



# Università Ca'Foscari Venezia

## Homework 1 – Methods for Personal Portfolio Management

- Download daily closing price data for 8 stocks listed on the same stock market between October 23, 2023, and November 22, 2024.
- Calculate the daily logarithmic returns and identify the efficient sets of stocks using both mean-variance and mean-semivariance criteria. Compare and comment on the results.
- Use the first 200 daily logarithmic returns to determine the efficient/inefficient portfolio frontier and select portfolios with a desired expected return under the following scenarios:

Short selling allowed, no risk-free asset.

Short selling allowed, positive risk-free asset.

Short selling allowed, negative risk-free asset.

- Use the remaining returns (from the 201st to the last) to calculate the future performance (mean and variance) of the three portfolios. Compare their performance with that of an equally weighted portfolio and the global minimum variance portfolio. Analyze and compare the composition of the portfolios.

- Use the first 200 daily logarithmic returns to determine portfolio compositions using the Sharpe approach under the following scenarios:

- Short selling allowed, no risk-free asset.
- Short selling allowed, positive risk-free asset.
- Short selling allowed, negative risk-free asset.

- Compare the compositions with those obtained using the Markowitz approach. Use the remaining returns (from the 201st to the last) to calculate the future performance (mean and variance) of the portfolios and compare them with those from the Markowitz approach.