Professor Christiano
311, Spring 2000

First Midterm

IMPORTANT: read the following notes

- ² You may not use calculators, notes, or aids of any kind.

- ² Please feel free to ask the proctor questions if the wording of a question is unclear.

- ² A total of 100 points is possible, with the distribution by question indicated in parentheses.

- ² Each question should be in a separate blue book.

- ² Indicate on each blue book which TA section you are in.

- ² Explain your answers carefully in clear English. Supplement what you say with liberal use of diagrams.

- ² Write neatly and label all diagrams. We cannot give you credit if we cannot read your answer.

1. (25) Consider the following Keynesian Cross model:

$$C^d = c_0 + c_1 (Y - T)$$
$$G^d = \overline{G}$$
$$T = \overline{T}$$
$$I^d = \overline{I}$$

where c_0, c_1, $\overline{G}$, $\overline{T}$, $\overline{T}$ are positive numbers, and c_1 is smaller than 1. Suppose households decide to decrease saving, so that c_0 rises.

(a) Describe carefully what happens in the goods market, as the economy moves from an initial equilibrium to a new equilibrium. Be sure to explain what happens to unintended inventory accumulation, output, consumption and saving.

(b) Why is the jump in equilibrium output greater than the jump in c_0 itself? Explain.

(c) It turns out that in the new equilibrium, the amount of saving is the same as it was in the old equilibrium. Explain.

(d) Throughout the transition from the old equilibrium to the new equilibrium, actual consumption plus actual investment plus actual government spending exactly equals actual output. Explain why this is so.

2. (25) The IS curve is the combinations of i and Y; where the goods market clears, when planned spending is as in the Keynesian Cross model, modi¯ed so that planned investment is given by

$$I = I^1 - bi; \ b > 0:$$

(a) Explain why investment is a decreasing function of the rate of interest.

(b) Draw the IS curve in a diagram with i on the vertical axis and Y on the horizontal axis. Why is the curve downward sloping? What is the situation in the goods market at points above the IS curve. What is the situation at points below the IS curve? Explain.

(c) Suppose b is higher. What happens to the slope of the IS curve? Explain.

3. (25) Consider again the Keynesian Cross Model in question 1.

   (a) Assume that the Government has a surplus $\overline{S} = \overline{T} \textormdash \overline{G} > 0$. The Government decides to use the surplus to increase the equilibrium level of output. It can do so either by increasing public spending, or by reducing taxes. Which option delivers the best result in terms of equilibrium output? Explain.

   (b) Assume that the Government decides to adopt a different fiscal policy: increase taxes and government spending by the same amount, leaving the surplus unaffected. Discuss how this change in fiscal policy affects the equilibrium level of output.

4. (25) Suppose this is the money demand equation:

$$M^d = P \pounds (Y + L(i));$$

where

$$L(i) = \overline{L} \textormdash L_1 i; \quad L_1 > 0:$$

Suppose money demand is very responsive to the interest rate, i.e., L_1 is large.

   (a) Write out the algebraic representation of the LM curve. Explain your algebra.

   (b) Explain, in words, why the LM curve becomes flatter, the larger is L_1 (you should supplement your explanation with graphs).

   (c) Is monetary policy more or less effective when money demand responds more strongly to the interest rate? Explain. (again, you may want to use graphs)