Macroeconomic Theory I
Problem Set 4

Sankalp Sharma

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Collect annual time-series data on real, fixed price (ideally) or chained GDP, Y_t, current price GDP, $NOMY_t$, current price gross investment, $NOMI_t$, hours worked, H_t, and the working age population, POP_t for

- *United States*

- *United Kingdom*

for the same sample period. Ideally, the sample period should be at the latest from 1970 through 2019. It can be a little shorter if one of the countries has a shorter sample period than this available.

Do not attempt to collect data for 2020 or 2021, as they are affected by the pandemic. Check BEA (US), Eurostat, FRED, IMF, OECD, World Bank, and UK-specific sources. Construct the working age population of each country using U.N. Population Estimates data by summing over the population aged 16 through 65 or 20 through 69 or similar.

Make the following calculations for each of the countries.

a. **Construct a real investment series by calculating**

$$I_t = \frac{NOMI_t}{P_t}$$

where $NOMI_t$ is current price investment and P_t is the GDP fixed price deflator. The latter is the ratio of current price to constant price GDP,

$$P_t = \frac{NOMI_t}{Y_t}$$

Answer: