Economics 204  Homework Set 2: Taxes and Subsidies

1. California taxes on cigarettes to fund preschool. Suppose taxes are $15 per carton, paid by consumers.\(^1\) Demand and supply of cigarettes are:

\[
\begin{align*}
\text{Supply: } Q_S &= 2P + 20 \\
\text{Demand: } Q_D &= 200 - P
\end{align*}
\]

a) Calculate the market equilibrium price and quantity without the tax.

b) By how much will this tax increase the price consumers pay? By how much will it increase the price producers receive?

c) How much revenue will this tax raise? By how much will it reduce smoking?

d) Suppose that consumer groups argue that cigarette taxes are regressive and mostly collect revenue from poorer individuals. They propose that the taxes instead be paid by the wealthy cigarette companies. How will this affect consumers and cigarette companies? What is the new price and quantity traded?

2. T/F/Explain: Suppliers ability to pass on an excise tax to demanders depends on the strength of demand. If the demand curve is very high, a large percentage of the excise tax will be passed on. If demand is low, suppliers will have to pay more of the tax.

3. T/F/Explain: If a tax is mostly borne by demanders in a market, then this is a "sellers" market, and a subsidy will therefore mostly go to the producers. (Be sure you can give a good explanation for the correct answer!)

4. Suppose a new law requires students to give a $100 tip to each of their professors to enroll in a course. (Hint—draw the curves!) Assume that students pay the university (and now their professors) by the course and that they are free to take as many or as few courses as they would like. Assume that professors are paid by the course (both by the university and now also the extra $100 from their students) and are free to supply as many courses as they would like.

(a) What happens to the demand curve for college courses? (If the demand curve shifts, by how much and in what direction does it shift?)

(b) What happens to the supply of college courses? (If supply shifts, by how much and in what direction does it shift?)

---

\(^1\) These numbers are made up, although the policy in California is a real one. The actual tax is 50 cents per pack. In 2000, when this was imposed, it resulted in tax revenues of $700 million. Tobacco sales were reduced by 30%.
(c) Are students made better off or worse off as a result of this law? What about professors? Explain

5. Suppose in problem 4, we replaced the words “student” with “businesses” and the words “professor” with “employee” and the words “$100 tip” with “$100 worth of health insurance.” What do you predict is the effect of requiring businesses to provide a specific dollar amount of health insurance to employees? How will this affect wages? Employment? Businesses costs? Are there any additional complications in this problem that might be different than in problem 4?