection.
- **The Reality Gap:** Driven by the need to hedge risk, the market consistently overprices this insurance, causing the expected risk (IV) to frequently exceed the asset's actual day-to-day price movement, known as Realized Volatility (RV).
- **The Uncorrelated Opportunity:** By capturing the spread between the inflated market price of risk and the actual market movement, we can generate returns that do not depend on predicting whether the broader market goes up or down.

Trading Signal

Main idea: Trade the spread between IV and RV using straddles

Since spread is not centered at 0 due to crash insurance premium, we use a standardized rolling z-score of spread as trading signal

Define entry and exit thresholds based on this z-score

Risk Management

Naively, this strategy carries significant left-tail crash risk if consistently shorting the volatility

Thus, needs robust risk management practices:

- Stop-loss thresholds
- Limits to vega exposures
- Regime filters
- etc…