Economic Dynamics
Homework 4: Due November 18, 2016, 11:00am
Requirements

Submit your homework *by email to*

    "Economic Dynamics" <dynamics-hw@turnbull.sk.tsukuba.ac.jp>

The `Subject:` should be `FH21051 Homework #4` (in hankaku romaji). Use this class number, even if you are registered according to a different code. Your email must contain your *name* and *student ID number*.

Problems

Note: This homework is due the week *after* the midterm examination. However, probably more homework will be assigned next week and the week after. *Plan your work accordingly.*

1. Recall the introductory macroeconomic identity $Y = C + I$. Explain how to compute s (the savings rate) given data for Y, C, and I.

2. In data for real economies, the identity needs to be generalized to $Y = C + I + G + (X - M)$, where G denotes government expenditure, X exports, and M imports. Discuss how to compute s in this more complex context. (There may be more than one correct answer; give one and explain your idea.)

3. For some recent year, find the values for the following variables and parameters:

   - Y (GDP), C, I, G, $X - M$, K, L, s, d, n.

   of each of the following economies:

   - Japan, U.S., England, Germany, China, (South) Korea

   For each country, it doesn't matter what year, but all the values should be for the same year. Different countries may have different years, but it is better if all the countries use the same year's data.

4. Assume that each country's production function is of the Cobb-Douglas form: $F(K, L) = AK^\alpha L^{1-\alpha}$. Find data (for the same year as part 3) for Japan's capital stock K, labor force L, the income received as compensation to labor (W), and for income that is return to capital (R). Estimate $\alpha = \frac{R}{R+W}$.

5. Using the data above, for each country:

- Display the phase diagram of the Solow model on a graph.

- Estimate the current value of $\dot{k}$.

- Estimate the steady state k^*.

- Estimate the optimal $s*$ using Solow's Golden Rule.

Good data sources include

- the "Keizai Hakusho" of the government,

- the home pages of the Bank of Japan, the Ministry of the Economy, Trade, and Industry,

- various agencies of the United Nations,

- the Bureau of Economic Analysis (BEA) of the United States,

- the Central Intelligence Agency (CIA) of the United States, and

- the Penn World Tables.

The last four sources don't have Japanese pages, but they are well-organized so a little bit of English goes a long way.

Bank of Japan	`http://www.boj.or.jp/statistics/index.htm/`
	`http://www.imes.boj.or.jp/hstat/index.html`
	Also in English:
	`http://www.boj.or.jp/en/statistics/index.htm/`
	`http://www.imes.boj.or.jp/english/hstat/index.html`
Ministry of Economy, Trade and Industry	`http://www.meti.go.jp/statistics/`
	Also in English:
	`http://www.meti.go.jp/english/statistics/`

(continued on next page)

Ministry of Internal Affairs	`http://www.e-stat.go.jp/`
	Also in English:
	(go to the page above and click on English)
United Nations (UNESCO)	`http://www.uis.unesco.org/`
Penn World Tables	`http://www.ggdc.net/pwt`
BEA	`http://bea.gov/`
CIA	`https://www.cia.gov/`