

**Econ 131**  
**Spring 2015**  
**Emmanuel Saez**

**Midterm**

**March 18**

**Closed book/notes exam. No computer, calculator, or any electronic device allowed. Only pen and paper.**

**1. True False Statements/Questions (15 points, 2.5 points per question)**

Explain your answer fully based on what was discussed in class (no more than 10 lines per question), since all the credit is based on the explanation.

a) Empirically, married women with high wage rate work more than married women with low wage rates. This implies that the labor supply of married women is very elastic with respect to their net-of-tax wage rate.

b) The US is land of opportunity where even kids growing up in low income families can succeed economically.

c) If bequests are mostly accidental, then taxing inheritances is desirable.

d) Pre-tax top 1% income shares in the US are highly negatively correlated with the individual income top tax rate, hence top tax rates should be low.

e) The majority of the US public is opposed to the estate tax in large part because the public does not know that only the very rich have to pay the estate tax.

f) Explain the key difference between an S-corporation and a C-corporation and how this difference can be exploited to evaluate the effect of the 2003 dividend tax cut on corporate investment decisions.

**2. Exercise (15 points)**

Assume that individuals have the same utility function over consumption and *labor* given by:

$$U(c, l) = c - \frac{l^{k+1}}{k+1}$$

where  $c$  represents consumption and  $l$  represents hours of *labor* and  $k$  is a given parameter.

Assume also that the only income that individuals have is from labor income, that the hourly wage rate is given by  $w$ .

a) Write the budget constraint faced by the individual.

b) Set up the maximization problem of this individual and solve for the optimal labor supply function.

c) Assume now that the individual is being charged a tax on earnings at the constant tax rate  $\tau$ . That means that if the individual earns  $z$ , she has to pay  $\tau \cdot z$  in taxes. Solve for the labor supply function as a function of  $\tau$

d) Calculate the labor supply elasticity with respect to  $1 - \tau$ .

e) Is the substitution effect caused by  $\tau$  positive, negative or zero? Explain.

f) Is the income effect caused by  $\tau$  positive, negative or zero? Explain.

**Assume now that the government is trying to encourage labor supply. Starting from a situation with no tax at all, the government implements the following tax schedule:**

Any gross income between \$0 and \$10,000 is **subsidized** at a rate of 25%

Any gross income between \$10,000 and \$20,000 is taxed at a rate of 0%

Any gross income between \$20,000 and \$25,000 is taxed at a rate of 50%

Any gross income above \$25,000 is being taxed at a rate of 0%

g) Graph the budget set in the standard x-axis earnings and y-axis consumption plan. Make sure you label the axis and label every point where the slope changes by indicating its x and y ordinates.

h) For every tax/subsidy bracket, determine the sign of the substitution effect, income effect and total effect compared to the baseline with no tax at all. Can you be even more specific when the utility function is given by  $U(c, l) = c - \frac{l^{k+1}}{k+1}$  as above?

i) Assume you are trying to assess the effect of such a tax schedule on the labor supply of individuals. Propose an empirical method that would allow you to answer your question. Explain the method and refer to a paper using this method.