

Abstract

Since the dot.com bubble burst in 2001, financial markets have been plagued by extreme volatility caused by investors emotions and irrational behaviors. Since the financial market has become more complex and tech oriented, stock market sentiment has been a key determinant of large market movements. In this context, it is worth to look into the role of emotions such as fear, greed, and excitement in influencing investment decisions. In addition, newly developed artificial intelligence techniques can be utilized to record and collect data from online sources to conclude collective irrational human behaviors. Behavioral finance is a newly developed discipline that examines the impact of psychological elements on decision-making processes when individuals encounter uncertain situations. This thesis aims to analyze the influence of behavioral finance phenomena including Herding, Anchoring, and Overconfidence biases on the investment decision-making practices within the context of the United States stock market. One of the study goals is to investigate whether sentiment of public, can be a rational tool impacting on investors' decision-making process or not. The investigation is prompted by the potential of Artificial Intelligence and Machine Learning to accurately analyze vast amounts of data and make judgments about the sentiment of financial markets. Scraping and crawling newspapers yielded primary data for analysis. To conduct the above stated analysis, we constructed a new variable, the sentiment factors which stand in core of our analysis. The research proposes that the integration of extensive behavioral data sets, such as stock news and financial stock data, alongside respective web search query volumes can offer novel insights into various phases of extensive collective decision-making processes. This amalgamation enables the identification of collective irrational behavior, commonly known as herding in behavioral finance. The overall goal is to provide the guidelines for constructing portfolios. The sentiment factor and traditional style factors were explored to find the impact of public sentiment on S&P 500 stock prices. The results are explained in a simplified manner and are supported by concrete, practical illustrations developed by using Python and R Studio software packages.

Title: Artificial intelligence in Behavioral Finance

Keywords: Artificial Intelligence, Behavioral Finance, Sentiment Analysis, Machine learning, Python.

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