

Macroeconomics: Assignment 3

(Deadline: at the beginning of Lecture 4)

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1. Readings: Look at the newspapers and magazines for the past few weeks. Are there any discussions about the international capital flow, exchange rate or unemployment rate? How do you interpret these discussions?
2. Consider an economy described by the following equations:

$$Y = C + I + G + NX$$

$$Y = 5000$$

$$G = 1000$$

$$T = 1000$$

$$C = 250 + 0.75(Y - T)$$

$$I = 1000 - 50r$$

$$NX = 500 - 500\epsilon$$

$$r = r^* = 5$$

- a) In this economy, solve for national saving, investment, the trade balance, and the equilibrium exchange rate.
 - b) Suppose now that G rises to 1250. Solve for national saving, investment, the trade balance and the equilibrium exchange rate. Explain what you find.
 - c) Now suppose that the world interest rate rises from 5 to 10 percent. G is again 1000. Solve for the national saving, investment, the trade balance and the equilibrium exchange rate, Explain what you find.
3. Consider an economy with the following Cobb-Douglas production function:

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

The economy has 1000 units of capital and a labor force of 1000 workers.

- a) Derive the equation describing labor demand in this economy as a function of the real wage and the capital stock. (Hint: review the first lecture.)
- b) If the real wage can adjust to equilibrate labor supply and labor demand, what is the real wage? In this equilibrium, what are employment, output, and the total amount earned by workers?

- c) Now suppose that Congress, concerned about the welfare of the working class, passes a law requiring firms to pay workers a real wage of one unit of output. How does this wage compare to the equilibrium wage?
- d) Congress cannot dictate how many workers hire at the mandated wage. Given this fact, what are the effects of this law? Specifically, what happens to employment, output, and the total amount earned by workers?
- e) Will the Congress succeed in its goal of helping the working class? Explain.
- f) Do you think that this analysis provides a good way of thinking about a minimum wage level? Why or why not?