



How Options Flows Move Equity Markets

Insights from High-Quality Historical Data

White Paper

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Introduction

Modern financial markets operate as interconnected ecosystems. One classic case is in equity markets - the equity spot and options markets continuously influence each other through complex feedback mechanisms. Option market makers' hedging activities create systematic flows in the underlying equity markets, while spot market movements directly impact options pricing and dealer positioning. Understanding these cross-asset dynamics requires sophisticated analytics that can bridge both markets.

In this analysis, we demonstrate how you can capture these interconnected market behaviours by combining two complementary datasets: SpiderRock's options volatility surface data to estimate dealer gamma positioning, and BMLL's high-frequency equity market data, to observe the resulting intraday price dynamics. By integrating these datasets, we show how options market gamma imbalance translates into predictable equity price patterns that can be systematically captured through targeted trading strategies.

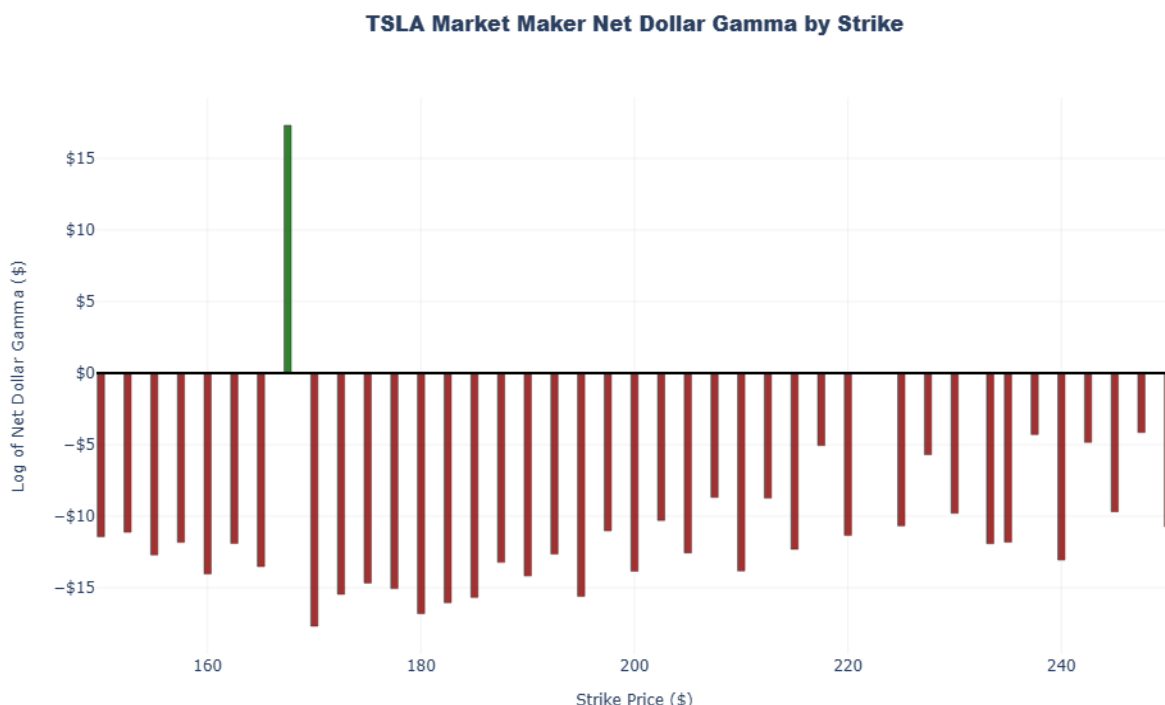
Our objective is to illustrate the practical value of unified cross-asset analytics in understanding modern market microstructure, demonstrating why institutional clients need integrated data solutions rather than siloed approaches to equity and options markets.

What Options Trading Reveals About Dealer Positioning

Using the SpiderRock Option Print dataset, we can approximate market maker gamma positioning. We do this by comparing fair implied volatility with traded implied volatility. When investors consistently buy options above fair value, dealers are

incentivised to short gamma; when investors sell volatility below fair value, dealers accumulate long gamma. By aggregating these gamma positions across strikes and maturities, we can estimate the net dealer gamma position.

In Figure 1, we plot the Log of Net Dollar Gamma by strike for TESLA (TSLA) over the two-week trading period from end of April 2024 to middle of May 2024. We can see that the option dealers have accumulated net short-gamma across nearly all the strikes.



Source: BMLL, SpiderRock

Figure 1: Estimated Market Maker Net Dollar Gamma of TSLA from Volatility Surface.

