Course Projects for the Ph.D. course on Time Series Analysis
(Only 5 Pages or 10 slides)
(Due Date: The day of the Final Exam.)

This year there will be three options for the course project:

- To replicate **Stock-Watson JEP2021 VAR** paper for a country you select (no the US).

- To program the Gonzalo-Granger decomposition proposed in "Estimation of Common Long Memory Components in Cointegrated Systems", Journal of Business & Economic Statistics (1995), 13, 27-36. This should be done in Eviews. It could be done in R to form an add-in for Eviews or in Python. The project is suitable for at most two students.

- Global Warming: A SVAR for Temperature (land and ocean, Globe and NH-SH) and C02 or Temperature and GNP (or productivity)

Some Important Remarks for the VAR project (useful also for the Global Warming project)

1. Select a country with "enough" data for the variables: inflation, unemployment and interest rates.

2. Replicate the paper step by step and comment any important differences. [**10pts**]

3. Identification of the monetary shock via three identification schemes (short run, long run, sign restrictions, heterokedasticity, etc.) Plot (or do some co-movement analysis) the three identified shocks and check if there are main differences. Does it really matter the identification scheme? [**10pts**]

4. Compare the standard VAR-IRF of the monetary shock with the IRF obtained via Local Projections (LP). [**5pts**]

5. Test for unit roots and cointegration. Do your analysis suggest any modification from the previous VAR? [**2.5pts**]

6. Conclusion on how effective is the monetary policy. [**2.5pts**]