

Intermediate Macroeconomics I, ECON 2102 A

Summer 2014

Homework assignment #2

1. Mundell-Fleming model exercise (50%)

A Mundell-Fleming economy with a floating exchange rate is characterized in the short-run by the following equations:

$$C=80 + 0.6(Y-T); T=100 ; I=500 - 100r^*; G=100; NX = 130 - 150e$$

$$L(r^*,Y)=0.75Y - 50r^*$$

The world interest rate is $r^*=2.5\%$, the price level is fixed at $P=1$, and the amount of nominal money is $M=475$.

- a. Derive the IS^* curve, the LM^* curve, and the AD curve and plot them in a two-diagram (IS^*)-(LM^*) and (AD)-(AS) graphical display.
- b. Find the equilibrium values of income (Y), the exchange rate (e), consumption (C), investment (I), and net exports (NX).
- c. Design a monetary expansion that increases the value of equilibrium income to reach $Y=900$. Does it bring an appreciation or a depreciation of domestic currency? Why? Find the numerical effects on e , C , I and NX .
- d. Show graphically both the initial IS^* - LM^* and (AD)-(AS) equilibria reached in b) and the new equilibria obtained in c).

2. Solow model exercise (50%)

An economy described by the Solow growth model has the following production function:

$$y=k^{0.5}$$

(i.e., per-worker output is the square root of per-worker capital), a constant saving rate of 25%, an annual rate of capital depreciation at 8% and a population growth rate of 2% per year. It is known that the current stock of per-worker capital is equal to $k_0=4$.

- a. Find the amounts of per-worker capital, output, and consumption for the next year (k_1 , y_1 and c_1)
- b. Find the amounts of per-worker capital, output and consumption in steady state.
- c. What is it going to occur with per-worker capital, output, and consumption from this year until the steady-state equilibrium is reached? Discuss the dynamic evolution of these variables and provide a graphical display to illustrate your answer.
- d. What is it going to occur with the rates of growth of per-worker capital, output, and consumption from this year until the steady-state equilibrium is reached? Discuss the dynamic evolution of these variables and provide a graphical display to illustrate your answer.
- e. What is it going to occur with the rates of growth of total capital, output, and consumption from this year until the steady-state equilibrium is reached? Discuss the dynamic evolution of these variables and provide a graphical display to illustrate your answer.

Due on June 16th (homeworks should be handed in to the instructor at the beginning of class)