Econ 1: Spring 2012: Problem Set 7

Due at the first section after the April 16, 2012 Lecture

1. Inequality: suppose that consumers have the utility function $C_s^{\theta} \times C_v^{(1-\theta)}$, $\theta=0.5$, where C_s is purchases of sporting equipment and C_v is purchases of video games. Video games can only be produced by people with college degrees. Sporting equipment can be produced by anybody.

a. Suppose that 40% of the labor force have college degrees. What multiple of average income will the income of the college-educated be? What fraction of average income will the income of the non-college-educated be?

b. suppose that technological improvement in video games shifts the theta in the production function from 0.5 to 0.6. What happens to the income o the college-educated? What happens to the income of the non-college-educated?

c. Suppose you were given the job of persuading a bunch of non-college-educated that they should vote for higher taxes to provide bigger subsidies for higher education. What would you say?

2. Price Indexes: suppose Channing T. has the utility function $C_s^{\theta} \times C_v^{(1-\theta)}$, $\theta=0.75$, where C_s is purchases of sporting equipment and C_v is purchases of video games. Suppose each item of sporting equipment costs $100, each videogame costs $25, and Channing T. has an income of $800.

a. What does Channing T. choose to purchase and consume?

b. Suppose that an evil cartel raises the price of video games to 16 times their original price. If Channing's income remains the same, what does he decide to purchase and consume?

c. Suppose that as the price of video games rises, the price of sporting equipment falls. By how much would the price of sporting equipment have to decline in order to make Channing as happy after as he was before the price changes? What is his consumption basket after the price changes?

3. Price Indexes: consider the two Channing T. consumption baskets, the change in video game prices, and the change in sporting goods prices you calculated in (2c): the "before" basket of (2a), which we call B, and the "after" basket of (2c), which we will call "A".

a. By what percentage did the price of basket "B" change?

b. Would a price index based on this basket show inflation or deflation?

c. By what percentage did the price of basket "A" change?

d. Would a price index based on this basket show inflation or deflation?

e. Reconcile your answers. Was there inflation or deflation?

4. Keynesian Cross: Consider the simple Keynesian closed-economy income-expenditure model; Y=C+I+G. The idea is that if production and national income Y is less than or greater than spending C+I+G, production and income will rise or fall until they are equal. Suppose C = 7.5 + 0.5Y

a. G=3, I=4.5: what is Y?

b. I falls by 0.5: what happens to Y?

c. I recovers and rises by 0.3, but G falls by 0.3: what happens to Y?

d. Recognize that there are imports: change model to: Y=C+I+G+GX-IM; GX=2.5, IM=.16667Y, G=3, I=4.5: where GX are gross exports, IM are imports, and the consumption function is the same as (a). What is Y?

e. I falls by 0.5 and GX falls by 0.1: what happens to Y?

f. I recovers and rises by 0.2, X recovers and rises by 0.1, but G falls by 0.3: what happens to Y?

5. Income Expenditure: before John Maynard Keynes set out his income-expenditure model in the late 19th century, Swedish economist Knut Wicksell and his Swedish School successors set out the flow-of-funds model. In it, if savings S were greater than private investment I plus government borrowing to finance its deficit G-T, then people would pull money out of circulation and stuff it in their mattresses as extra savings and production and incomes would fall. By contrast, if $S < I + (G-T)$, businesses would spend down their cash reserves to finance investment projects they could not fund by borrowing, the economy would be flooded with liquidity, and spending and production would rise.

The Wicksellian algebra is thus:

$S = I + (G-T)$: (flow-of-funds equilibrium condition). $G=3$, $I=4.5$. $T = 2.5$ (taxes).
$S = 0.5Y - T - 7.5$ (savings equation)

a. $G=3$, $I=4.5$: what is Y if the economy is in equilibrium?

b. I falls by 0.5: how does the equilibrium value of Y shift?

c. I recovers and rises by 0.3, but G falls by 0.3: how does the equilibrium value of Y shift?

d. Compare your answers to parts a-c to your answers to parts a-c of (6). What similarities do you note? What differences? How do you explain the patterns?

6. On January 13, 2009, University of Chicago Business School Professor Eugene Fama wrote:

"[S]timulus plans are not a cure.... In a 'fiscal stimulus,' the government borrows and spends the money.... [G]overnment infrastructure investments must be financed -- more government debt. The new government debt absorbs private and corporate savings, which means private investment goes down by the same amount.... The government gives with one hand but takes them back with the other, with no net effect on current incomes..."

Write down how you would explain to Professor Fama that this is simply the argument Jean-Baptiste Say made in 1803 (and that he recanted in 1829), and the argument that John Stuart Mill identified the flaw in in 1829. What is the flaw?