Università Ca'Foscari Venezia

Project Assignment:

Multifactor Model and Arbitrage Pricing Theory (APT)
Academic Year 2024/25

Tasks:

This project focuses on applying the theoretical framework of multifactor asset pricing, with particular attention to the Fama-French 3-Factor Model and the principles of Arbitrage Pricing Theory (APT). The analysis involves selecting a group of US-listed stocks and examining their return dynamics over the last five years using monthly data.

The objective is to estimate how each asset reacts to common risk factors—market, size, and value—by calculating their respective factor loadings (betas) through regression analysis. Once the exposures are estimated, the results are interpreted to assess which factors significantly influence each stock.

In the final stage, the project tests whether the estimated betas are consistent with the absence of arbitrage conditions postulated by APT. This is done by evaluating the feasibility of constructing a portfolio with neutral exposure to systematic factors and analyzing whether it yields a statistically significant excess return.

The project follows a structured yet flexible approach, allowing for individual choices in data handling, implementation tools, and interpretation style, while adhering to the core theoretical guidelines of modern asset pricing.