Smart Beta Momentum Tilt Index - Restaurant Industry Analysis

Objective

To evaluate the effectiveness of a momentum-based smart beta strategy versus a traditional market-cap-weighted index in the restaurant industry using historical stock performance data.

Tools & Technologies

Python (Jupyter Notebook)
Pandas for data manipulation
yFinance for real-time stock price data
Excel & CSV integration
Smart Beta and Momentum Strategies

Project Steps

1. Data Preparation

Used historical data on restaurant industry stocks (2018 returns, tickers, index weights).
Converted Excel to CSV and cleaned ticker formatting for consistency.

2. Smart Beta Strategy Development

Calculated momentum scores by ranking companies based on 2018 returns.

Created momentum tilt weights to overweight top-performing stocks.

3. 2019 Return Calculation

Fetched adjusted closing prices from Yahoo! Finance for 12/31/2018 and 12/31/2019.

Calculated 2019 returns for each company using the formula:

Return = (Price_2019 - Price_2018) / Price_2018

4. Portfolio Performance Analysis

Computed 2019 weighted returns for:

The Restaurant Industry Index

The Momentum Tilt Index

Results:

Restaurant Industry Index Return (2019): 17.44%

Momentum Tilt Index Return (2019): 8.10%

Key Insights

Contrary to expectations, the momentum tilt underperformed in this case.

Highlights the importance of backtesting smart beta strategies before deployment.

Reinforces the need for data-driven decision-making over assumptions in portfolio construction.

Project Files

restaurant_stocks.csv (input data)

restaurant_stocks_with_2019_returns.csv (with calculated returns)

Jupyter Notebook (.ipynb)