

# Volume, Volatility, and Disagreement in Market Index Options

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## Abstract

We provide new empirical evidence of disagreement between investors in the S&P 500 options market. Our findings rely on high-frequency intraday price and volume data for options on the S&P 500 index. We base our findings on a disagreement model where investors observe public information but agree to disagree on its interpretation. In this framework, the disagreement between investors is captured by the volume-volatility elasticity. The options market provides two natural variables that are sharply related to disagreement: moneyness and tenor. We argue that these variables speak to disagreement about the distribution of the market index at different quantiles and at different times. We estimate a volume-volatility elasticity equal to unity for options that are at-the-money and near expiration, which is consistent with the case of no disagreement among investors. The elasticity estimate for other options, however, are all below unity, consistent with the case of disagreement between investors. Our elasticity estimates decrease with increases in the absolute value of moneyness, indicating investors have a higher disagreement about rare events. We also find that the elasticity decreases with increases in tenor, implying in higher investors' disagreement about events farther into the future.

*Keywords:* SPX options, market index, high-frequency data, disagreement, volume-volatility elasticity, public information

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