**EC2010 Intermediate Economics**
**Macroeconomics Module**
**Michaelmas Term 2007**

# PROBLEM SET 2

*A complete solution to problems 2 and 3 will be posted on the webpage for the course.*
*Problem 1 will be discussed in tutorials in week 3.*

**Problem 1**

This exercise focuses on the effectiveness of macroeconomic policy in the IS-LM model. The effectiveness of a policy is defined as the magnitude of its effect on the level of output.

(a) Draw the IS-LM diagram (make sure to always label the axes). Suppose that government spending increases. Show graphically the effect of such an exogenous shock on the level of output and the interest rate.

(b) Draw another IS-LM diagram with one IS curve and two LM curves, one that is relatively flat, and another one that is relatively steep. Suppose that government spending increases. Show graphically that the effectiveness of fiscal policy is greater, the flatter the LM curve is.

(c) Discuss the economic intuition behind the result in part (b).

(d) What will be the multiplier of government spending (i) when investment is not sensitive to the interest rate; (ii) when investment is infinitely sensitive to the interest rate?

**Problem 2** (Blanchard, chp. 5)

Consider the following IS-LM model:

$C = 200 + 0.25 Y_D$
$I = 150 + 0.25 Y - 1000 i$
$G = 250$
$T = 200$
$(M/P)^d = 2Y - 8000 i$
$(M/P)^s = 1600$

(a) Derive the IS relation and the LM relation.

(b) Solve for equilibrium output and the equilibrium interest rate.

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

(d) Suppose that the money supply increase to $(M/P)^s = 1840$. Solve for Y, i, C, and I, and describe in words the effects of an expansionary monetary policy.

(e) Set $(M/P)^s$ equal to its initial value of 1600. Suppose now that government spending increases to $G = 400$. Summarize the effects of an expansionary fiscal policy on Y, i and C.

**Problem 3** (Blanchard, chp. 4)

A bond promises to pay $100 in one year.

(a) What is the interest rate on the bond if its price today is $75?

(b) What is the relation between the price of the bond and the interest rate?

(c) If the interest rate is 8%, what is the price of the bond today?