How Delta Hedging Shapes Intraday Equity Price Moves

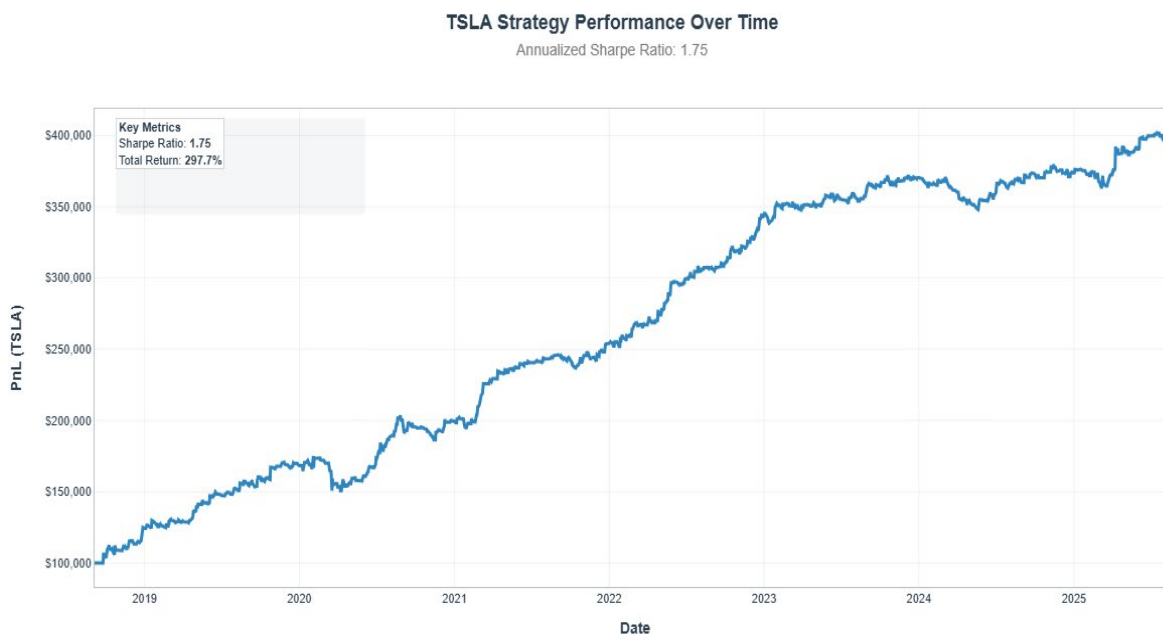
Such gamma imbalance across the whole strike spectrum means that market makers, who want to delta hedge, must dynamically hedge by trading the underlying in the same direction as price moves. This translates to buying as underlying prices rise, and selling as they fall. This delta hedging amplifies volatility, fuelling intraday momentum.

Persistent short-gamma positioning, particularly in large-cap technology stocks since 2018, explains why intraday price movements can often extend beyond what historical volatility would suggest.

A Volatility Trading Example

To validate this insight, we implement a simple intraday breakout strategy using BMLL intraday TSLA data. The framework defines breakout thresholds with a rolling 14-day volatility window and applies VWAP as a filter to confirm directional bias. A long is initiated if price breaks above the upper band while above VWAP (since we expect market makers to go long to delta-hedge their position), and a short is initiated if price breaks below the lower band while under VWAP. All positions are closed at the end of day.

This simple strategy backtest shows that gamma imbalance helps explain why intraday price trends can be stronger and more persistent.



Source: BMLL

Figure 2: Intraday Trend Backtest of TSLA using Intraday Prices and Volumes

Bringing Equity and Options Analytics Together to Identify Trading Opportunities

Equity spot and options markets are inextricably linked through complex feedback loops that drive modern market structure. Options market makers hedge gamma exposure through spot trading, while spot liquidity patterns directly influence options pricing and flow. Understanding these interconnected markets requires unified analytics across both asset classes - precisely what a BMLL-SpiderRock partnership can deliver. The combined dataset enables analysis of how options hedging flows affect spot liquidity patterns, and how spot market microstructure in turn influences options pricing and risk.

Modern markets are cross-asset ecosystems where spot and options markets drive each other through continuous hedging, arbitrage, and risk management flows. The BMLL and SpiderRock partnership allows you to treat these markets as the integrated system they are. This provides institutional clients with the complete analytical framework to understand, predict, and capitalise on these complex market interdependencies between equity spot and options markets.



About BMLL

BMLL Technologies is the leading, independent provider of harmonised, Level 3, 2 and 1 historical data and analytics to the world's most sophisticated capital market participants, covering global equities, ETFs, futures and options.

BMLL offers banks, brokers, asset managers, hedge funds, global exchange groups, academic institutions and regulators immediate and flexible access to the most granular Level 3, 2 and 1T+1 order book data and advanced pre and post-trade analytics. BMLL gives users the ability to understand market behaviour, accelerate research, optimise trading strategies and generate alpha more predictably.

To learn more about BMLL, visit <http://www.bmlitech.com/> or contact info@bmlitech.com



About SpiderRock

SpiderRock is a technology provider that creates and deploys advanced data analytics, algorithmic execution, and risk management solutions to volatility funds, hedge funds, bank trading desks, and proprietary trading firms worldwide.

SpiderRock's Data and Analytics business provides institutional-grade options analytics and market data, including historical datasets, live proprietary analytics, and direct exchange feeds to support trading, research, and risk models. Coverage spans U.S. and European equity options, options on futures, and futures markets, with both end-of-day and intraday data available.

SpiderRock also offers a high-performance, cloud-based trading platform that supports the construction, execution, and management of options strategies across both point-and-click and systematic workflows.

To learn more about SpiderRock, visit <http://www.spiderrock.net/> or contact datasales@spiderrock.net