Economics 104 **Prof. Steve Fazzari**
Homework Problems: Part 5 **Spring, 2013**

Due: Wednesday, April 10

1. One could easily find either of the following explanations in the press for strong U.S. economic performance during the 1990s:

   A. Low unemployment and a sizzling stock market have made American consumers feel wealthy and secure. Therefore they have raised their spending to unprecedented levels, which has driven real growth rates to new heights.

   B. The revolution in computing and telecommunication technologies has changed the way that things are made in this country. The result is the fastest growth of labor productivity since the 1960s.

   Which one of these interpretations is most obviously consistent with Keynesian macroeconomic theory? Briefly explain your answer.

2. Many economists argue that Americans need to increase their saving. Using a graphical version of the Keynesian Cross model presented in class, show the effect of an increase in saving on equilibrium output. Explain why any curve shifts. Carefully describe the adjustment process that the economy goes through as it moves from the old equilibrium to the new one. What happens to employment? What can you conclude from this model about government policies designed to increase saving?

3. What is wrong with the following statement?

   According to the Keynesian Cross model, higher aggregate demand raises output and employment. Therefore, since government spending is part of aggregate demand, higher government spending always raises output.

4. Suppose that the economy is accurately described by the equations of the following "Keynesian Cross" model. The variable definitions are the same as the ones used in the lecture notes (see the notes for the discussion of the ACC "accelerator" effect on investment). This model is somewhat different from the ones described in class, however, because taxes are "endogenous." That is, taxes rise as income rises. The tax rate (lower case "t" in the equations below) describes the amount that taxes rise for a one dollar increase in income:

$$C = a + (MPC)(Y - t\,Y)$$

$$I = b + (ACC)\,Y$$

$$Y = AD = C + I + G + Ex - Im$$

a) On a Keynesian Cross diagram, show the effect of an increase of the tax rate ("t") on the aggregate demand curve and on equilibrium output. (Hint: Think about how the change in the tax rate affects the *slope* of the aggregate demand curve.)

b) Solve the model for equilibrium output, as done in class. Show the algebraic steps in your work.

c) How does an increase in the tax rate ("t") affect the size of the multiplier? Give a brief explanation of the economic intuition for this effect explaining why the multiplier changes.

5. Explain why economists usually assume that imports depend positively on domestic income. Integrate the dependence of imports on income into the algebraic version of the Keynesian Cross model (you do not need to have an "accelerator" effect on investment or endogenous taxes for this question; just use a simple Keynesian Cross model as presented in class, but with imports that depend on income). Solve for equilibrium output. How does the link between imports and income affect the value of the multiplier? What is the intuition for this result?

6. Answer the questions below about an economy that is initially operating below potential output. Also assume that the economy has a "balanced budget" restriction in its constitution that prevents deficit spending in any situation.

a) Why is it a problem for the economy to have an equilibrium level of output that is below the potential level? Mention the relevance of the "more is better" assumption in your answer.

b) Suppose the economy is described by the following simple Keynesian Cross model in algebraic form:

$$Y = AD = C + I + G + Ex - Im$$

$$C = a + MPC\ (Y - T)$$

Assume that I, G, Ex, Im, and T are all exogenous. (Note that there is no "accelerator effect" in this model and unlike one of the problems above, taxes are independent of the level of income.) Solve the model to obtain an algebraic expression for equilibrium output in terms of the exogenous variables.

c) Using your solution from part b) show that it is possible to raise equilibrium output using fiscal policy in this economy *even with the balanced budget restriction.* What kind of fiscal policy would you recommend? Why does it work? (Hint: The balanced budget restriction implies that any change in government spending must be matched by an equivalent change in taxes.)