

Hello! You have been invited to complete this online challenge as stage 1 of your interview process for the Quantitative Analyst role here at Schroders.

Problem Description

Please build a one-day-ahead forecasting model for the traded value (in USD) for each stock.

In order for you to do so, we provide the following five daily data items for a selection of stocks over a 7-year period:

- the closing share **price** on that day [in local currency]
- the traded share **volume** on that day [in millions of shares]
- the bid-ask **spread** as measured at the end of that day
- a **volatility** forecast available before the start of trading on that day
- a **sentiment** indicator computed at the end of the day

In addition, we provide a mapping table stating the currency code for each stock and a timeseries matrix of corresponding exchange rates to enable you to calculate traded value in USD as follows:

traded value [m USD] = traded volume [m shares] x closing price [USD]

Ideally, we would like you to do the analysis in Python, but we will also consider submissions in R. It is important to demonstrate how you arrive at your solution. Show your workings in as much detail as you see fit (code, analysis, charts, commentary, etc). Please compile all of your response material in a zip file and submit within a week.

IMPORTANT: There is no need to stay logged into your browser session to complete the challenge. Simply download the instructions and data files and then work locally. Once you are ready to submit your response, log back in and upload your zip file.

Good luck!