OUTLINE — September 17, 2018

- Taxes and Deadweight Loss, continued
- Elasticity
  - Total Revenue Effect
  - Effect on Consumer Surplus
  - Effect on Burden of a Tax
- Accounting versus Economic Profit (maybe)

Midterm #1: Thurs 9/27, 8 pm. Read the old midterms yet?
Piazza!! Office Hours!!! SLC & Dept Tutors!!

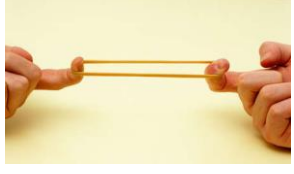
Extra handouts: in racks outside 532 Evans

Effect of a Tax Increase

- Sales or excise tax

Elasticity

- Elasticity of A with respect to B
  - How much does A change when B changes?



- $\text{elasticity} = \dfrac{\text{percent change of A}}{\text{percent change of B}}$

Demand & Supply Elasticities

- How much does q_D change due to . . .
  - . . . a change in buyer income?
  - . . . a change in price?
  - . . . a change in other prices?
- How much does q_S change due to . . .
  - . . . a change in price?

Income Elasticity of Demand

- Remember:
  - Normal Goods
  - Inferior Goods
- Question:
  - By **how much** does q_D change when Y changes?
- Answer:
  - Income Elasticity of Demand

Examples: Income Elasticity

$\%\Delta Y = -1\ \%$

$\%\Delta q_D = -5\ \%$

$\%\Delta Y = +2\ \%$

$\%\Delta q_D = -1\ \%$

Terminology

- *Perfectly Inelastic*:
- *(Relatively) Inelastic*:
- *Unitarily Elastic*:
- *(Relatively) Elastic*:
- *Perfectly Elastic*:

Price Elasticity of Demand

- Remember:
  - Demand ALWAYS slopes down
- Question:
  - By **how much** does q_D change when p changes?
- Answer:
  - Price Elasticity of Demand

Examples: Price Elasticity of Demand

%Δ p = -10 %
$\%\Delta q_D$ = +5 %

%Δ p = +2 %
$\%\Delta q_D$ = - 4 %

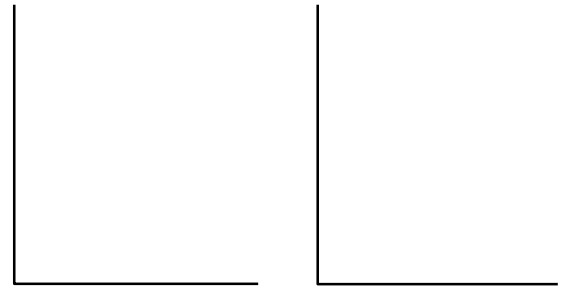
Determinants of Price Elasticity of Demand

- Availability of Substitutes
- Share of Total Spending
- Time Horizon

Total Revenue (TR) Effect

- What happens to total revenue when price rises?
  - TR (total revenue) = price * quantity
- *Price-Elastic Demand*
- *Price-Inelastic Demand*
- *Demand with Unitary Price Elasticity*

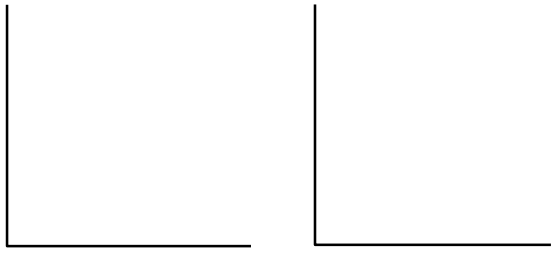
Price Elasticity and Slope



Surplus Depends on Slope

Price-Elastic demand
relatively little consumer surplus

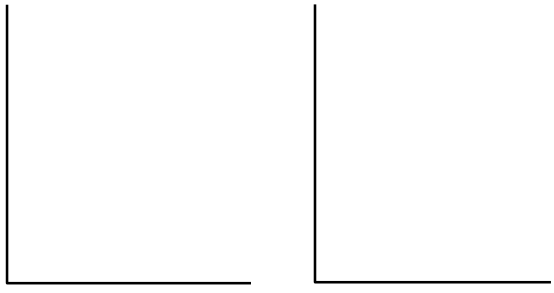
Price-Inelastic demand
relatively much consumer surplus



Circle back: Burden of a Tax

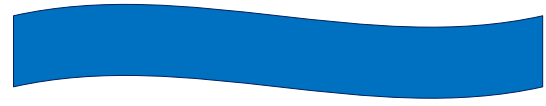
- Tax on an item increases its price
  - But (in the short run) not by the full amount of the tax
- Who "bears the (greater) burden" of the tax?
  - ➢ Definition: Burden = % of tax paid
- Burden depends upon slopes of S and D
  - That is, upon price-elasticity of supply and price-elasticity of demand

Burden & quantity effect Depend on Price-Elasticity



And Now for a New Topic

- Draw a big fat line in your notebook



Supply

Firms' Supply Decisions

- Question
  - Why does supply slope up?
- Assume
  - Goal of firms is to maximize profit

Economic Profit

- Profit = Total Revenue — Total Costs

Total Revenue (TR) = Price * Quantity

Total Costs (TC) include both

1) Out-of-pocket (explicit, accounting) costs
2) Opportunity (implicit) costs

Opportunity Cost of Capital

- Capital (machinery) costs you $10,000
- What if your $10,000 could earn 5 percent elsewhere
  - "Normal rate of return" = rate financial assets are earning
  - In this case, "normal rate of return" = 5 percent per year
- Here, Implicit cost of capital = 5% of $10,000

Opportunity Cost of Labor

- You could earn $40,000 per year working elsewhere
  - Opportunity cost of your labor = $40,000 per year

Accounting vs. Economic Profit

- Total annual revenue = $100,000
- Annual accounting costs = $60,000
- Your savings tied up in company = $50,000
- Normal annual rate of return = 10 %
- Working elsewhere, you could earn $40,000 per year

Accounting Profit =

Economic Profit =