

## **Predicting Elections with Social Media**

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Elections are usually relevant for investment decisions, and we are in the midst of several particularly relevant elections. In recent years, the most accurate election predictions have relied on Bayesian combinations of election poll results. We have augmented that approach with an additional source: social media, specifically Twitter. We first identify tweets that are a) about the election in question, b) from the appropriate geography, and c) unlikely to be robotic. We then analyze the tweet sentiment and use that to imply a voting direction. We use this as an additional poll to include in our Bayesian combination of traditional polls and prediction markets. We have historically been assigning low Bayesian weights to Twitter, for a variety of reasons including concerns about the representative nature of voting public and limited numbers of historical events to assist with weight calibration.

We have applied this approach to three recent elections: the “Grexit” vote of July 5, 2015, the “Brexit” vote of June 23, 2016, and the U.S. presidential election of November 8, 2016. Twitter has correctly predicted the directional outcome of all three elections. This may be a spurious result—certainly possible after only three observations—but we have increased its weight and will be closely observing this in a series of upcoming elections in Europe.

While most of our talk will focus on using social media (specifically Twitter) to help predict elections, we will present this particular effort in the broader context of our increasing focus on using Big Data and machine learning to forecast investment returns.