

The purpose of this assignment is to help you become familiar in working with data from the Penn World Tables (available at <http://datacentre.chass.utoronto.ca/pwt/>). Complete the data-manipulation component of this assignment using Excel spreadsheets.

Work with a total of four countries: the USA, plus any three additional countries you wish to analyze. For all four countries, download the following four series into an Excel spreadsheet:

CONSUMPTION SHARE OF CGDP (unit %)
GOVERNMENT SHARE OF CGDP (unit %)
INVESTMENT SHARE OF CGDP (unit %)
REAL GDP PER CAPITA (CONSTANT PRICE: CHAIN SERIES) (unit \$ CHAIN)

Note: all series are chain-weighted measures.

STEP 1. For each country, construct two additional series: the growth rate of real GDP per capita, and the natural log of real GDP per capita (the ln function).

STEP 2. For each country, calculate and report sample averages of the shares of consumption, government expenditures, and investment, along with the growth rate of real GDP per capita. Report your calculations in a typewritten table. Look for potential patterns in the relationship between these averages across countries, and briefly describe whatever pattern you find. Type up your analysis of the patterns you observed.

STEP 3. Produce three time-series graphs comparing the growth rates of real GDP per capita for the USA with the three additional countries you selected. (I.E., each graph should plot two series: the growth rate of real GDP per capita of the USA, along with the corresponding growth rate of a comparison country.) Based on an analysis of each graph, briefly address the following questions: is there a systematic difference in the levels of the series; is there a systematic relationship in the fluctuations in the series over time (you may wish to calculate correlation coefficients to address this question); and has the level of either series changed systematically over time (you may wish to calculate trend lines for the series to address this question).

STEP 4. Produce three time-series graphs comparing the natural log of real GDP per capita for the USA with the three additional countries you selected (analogous to the graphs produced in STEP 3). Also, plot corresponding linear trend lines for each series, and have Excel report the corresponding trend-line equations. For each graph, compare the slopes and heights of the two reported series. Describe how your comparisons relate to the comparisons made in STEP 3.

STEP 5. Based on the comparisons made in STEPS 3 and 4, how do the countries you selected fall into the general classification of countries laid out in Lucas' analysis of the Industrial Revolution?

Print out the table produced in STEP 2, and each of the graphs produced in STEPS 3 and 4, on separate pages. Also, type up your responses to the questions in STEPS 3 - 5. Staple the whole packet together, and turn in at the beginning of class time on Thursday January 21.