Lecture 5 Notes

Maria Zhu
Duke University

Contents: Chapter 5 (Efficiency in Markets)

Class Plan

• Recap Ch. 3 and 4
• Chapter 5: Efficiency in Markets
  – Benefit, Cost, and Surplus
  – Efficiency in Competitive Markets
• Possibly Start Chapter 6

0.1 Recap Ch. 3 and 4

• We learned about the role of prices in coordinating supply and demand in market equilibrium
• Then we learned the determinants of how responsive quantities were to prices and how that affects revenue
• In this chapter, we’re going to focus on how this type of competitive markets of supply and demand relates to efficiency

1 Introduction

• We learned on the first day that resources are scarce, and that economics is interested in how to allocate these resources. Markets are one mechanism of allocation. Other methods of resource allocation include things like:
  1. Command system: allocate resources by someone in authority (within firm, North Korea)
  2. Majority rule (electing governments, how tax money spent)
  3. Contest (sporting events, entrepreneurship)
  4. First-come, first-served (some restaurants, highway space)
  5. Lottery (casinos, schools)
  6. Personal characteristics (marriage, discrimination)
  7. Force (war, theft, laws)

• Different domains are more or less suited to certain allocation methods. This chapter is going to focus on evaluating the efficiency of markets and why they are useful in some contexts.
• Efficiency: determines “size of the pie”; resources are used in a way that balances costs and benefits
• Equity: how pie is distributed; equivalent to fairness
2 Benefit, Cost, and Surplus

2.1 Demand

What is the difference between value vs. price?

- **Value** = what we get
- **Price** = what we pay

**Demand curve** = marginal benefit = willingness to pay (measure of value)

We don’t always have to pay as much as we are willing to pay (never pay more than willing to pay, because at that point you’re just not going to buy item).

- **Consumer surplus** = difference between what you are willing to pay and what you actually pay (difference between value and price)
- Individual’s consumer surplus is the sum of the surplus of all the things she buys

(Figure Consumer Surplus)

![Figure Consumer Surplus](image)

The relationship between price of good and quantity demanded by one person is individual demand; relationship between price of good and quantity demanded by all parties is **market demand**

- **Market demand curve** = horizontal sum of individual demand curves; formed by adding quantities demanded by all individuals at each price

(Figure Market Demand)

2.2 Supply

- **Cost** = what firm gives up when it produces a good/service
- **Price** = what firm receives when it sells good/service

**Supply curve** = marginal cost

When price exceeds marginal cost, firm receives producer surplus (at values where marginal cost exceeds price, good won’t be sold).
Figure 2: Market Demand

Figure 3: Producer Surplus

- **Producer surplus** = difference between price sellers receive for good/service and how much it cost to make it.

(Figure Producer Surplus)

The relationship between the price of a good and quantity supplied by one producer is individual supply. The relationship between the price of a good and quantity supplied by all producers is *market supply*.

- **Market supply curve** = horizontal sum of individual supply curves and is formed by adding the quantities supplied by all producers at each price.

3 Efficiency in Competitive Markets

In equilibrium, MSC=MSB, so competitive markets are in equilibrium.

**Total Surplus** = Consumer surplus + Producer Surplus

- Total surplus maximized at efficient quantity

(Figure Total Surplus)

3.1 Market Failure

- **Market Failure**: situation in which a market delivers an inefficient outcome (i.e. too much or too little produced)
• **Deadweight loss**: decrease in total surplus that results from an inefficient level of production (Figure Market Failure)

**Examples of sources of market failure**

- **Price and quantity regulations**
  - Rent ceilings, production quotas

- **Taxes and subsidies**

- **Externalities**
  - Externality: cost or benefit that affects someone other than the seller or buyer (e.g. when an electricity company burns coal and emits carbon dioxide, they create a negative effect on society that the company doesn’t consider in making the emissions decision)

- **Public goods and common resources**
  - Public good= good or service that is consumed simultaneously by everyone even if they don’t pay for it (e.g. National defense)–competitive markets would underproduce because everyone wants to free ride on everyone else and avoid paying their share
  - Common resource: owned by no one but available to be used by everyone(e.g. Atlantic salmon)–overused because it’s everyone’s self interest to ignore the costs they impose on others when the decide how much to use

- **Monopoly**: firm that is the sole provider of a good/service
  - e.g. De Beers diamonds–with no market competition it produces too little and charges too high a cost