EC2010 Intermediate Economics
Macroeconomics Module
Michaelmas Term 2007

PROBLEM SET 1

A complete solution to problem 1 will be posted on the webpage for the course.
Problem 2 will be discussed in tutorials in week 2.

Problem 1 (Blanchard, chp. 3)

For both political and macroeconomic reasons governments are often reluctant to run budget deficits. Here, we examine whether policy changes in government spending and taxes that maintain a balanced budget are macroeconomically neutral. In other words, we examine whether it is possible to affect output through changes in government spending and taxes so that the government budget remains balanced.

We will be assuming that investment is exogenous in this problem. The goods market equilibrium condition is written as

(1) $Y = c_0 + c_1(Y - T) + I + G$

where both I and G are constant.

(a) By how much does output increase when government spending increases by one unit?

(b) By how much does output decrease when taxes increase by one unit?

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

Suppose now that the economy starts with a balanced budget, such that G = T. If the increase in G is equal to the increase in T, then the budget remains in balance.

(d) Suppose that both G and T increase by one unit. Using your answers from parts (a) and (b), what is the change in the equilibrium level of output? 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 (d)? Why?

Problem 2

This problem focuses on the derivation of the slopes of the IS curve and of the LM curve. It also solves the model analytically, which amounts to solving a system of two equations with two unknowns. The two unknown (endogenous) variables are Y and i. The goods market equilibrium condition is given by

(1) $Y = c_0 + c_1(Y - T) + a_0 - a_1 i + G$

while the money market equilibrium condition is given by

(2) $\frac{M}{P} = b_0 + b_1 Y - b_2 i$

(a) Compute the slope of the IS curve and the slope of the LM curve.

(b) Use both equilibrium conditions to derive solutions for Y and i as functions of the model parameters and exogenous variables.

(c) What is the effect of an increase in government spending on the level of output and the interest rate? Discuss why there would be no crowding-out effect if the interest-elasticity of money demand is infinite.