

Assignment 2

Submission deadline: Januar 4 2022 (submission via OPAL or alternatively via email to torsten.heinrich@wiwi.tu-chemnitz.de).

Background

It is often unclear if two data series, e.g. time series, are statistically related. A first indication can be gathered from visual inspection of the two data series plotted against each other.

In this assignment, you will be dealing with data for (1) the unemployment rate for Germany and (2) the number of unfilled job vacancies in Germany. The two data series can be downloaded as CSV files from the website of the Federal Reserve Bank of St. Louis

- <https://fred.stlouisfed.org/series/LMUNRRTTDEM156S> (unemployment rate)
- <https://fred.stlouisfed.org/series/LMJVTTUVDEQ647S> (unfilled job vacancies)

Problem

1. Please write a Python script for investigating whether there is a statistical relation between the two data series. *Hint: This may involve reading and merging the two data sets, performing a regression, and plotting the data.*
2. Based on your results, can you conclude that the time series are statistically related? Why or why not? Please add a *brief* explanation in your PDF explanation document.

Please submit your solution including the .py script and a very brief explanation in .pdf format. The script should be well-structured and well-commented. The explanation should be brief and should explain how to use the script and show the results.

Please be sure to include your name in the submission.

If you do not receive a confirmation email, assume that the transmission of your solution did not work and resubmit/resend. I will send a confirmation email in response to any submissions made via email, OPAL sends confirmation emails automatically.

Good luck.