

Econ 131
Spring 2017
Emmanuel Saez

Problem Set 2

DUE DATE: March 8

Student Name:

Student ID:

GSI Name:

- **You must submit your solutions using this template.**
- **Although you may work in groups**, each student must submit individual sets of solutions. You must note the names other students that you worked with. Write their names here:

1. Essay

Take a look at Trump's current tax plan at
<https://assets.donaldjtrump.com/trump-tax-reform.pdf>.

Based on what you learned from the lecture Taxes and Reported Income, explain how the Trump tax plan is going to affect how the rich are going to report their income. In particular, will it induce the rich to postpone realizing their incomes until 2017 and 2018 (income retiming)? Will it induce business owners to shift to the corporate tax base (instead of the individual tax base)?

More broadly, is the Trump tax plan going to increase or decrease the top 1% income share and why? In your answer, consider separately the top 1% after tax income share and the top 1% pre-tax income share.

(d) If income earners are very responsive to taxation, the tax rate should not be too high.

(e) The EITC has a positive effect on labor force participation but reduces hours of work conditional on working.

3. Incidence of commodity taxation

Consider the following model for the toothbrush market in Berkeley. Suppose the aggregate demand for brushes in Berkeley is given by $Q^D = 900 - P/2$ where P denotes the price and Q denotes the quantity of brushes in terms of thousands of brushes demanded. The aggregate supply for brushes in Berkeley is given by $Q^S = P/4$.

1. Compute the toothbrush market equilibrium. What are the equilibrium price and quantity?
2. Now suppose a tax of $t = \$60$ is imposed on each brush that is purchased. Compute the brush market equilibrium with the tax. What are the equilibrium price and quantity?
3. Compute and graphically depict deadweight loss due to the tax.
4. What is the incidence of the tax? Explain the intuition for the key factors that determine the incidence.

Now suppose that consumers are inattentive to the tax and demand is given by

$$Q^D = 900 - (P + \theta t)/2$$

where $\theta = 2/3$. Again, suppose that a tax of $t = \$60$ is imposed on each brush that is purchased.

5. How can we interpret θ ?

6. What are the new equilibrium price and quantity?

7. Compute and graphically depict deadweight loss arising due to the tax. How does your answer compare to your answer from part (3)? Explain.

4. Optimal income tax

The new President of the United States has decided that the deficit has become too large. He is trying to figure out how to maximize the amount of tax revenue collected so he hires you to compute the tax rate that will maximize tax revenues from the workers. Suppose all agents in the economy have the following utility function:

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

where c is consumption, l is labor supply, and θ is a fixed parameter. Assume also that the only income that individuals have is labor income, with an hourly wage rate given by w taxed at rate t .

1. Write the budget constraint faced by the individual.
2. Set up the maximization problem and solve for the optimal labor supply function. [Note: it should depend on w and t . The fixed parameter θ will be there too.].

3. We define the net-of-tax rate as $1 - t$. Using the function you found in part 2, show that the elasticity of labor supply with respect to the net-of-tax rate is $(1 - \theta)/\theta$.

4. Estimate $(1 - \theta)/\theta$ from the following data, stating precisely the assumption you are making to identify this estimate.

United States			Canada	
year	tax rate	hours worked	tax rate	hours worked
2015	35%	2000	35%	2000
2017	28.5%	2300	35%	2100

5. Solve for the tax rate that maximizes tax revenue given this estimate of $(1 - \theta)/\theta$. Explain to the President why the revenue-maximizing tax rate is strictly less than 100%, even though he would like to take away all of the workers income.