

Deciphering Decisions

Assignment 2

Problem Statement

In Assignment 1, you developed code to calculate various financial metrics, including Daily Returns, Cumulative Returns, Maximum Drawdowns, the Sharpe Ratio, and the Sortino Ratio. Building on this foundation, your task for Assignment 2 is to develop a trading strategy based on one of the research papers provided and evaluate its performance using the metrics you previously calculated.

Instructions

1. Access the research papers on technical indicators available in the following Google Drive link: (Click here) Research Papers on Technical Indicators.
2. Carefully review the five research papers to understand various technical indicators and trading strategies.
3. Select one research paper from the provided list and formulate a trading strategy based on the indicators and methods discussed in that paper.
4. Implement the chosen trading strategy using your existing codebase from Assignment 1. Ensure that your strategy utilizes the technical indicators as described in the selected research paper.
5. Apply your trading strategy to the same five international indices and five equities you analyzed in Assignment 1, using daily data from **January 1, 2022 to January 1, 2024**.
6. Calculate the following metrics for the trading strategy:
 - **Daily Returns**
 - **Cumulative Returns**
 - **Maximum Drawdowns**
 - **Sharpe Ratio**
 - **Sortino Ratio**

7. Compare the performance of your trading strategy with a simple buy-and-hold strategy.

Guidelines

- Ensure that your implementation of the trading strategy is consistent with the methodology described in the selected research paper.
- Use appropriate libraries and tools (e.g., `yfinance`, `pandas`, `numpy`) to fetch data, calculate metrics, and visualize results.
- Add comments to your code thoroughly, explaining the rationale behind each step of your implementation.
- Provide clear visualizations (e.g., charts, graphs) to illustrate the performance of your trading strategy compared to the buy-and-hold strategy.

Submission

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