

Assignment 6 (OPTIONAL)

Part A

Short Questions

A1.

Suppose real GDP of an economy is given by following Cobb-Douglas production function:

$$Y_t = B_t K_t^\alpha L_t^{1-\alpha}, \quad 0 < \alpha < 1,$$

where K_t is the aggregate capital stock, L_t is the aggregate number of hours worked, and B_t is the ‘total factor productivity’ measuring the combined productivity of capital and labour. By definition, total working hours are given as:

$$L_t = (1 - u_t) N_t H_t,$$

where u_t is the unemployment rate, N_t is the labor force, and H_t is the average number of working hours per person employed.

- (a) Define the output gap for this economy.
- (b) Explain the production function approach of measuring and decomposing the output gap.

A2.

Explain the method of detrending macro variables using Hodrick-Prescott (HP) filter. Explain the sensitivity of this method to the value of λ . What are the ‘reasonable’ values of λ for detrending monthly, quarterly, and annual data?

A3.

- (a) Explain the conflicting evidence on the relationship between the average propensity to consume and disposable income found in microeconomic cross-section data and in macroeconomic time series data.
- (b) Explain how the theory of consumption presented in Chapter 16 of the textbook helps to resolve the apparent inconsistency between the two types of evidence.

Part B

Problem Solving Questions

Read each part of the question very carefully. Show all the steps of your calculations to get full marks.

B1.

Exercise 2 of Chapter 16 of the textbook: Part 1, 2, 3 and 4.