

Investigating the Impact of Sentiment on International Financial Markets

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Abstract

The 21st century has seen an unprecedented rise in the volume of media content consumed by the general public, disseminated through a plethora of media channels ranging from traditional print-based distribution to modern online distribution on the world wide web. Often generated by influential parties such as formal media sources, the notion of how this information influences the opinions and decisions of those consuming this content has been posited.

This study examines how these formal media sources influence the opinions and emotions of imperfectly rational investors, thus in turn affecting the performance of international financial markets in the United States of America, United Kingdom and India. This is done through the development of a system that leverages natural language processing techniques to extract a proxy for the sentiment present within media articles in the domains of finance, economics and trading. Vector autoregressive methods from econometrics are then employed for multivariate time-series analysis, in order to model the impact of this sentiment on market return.

The system shows that sentiment has a measurable impact on return that is episodic and time-varying in nature, carrying statistical significance across each of the three markets. The US market shows that negative sentiment is significant during recessionary periods, with this significance being washed out after such periods of high uncertainty and volatility. Prior to a recessionary period, the UK market shows no significance of negative sentiment, however this changes upon its onset, and is somewhat maintained through into the period afterward. Finally, the Indian market consistently indicates the significance of negative sentiment, although its contribution is shown to heighten considerably during a recessionary period, thus suggesting a higher and continuous degree of uncertainty present in the more recently established emerging market.

It is observed that statistical models that account for sentiment exhibit a better fit for the data than the models that do not- thus suggesting that the consideration of sentiment as an influencing factor on return is justified and adds value to the modelling of financial return. Furthermore, this fit further improves when applied during a period of recession, indicating that perhaps sentiment is predominantly influential during periods of high market uncertainty and volatility.