

Topic 7 – Taxes

Big Question – What impact do taxes have on markets?

- I. Excise Tax – a per unit tax on a good or service.
 - a. Taxes drive a wedge between the price the consumer pays (P_c) for a product and the amount of money the firm receives (P_f).

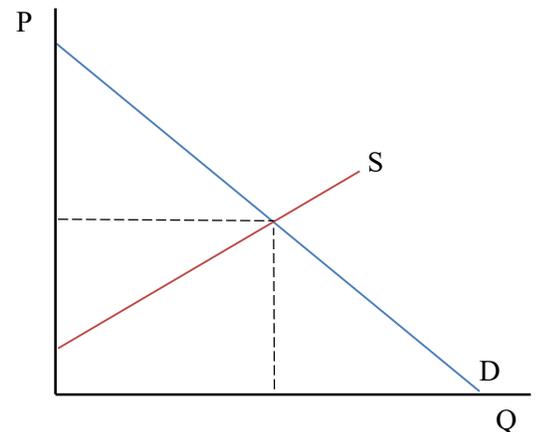
$P_f =$

- b. The legal incidence of a tax refers to the group that is legally responsible for paying the tax.

Example: Suppose that the government is considering imposing a \$40 per unit tax on the market described below.

Demand: $P = 500 - 0.5Q$ Supply: $P = 100 + 0.3Q$

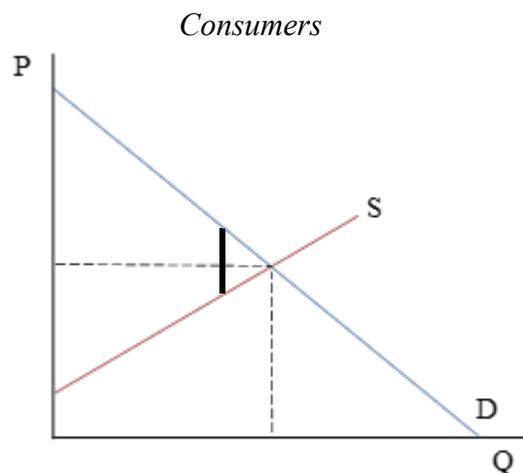
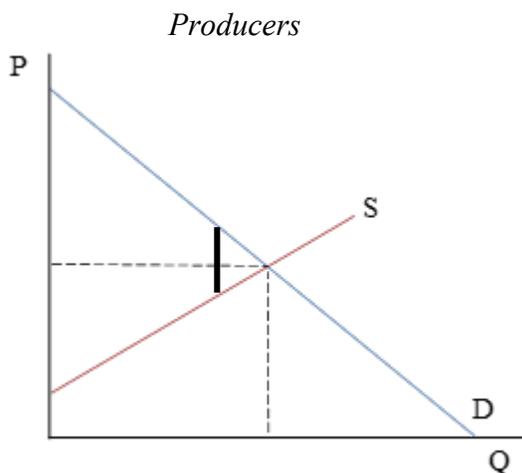
- a. Find the equilibrium price and quantity with no tax.



- b. Calculate CS, PS, and TS at the market equilibrium.

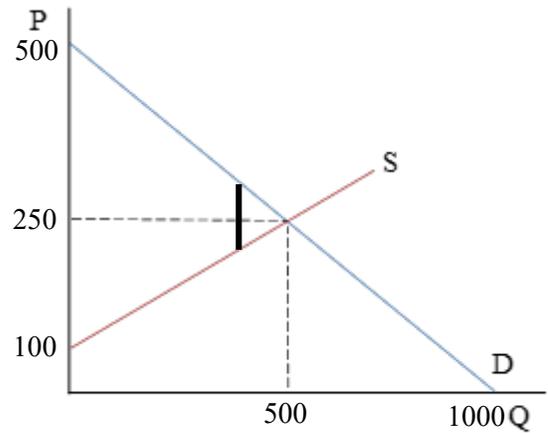
- c. Show the effect of the tax if the legal incidence falls on...

\$40 Tax Wedge



$$\text{Demand: } P = 500 - 0.5Q \quad \text{Supply: } P = 100 + 0.3Q$$

- d. Find the new equilibrium quantity and prices for both consumers and firms after the \$40 per unit tax is implemented.



- e. What is the real incidence of the tax?

Consumers' Share:

It's good to be flexible!

Producers' Share:

- f. Calculate the price elasticity of both supply and demand at the original equilibrium.

