Do ESG factors relate to yields of companies?

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Contents

Introduction

- Assessing factors introduced by Fama and French (1992).
- Focus on integrating ESG factors into factor models.
- **Research Question:** How do ESG factors relate to yields of companies?

Asset Pricing Models

- **Efficient Market Hypothesis** by Fama, 1970:
  All firm value information reflected in stock prices, complicating alpha generation.
- Introduction of the **Capital Asset Pricing Model (CAPM):**
  Systematic risk measurement through beta, leading to market risk assessment.
- Emergence of the **Arbitrage Pricing Theory:**
  Recognizing occasional market inefficiencies and short-term arbitrage opportunities.

Integration of ESG Factors

- The Fama and French **Three Factor Model:** Incorporating Small Minus Big (SMB) and High Minus Low (HML) into traditional market risk analysis.
- **Rise of ESG factors** in financial analysis: enhancing operational efficiency, stakeholder relations, and risk management.
- Correlation between strong ESG performance and higher company yields.

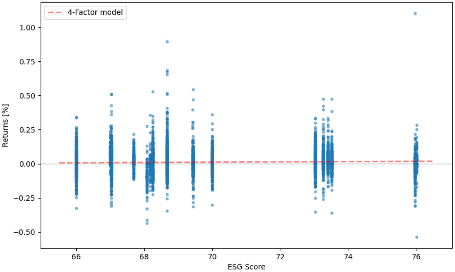
Research Methodology

- **Observation Period:** Data collected from September 1, 2014, to September 1, 2022.
- **Primary Focus:** Constituents of the Nasdaq 100 index.
- **Data Sources:**
  - Nasdaq 100 constituents sourced from Wikipedia.
  - Fama and French factors (1992) obtained as a CSV of monthly returns from their official website.
  - Monthly returns and ESG scores fetched via Yahoo Finance.
- **Data Cleaning Process:**
  - Removal of columns with only NA (not available) values.
  - Implementation of the fill-forward method for handling missing data.

Research Findings

- Regression Analysis:
  - All betas for (Fama and French, 1992) factors are negative.
  - Negative slope for market risk premium, challenging the concept of a reward for systematic risk.
  - Negative coefficients for SMB and HML suggest favoring large firms and growth stocks.
- Significance and Cautions:
  - None of the t-values reach statistical significance at the 5% level.
  - Results should be interpreted cautiously due to lack of statistical significance.

Results for **Four Factor Model**



- ESG factor shows a positive coefficient, indicating potential for higher yields with strong ESG scores.
- Lack of statistical significance for ESG factor under the 5% level.

Conclusion

- ESG factors can potentially lead to better yields.
- Suggestions for Future Research:
  - Extend the observation period and increase sample size for potentially higher statistical significance.
  - Explore the possibility of a more robust relationship between ESG factors and company yields.