

Homework 1

(Due date: October 22, 2025)

In this assignment, you will use the Global Compustat database via WRDS to construct firm- and country-level monthly stock returns and compare return distributions across different periods and market development levels.

Problem 1. Data Collection

Collect monthly firm-level data from Global Compustat for the following 10 countries, covering the period March 2020 – December 2024:

- Developed Markets (5): United Kingdom, Germany, Japan, France, Australia
- Emerging Markets (5): China, India, Brazil, South Africa, Turkey

Developed vs. Emerging market classification follows MSCI standards.

Problem 2. Return Generating Process

- (a) Using the collected data, generate firm-level monthly stock returns.
- (b) Compute firm-level market capitalization.
- (c) Construct country-level monthly returns:
 - Equally weighted (EW) returns
 - Value weighted (VW) returns (using firm market capitalization as weights).

Problem 3. Period Definition

Divide the sample into two subperiods:

- COVID-19 Crisis Period: March 2020 – December 2021
- Post-crisis Recovery Period: January 2022 – December 2024

Problem 4. Summary Statistics by Country and Period

For each country return (EW and VW), and for each subperiod, compute:

- Mean
- Median
- Standard deviation
- Minimum and maximum values
- First-order autocorrelation
- Skewness and excess kurtosis

Problem 5. Comparative Analysis: Developed vs. Emerging

- (a) Compare the average summary statistics across Developed and Emerging groups.
- (b) Discuss whether emerging markets exhibited higher volatility, skewness, or more severe crisis effects.
- (c) Highlight whether recovery dynamics differ between the two groups.

Problem 6. Correlation and Spillover Effects

- (a) Construct correlation matrices of monthly returns across countries for each subperiod.
- (b) Compare correlation levels across the two groups and across periods.
- (c) Discuss evidence of financial contagion during COVID-19.

Problem 7. Presentation of Results

- (a) Prepare tables summarizing descriptive statistics by country, period, and group.
- (b) Provide histograms of monthly returns for representative developed and emerging countries.
- (c) Write a short discussion (2–3 paragraphs) highlighting the main differences across countries, groups, and periods.