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Wall Street Meets the Great Wall: Unraveling China's Geopolitical Risk via Media Sentiment and Topic Modeling

Ernest N. Biktimirov, Moyosore J. Babalola

Brock University, Canada

Abstract

This study examines the impact of China-related geopolitical risk on financial markets by analyzing the sentiment (polarity) and hype (intensity) of China-related discussions in business media. Using the Latent Dirichlet Allocation (LDA) topic modeling algorithm, we uncover 21 distinct topics of articles published in the *Wall Street Journal* during the 2009–2024 period. These topics span a wide range of themes including economy, business, politics, and society. To measure the sentiment of the topics, we use Loughran and McDonald's positive and negative word lists. To capture the intensity of discussions for each topic, we add the topic weights of all articles published within a given month. To analyze the relationship between financial asset returns and changes in topic sentiment and hype, we use Ordinary Least Squares (OLS) and quantile regression models with bootstrapped robust standard errors. We find that the topics differ not only in strength (significant vs. insignificant), but also in direction (negative vs. positive) and shape (linear vs. non-linear) of their relations to financial asset returns.

Keywords: Investor behavior, LDA, machine learning, sentiment analysis, textual analysis