

Professor Christiano
C-11, Winter 1999

Answers, First Midterm, for TA's

1. Question 1. The demand for money is an increasing function of income because income is related to the amount of transactions a person does and money is convenient for making transactions. The demand for money is a decreasing function of the interest rate because the higher is the rate of interest, the more earnings are foregone by holding money rather than bonds.
2. Question 2. In deciding how much of their wealth to hold in bonds and money, households face a basic constraint, namely, that money and bonds must equal total financial wealth. Thus, $W = M^d + B^d$. Since this holds for an individual household, this must hold for the society as a whole too. But, total money plus total bonds equals total financial wealth, i.e., $W = B^s + M^s$. Subtract the two equations and note that if $M^d = M^s$, then $B^d = B^s$. Thus, the money market is in equilibrium if and only if the bond market is too. (See p. 82 in the text for an elaboration on this discussion.)
3. Question 3, part a and b. The planned spending curve rises. This makes equilibrium output rise by the increase in c_0 times the multiplier. We assume that production decisions are made at the beginning of the period. Then, during the period production is carried out, people are hired, salaries are paid and goods are sold. There are at least two positions one can take on dynamics. In one, there is a protracted fall in inventory investment along the dynamic adjustment path. In this one, producers increase production in the current period over the previous period by the observed fall in unintended inventory investment in the previous period. In the other, there is only a temporary fall in inventory investment, in the period when c_0 actually jumps. In this case, firms understand the nature of the shock and forecast the impact on Y accurately. They simply set production to what it is in the new equilibrium. It takes only one period to jump to the new equilibrium under this scenario.

Question 1, part c. The saving function shifts down. At every level of income, people want to save less. The new level of saving is the same as the old one, however, since the rise in income along the new, lower, saving function generates a rise in desired saving. The rise in income stops when desired saving rises to the point where it equals desired investment plus the government deficit. The latter haven't changed, and so the former can't have either.

4. Question 4.

- (a) Whatever the shock was, it was something that shifted the IS curve to the right, since output and interest rates both rose. A shift in the LM curve would have caused i and Y to move in opposite directions. This rules out the money supply. Turning to the IS curve, it could not have been consumer confidence (c_0 up), because that would have crowded out some investment. It could not have been a rise in \bar{G} for the same reason. The only thing it could have been is a rise in \bar{I} , business confidence.
- (b) Note first that the IS curve gets flatter. To see this, go back to the goods market diagram. Start at some equilibrium. Now raise Y . What has to be done to the interest rate to make that given higher value of Y an equilibrium? The planned spending curve has to be shifted up by a given amount that is not a function of g . To bring about that rise, a fall in the interest rate is required. The larger is g , the smaller is the required fall in i . Thus, the IS curve is flatter. Now, an increase in M^s shifts the LM curve right. The flatter is the IS curve, the more will be the shift in equilibrium output. Thus, the bigger is g , the bigger the impact of an increase in M on output. The intuition for this is that when M is increased, driving i down, more components of planned spending are stimulated.