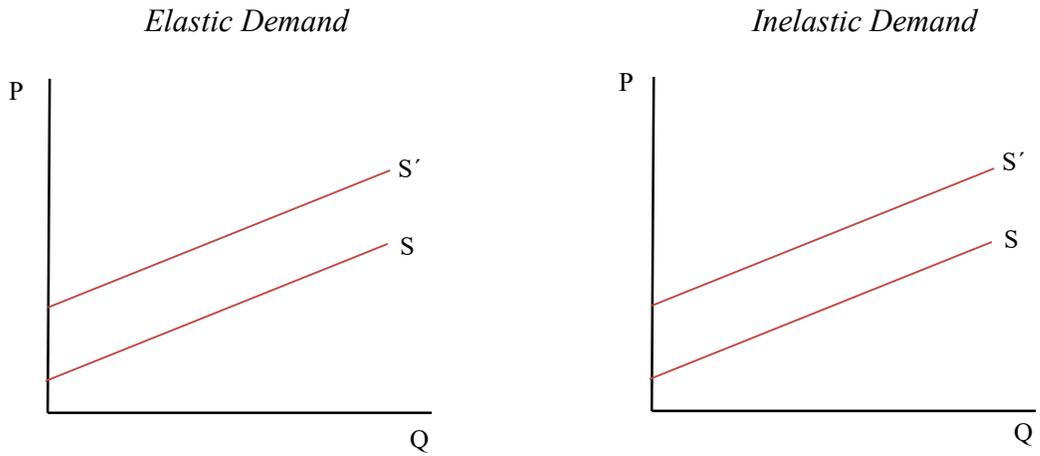
- g. Calculate consumer and producer surplus after the tax.

- h. Calculate government revenue.

- i. How much total surplus is lost due to the tax?

II. Optimal Taxation

a. Efficiency – What type of tax minimizes DWL?



What's wrong with taxing goods that have inelastic demand?

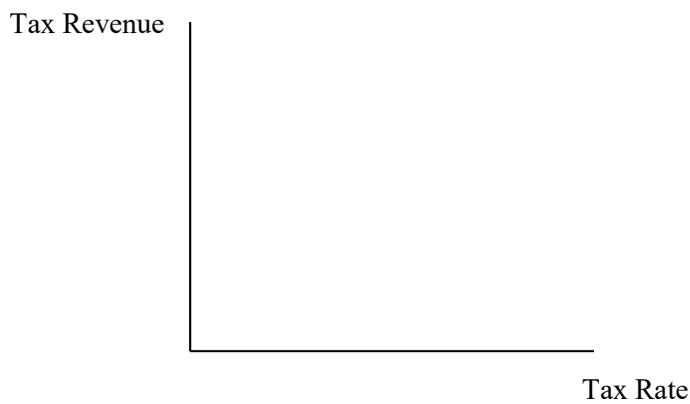
b. Fairness – Tax burden by income group

i. Regressive Tax:

ii. Flat Tax:

iii. Progressive Taxes:

c. Revenue Maximization – Laffer Curve



Example: Read the news article* and think about the following questions.

1. What were the arguments for and against the soda tax?
2. What was the legal incidence of the tax? What was the real incidence of the soda tax?
3. What does the real incidence tell you about the price elasticity of demand for soda?
4. Do you think demand for juice is more or less elastic than demand for soda?
5. Why might researchers expect the impact of the tax to be different for low income families?

Seattle's tax of 1.75 cents per fluid ounce, which took effect [in January 2018](#), is charged to distributors of sugar-sweetened beverages. But the distributors can pass the tax on to stores and the stores can pass the tax on to consumers.

When the City Council approved the tax in 2017, many proponents said the goal was to decrease consumption of unhealthy beverages by driving up prices, while others supported the policy because they said it would raise money for healthful-eating and education programs. Foes said the tax would disproportionately hurt people with low incomes. Some store owners and consumers opposed the measure, along with unionized beverage-industry workers.

Nearly 100 percent of Seattle's [new tax](#) on the distribution of sweetened beverages has been passed on to consumers through higher in-store prices, a new report estimates. But some taxed beverages have increased in price more than others and some stores have increased their prices more than others, according to [the report](#) by University of Washington researchers that City Council members are set to discuss Wednesday.

Sodas have increased in price more than sugar-sweetened juices and bottled coffee drinks, and smaller stores have increased their prices more than supermarkets, [the report indicates](#). Additionally, some smaller stores have increased their prices even for beverages not subject to the tax, such as diet sodas. The UW team also is studying attitudes toward the tax, impacts on sales and changes in consumption by low-income children.

The city collected [nearly \\$17 million](#) in the first nine months of the tax, surpassing its initial expectations, and officials now are counting on the money to keep rolling in, with substantial annual declines [no longer anticipated](#).

III. Assignments

- a. Problem Set 7 due on Brightspace at 11:00pm on 2/24/20

* Article Citation: "Nearly all of Seattle's soda tax is being passed on to consumers, new report shows," by Daniel Beekman, Seattle Times, January 7, 2019.

