Nanyang Technological University
School of Social Sciences

HE2002 Macroeconomics II AY23-24 SEMESTER 2

Tutorial 3

1. **Chapter 5, Q3. The response of the economy to fiscal policy**

   (a) Use an IS-LM diagram to show the effects on output of a decrease in government spending. Can you tell what happens to investment? Why?

   Now consider the following IS-LM model:

$$C = c_0 + c_1(Y - T)$$

$$I = b_0 + b_1 Y - b_2 i$$

$$Z = C + I + G$$

$$i = \bar{i}$$

   (b) Solve for equilibrium output when interest rate is $\bar{i}$. Assume $c_1 + b_1 < 1$.

   (c) Solve for equilibrium level of investment.

   (d) Let's go behind the scenes in the money market. Chapter 4 introduced equations that describe equilibrium in the money market. Let's write the equation characterizing the equilibrium as: $M/P = d_1 Y - d_2 i$. Solve for the equilibrium level of the real money supply when $i = \bar{i}$. How does the real money supply vary with government spending?

2. **Chapter 5, Q5.**

   Considering the following numerical example of the IS-LM model:

$$C = 100 + 0.3Y_D$$

$$I = 150 + 0.2Y - 1000i$$

$$G = 200$$

$$T = 100$$

$$i = 0.03$$

   (a) Derive the IS relation. (Hint: You want an equation with Y on the left side and everything else on the right.)

   (b) The central bank sets an interest rate of 3%. How is that decision represented in the equations?

   (c) What is the level of real money supply when the interest rate is 3%? Use the expression:

$$(M/P) = 2Y - 4000i$$

(d) Solve for the equilibrium values of C and I, and verify the value you obtained for Y by adding C, I and G.

(e) Now suppose that the central bank increases money supply to 1500. How does this change the LM curve? Solve for Y, I and C, and describe in words the effects of an expansionary money policy.

(f) Return to the initial situation in which the interest rate set by the central bank is 3%. Suppose that government spending increases to G=300. Summarize the effects of an expansionary fiscal policy on Y, I and C. What is the effect of the expansionary fiscal policy on the real money supply?