

## ECON 4311 — HOMEWORK 2, SPRING 2024

**DUE DATE: February 19, 2024.**

### INSTRUCTIONS

Please read the whole assignment and the referenced book chapters before starting working on the different exercises. Also, make sure to follow the *general guidelines* provided in *Canvas* for assignment submission.

### BOOK EXERCISES

- Chapter 3: Q1, Q4, Q6, Q8, Q9, Q12, Q14.
- Chapter 4: Q3, Q4, Q6, Q9, Q13, Q15.
- Chapter 5: Q1, Q4, Q7, Q8, Q13.

### DATA WORK

Select randomly 5 Latin American countries. Then use the Cobb-Douglas production function in equation (1) to assess the amount of average annual real GDP growth that comes from capital accumulation, total factor productivity, and from the contribution of labor growth for the periods 1980 – 2000 and 2000 – 2020. Calculate TFP growth as a residual.

$$Y = AK^{1/3}L^{2/3}$$

The variables Y, A, K, and L denote GDP, TFP, the stock of physical capital, and labor, respectively.

1. Document what you are doing and *clearly state any assumptions* you make.
2. How do you calculate average annual growth?
3. Present your results in a figure similar to the one in page 2 and comment on the results.
4. Are there differences between countries?
5. Are there differences between time periods?

*Hint:* [Penn World Tables 10.0](#) is a useful database for this exercise.

**SOFTWARE ADVICE:** The most convenient software to conduct the data work may be Excel for most of you, but you may use any software that allows you to do the work.

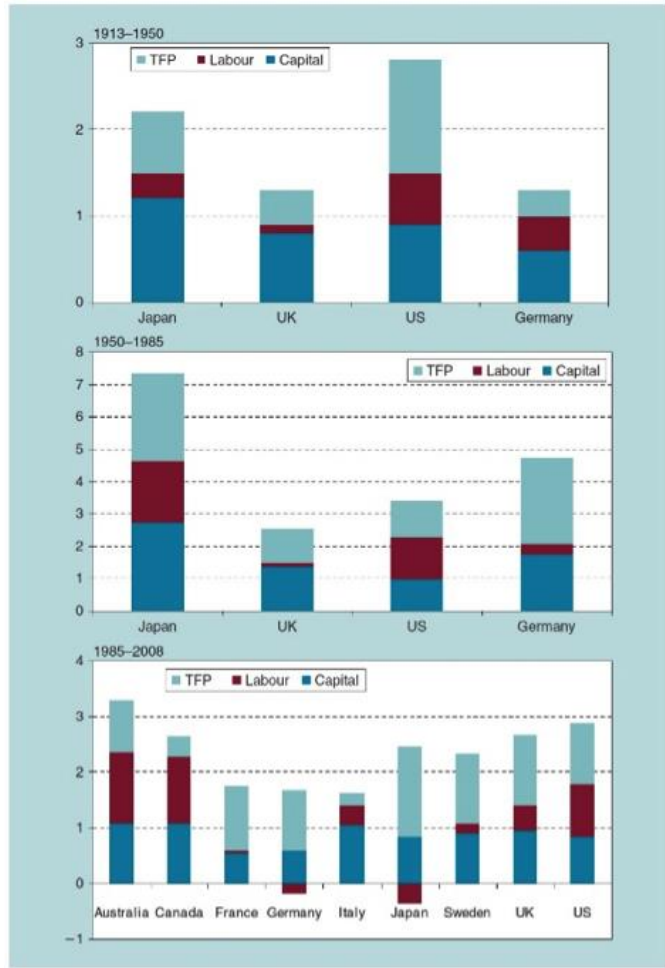


FIGURE 3.17 ● Growth accounting for developed economies. TFP and capital growth have accounted for the largest parts of growth in developed economies. Sources: Crafts, Globalization and Growth in the Twentieth Century, IMF Working Paper 11/44 (2002), OECD and authors' calculations.