

Second challenge
Eco 212: Spring 2006

The challenge is closed book. Good luck! The following equations may be useful.

$$\frac{M}{MB} = \frac{k+1}{k+rrr}, \quad MV = PY, \quad \text{money multiplier} = \frac{k+1}{k+rrr}, \quad \Delta M = \text{multiplier } \Delta MB$$

$$k = \frac{CU}{D}, \quad BR = rrrD, \quad M = CU + D, \quad MB = CU + BR, \quad M = (k+1)D$$

$$NFI = \text{outflows} - \text{inflows} = X - M = \text{net exports}, \quad S = I + X - M, \quad e = \frac{P \cdot E}{P_f}$$

$$\text{growth rate } Y = \frac{1}{3} \text{ growth rate } K + \frac{2}{3} \text{ growth rate, } N + g_T$$

$$\text{growth rate, } Y/N = \frac{1}{3} \text{ growth rate, } K/N + g_T$$

$$\text{contribution, } T = \frac{g_T}{\text{growth rate, } Y/N}$$

$$\text{contribution, } K/N = \frac{\frac{1}{3} \cdot \text{growth rate, } K/N}{\text{growth rate, } Y/N}$$

$$MPC = b = \frac{\Delta C}{\Delta Y}, \quad C = a + bY, \quad C = a + bY^D, \quad Y^D = Y - T + TR$$

$$Y = \frac{1}{1-b} (a + I + G + X - M)$$

Short answer questions (1-2 sentences per part)

Question 1 (15 points).

- AIDS epidemic in Africa.
- A tax credit for investment.
- The government funds a national opera company.
- The government of Argentina removes or taxes dollars held in bank savings accounts.
- Job training programs.

For EACH policy:

- a. state whether the effect on growth is positive, negative, or neutral.
- b. explain how the government policy affects capital improving embodied technical change, labor improving technical change, disembodied technical change, or none of the above.

Question 2 (10 points).

According to the catch-up hypothesis, which countries should grow faster, poor countries or rich countries? Explain why. Give one example where the catch-up hypothesis seems to hold in the data.

Question 3 (10 points).

Suppose the price of gold is 3000 Yen per ounce in Japan. Suppose further that nominal exchange rate is equal to 5.

- a. Assuming gold is identical in the US and Japan, what would you expect the dollar price of gold in the US to be?
- b. If the actual price of gold is \$400 per ounce in the US, is the dollar over or under valued relative to the yen? Explain.

Question 4 (5 points).

Explain how an increase in capital inflows affects the US trade deficit.

Longer Questions

Question 5 (20 points).

In the late 1990s Russia's tax revenues fell dramatically, and the government was unable to borrow money, as investors were not confident they would be repaid. So the Russian government began to pay government workers and other expenses with newly printed currency (Rubles). The money supply increased dramatically.

- What happened to inflation? Carefully explain your reasoning.
- Give one cost of inflation.
- Show graphically the effect in the Russian Foreign Exchange Market.
- What happens to the value of the Ruble?

Question 6 (15 points).

Suppose an increase in taxes.

- Graphically show the effect on the spending balance graph. Explain each step.
- What happens to consumption, spending, and income?

Question 7 (25 points).

Suppose the economy has the following monetary situation:

- M1: \$1000.
 - required reserve ratio = $1/4$.
 - currency to deposit ratio = $1/4$.
- What is the money multiplier?
 - What is the monetary base?
 - Calculate the currency held by the public, bank reserves, and the value of all checking accounts.
 - Suppose the FED *sells* \$100 worth of treasury bills. What is the change in the money supply?
 - Which method of changing the money supply does the FED prefer, open market operations or changing the discount rate? Explain.