



jump risk perceived by investors may be quite different from ex-post realized jumps in prices because even high-probability jumps may fail to materialize in sample. Therefore, employing options alleviates the “Peso problem” in measuring jump risk from observed stock returns.

A straddle involves the simultaneous purchase of a call and a put option. Such strategies experience high sensitivity to volatility – they have large vegas – and, if constructed to be market-neutral, are insensitive to market returns. However, this only holds for small diffusive shocks. In a world with jumps, straddle returns are subject to hedging error due to the positive gamma of the options: if the underlying asset experiences a large move in any direction, the straddle will not remain market neutral and will earn a positive return. This implies that straddle returns are affected by both volatility and jump risk. More importantly, this observation suggests alternative trading strategies that allow us to focus on each risk separately.

A strategy constructed to be market neutral and gamma neutral but vega positive is essentially insulated from jump risk and thus only subject to volatility risk. Similarly, a strategy that is market neutral and vega neutral but gamma positive is ideal to study the effects of jump risk. We show that both strategies can be constructed by setting up long/short strategies involving market-neutral straddles. Our resulting jump risk factor-mimicking portfolio (JUMP) is a market-neutral, vega-neutral, and gamma-positive strategy involving two at-the-money straddles with different maturities. Similarly, we construct the volatility risk factor-mimicking

