Deciphering Decisions

Mini Project

Problem Statement

Following our discussion on behavioral finance and its influence on trading decisions, this mini-project requires you to implement and analyze the methodologies presented in two significant research papers. This project aims to enhance your understanding of advanced financial models and their practical applications.

Tasks

1. Study and Implementation

- Thoroughly read the provided research papers:
  1. ***Ripples on Financial Networks*** by Sudarshan Kumar, Avijit Bansal, and Anindya S. Chakrabarti. The paper can be accessed [**here**]
  2. ***Multifractality in Indian Financial Market*** by N. Deo, S. Kumar. The paper can be accessed [**here**]
- Understand the methodologies and theoretical frameworks discussed in these papers.
- Implement the key models and methods using a suitable programming language, preferably Python.

2. Application and Analysis

- Apply the implemented models to appropriate financial datasets.
- For the *Ripples on Financial Networks* paper, construct a network of conditional volatility series estimated from asset returns and estimate a high-dimensional VAR model to identify shock spillovers.
- For the *Multifractality in Indian Financial Market* paper, conduct multifractal analysis on the provided financial data to investigate the presence of multifractality and its implications.

3. Inferences

- Prepare a brief report detailing the following:
  - The theoretical background and rationale behind each methodology.
  - The results obtained from applying the models to the datasets and how well do they correlate to whats given in the papers.
  - A discussion on the implications of the findings and any observed behavioral finance phenomena.

4. Evaluation

- Your work will be evaluated based on the clarity of your implementation and its the correctness, and the depth of your analysis. The quality of your report will hold a weight too.

Note: Ensure that your implementations are robust and your report is well-structured and articulate.

Submission

- Submit your code as a Jupyter notebook or Python script.
- Include a written report summarizing your methodology, analysis, and conclusions.
- Ensure that all visualizations and tables are properly labeled and referenced in your report.