Nanyang Technological University
School of Social Sciences

HE2002 Macroeconomics II AY23-24 SEMESTER 2

Tutorial 1

1. **Chapter 3, Q2** Suppose that an economy is characterized by the following behavioral equations (in billions of euros):

$$C = 480 + 0.5Y_D$$

$$I = 110$$

$$T = 70$$

$$G = 250$$

Solve for the following variables.

(a) Equilibrium GDP (Y)

(b) Disposable income (Y_D)

(c) Consumption spending (C)

2. **Chapter 3, Q3** Use the economy described in Chapter 3, Q2.

(a) Compute private saving, public saving, and investment spending.

(b) Solve for equilibrium output. Compute total demand. Explain how it affects production.

(c) Assume that G is now equal to \$300 billion. Solve for equilibrium output, consumption, and disposable income. Why do you think the government will decide to expand fiscal spending?

3. **Chapter 3, Q4 The balanced budget multiplier**

For both political and macroeconomic reasons, governments are often reluctant to run budget deficits. Here, we examine whether policy changes in G and T that maintain a balanced budget are macroeconomically neutral. Put another way, we examine whether it is possible to affect output through changes in G and T so that the government budget remains balanced.

Start from

$$Y = \frac{1}{1 - c_1}[c_0 + \bar{I} + G - c_1 T]$$

(a) By how much does Y increase when G increases by one unit?

(b) By how much does Y decrease when T increases by one unit?

(c) Why are your answers to parts a and b different?

Suppose that the economy starts with a balanced budget: $G = T$. If the increase in G is equal to the increase in T, then the budget remains in balance. Let us now compute the balanced budget multiplier.

(d) Suppose that G and T increase by one unit each. Using your answers to a and b, what is the change in equilibrium GDP? Are balanced budget changes in G and T macroeconomically neutral?

(e) How does the specific value of the propensity to consume affect your answer to part d? Why?

4. **Chapter 3, Q5 Automatic stabilizers**

In this chapter we have assumed that the fiscal policy variables G and T are independent of the level of income. In the real world, however, this is not the case. Taxes typically depend on the level of income and so tend to be higher when income is higher. In this problem, we examine how this automatic response of taxes can help reduce the impact of changes in autonomous spending on output.

Consider the following behavioral equations:

$$C = c_0 + c_1 Y_D$$

$$T = t_0 + t_1 Y$$

$$Y_D = Y - T$$

G and I are both constant. Assume that t_1 is between 0 and 1.

(a) Solve for equilibrium output.

(b) What is the multiplier? Does the economy respond more to changes in autonomous spending when t_1 is 0 or when t_1 is positive? Explain.

(c) Why is fiscal policy in this case called an automatic stabilizer?