Problem Set #2
ECN 151A
Summer 2017
Prof. Eschker

Questions 1-4 are graded and due Monday, July 10 at the beginning of class. No late homeworks will be accepted.

Question 5 is a practice problem and is not graded. Do not hand it in. This material will be covered the last lecture before the exam.

1. Yu is a full time student and does not work. Suppose that Yu gets two letters. The first letter tells Yu that the government found an error on Yu's tax return, and that Yu must pay $5,000 this year. The second letter tells Yu that if she were to take a job at UCD, the campus would pay her payroll taxes for her (and thus Yu's after tax wage rises). Which letter is likely to make Yu start working? Explain.

2. a. Suppose that Hezekiah has no non-labor income. When the marginal income tax rate goes down, Hezekiah works less hours. Does his income effect or substitution effect dominate?

b. Draw his budget constraint before and after the tax decrease, and decompose the change in hours worked into an income and substitution effects.

3. Consider a negative income tax whereby everyone is given $30 subsidy each day and the payroll tax rate is 40 percent. Before the negative income tax, the payroll tax rate was 20 percent and there was no subsidy. Suppose a person who can work up to 24 hours each day at a pretax wage of $15 per hour.

a. What is the equation of the old and new budget constraints?

b. On the same graph, draw the worker's original budget constraint and the new budget constraint with the negative income tax.

c. At what leisure and consumption level do the two budget lines intersect? What is the corresponding level of hours worked?

d. Suppose Uma worked 11 hours before the negative income tax. With the new negative income tax, will Uma work more or less? Explain. (hint: did Uma take more or less leisure than the amount of leisure at the intersection of the two budget constraints?)

e. Assume that under the negative income tax Uma starts to the left of the intersection of the two budget lines. Will the utility of Uma rise under the negative income tax?

4. a. Suppose the labor supply curve is given by $L^s = 40 - w^{1/3}$ where L^s is hours worked. At a wage of 27, how many hours of labor are supplied?

b. Using calculus, calculate the point elasticity of labor supply at wage=27.

c. At wage = 27, does the income or substitution effect dominate?

<u>The following question is a practice problem and is NOT graded. Do not turn it in. This material will be covered the last lecture before the exam.</u>

5. a. Costa 2000 says that if one knows the elasticity of labor supply, then one can tell whether supply or demand shifts are more important in explaining the increase in the number of women working over the Twentieth Century.

Suppose that demand for female labor increases and that demand increases from point A to B and thus shifts from demand(1) to demand(2). Will this demand shift lead to a larger increase in the equilibrium number of workers hired if supply is elastic or inelastic?

b. Suppose instead that demand is constant at demand(1) but that supply increases from point A to B and thus shifts rightward. Will an elastic or inelastic supply curve lead to a greater equilibrium quantity of workers?

c. What are “cohort effects” regarding women’s labor force participation rate that Costa talks about on page 116?