

Time Series Analysis

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Report

The report is based on the data contained in the "Data.csv" file. This data is made of three time series: the Chinese, US and Eurozone GDP growth. The aim of the report is to gauge the potential impact of a strongly negative quarter of growth on the rest of the economies, first in the case of China, then the Eurozone and finally in the case of the US.

The main question is therefore: what is the impact on country B over the next 4 quarters when country A shows a negative growth of $x\%$ during the current quarter? Instead of answering directly to this answer, your report should answer the questions below.

Questions:

- Explain what a VAR model and an impulse response function is.
- Using information criterions, estimate the lag to be used with the three data series for your VAR model. What do you think of this lag?
- Then using your VAR model, simulate the following impacts:
 - o A negative quarter of growth of -8% for China: what are the consequences over the other economies over the next 4 quarters?
 - o A negative quarter of growth of -5% in the eurozone: what are the consequences over the other economies over the next 4 quarters?
 - o A negative quarter of growth of -5% in the US: what are the consequences for the other economies over the next 4 quarters?

Each time show the IRFs and explain how to interpret them.

- Why is it important to estimate these second-round effects today? Are your results consistent with others'? Explain your findings and try to link them to (1) the literature you have access to and (2) to the current pandemic situation.