Chapter 7: Consumers, Producers, and the Efficiency of Markets

Discussion section 4

October 2023

Outline

So far we have tried to understand **how** markets work: a *positive* rather than *normative* project.

Now we will start to look at **welfare economics**: how well-being is effected by different market outcomes.

Willingness to pay

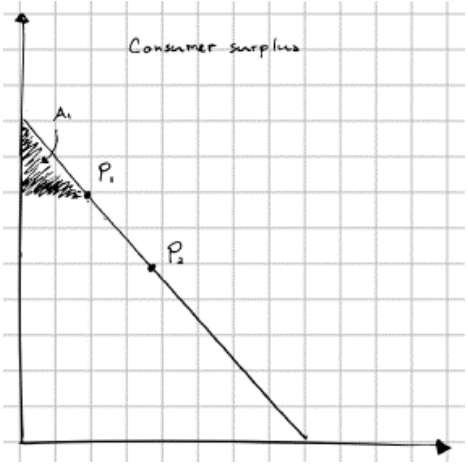
Each consumer will have a different *willingness to pay* for a good.

There is a maximum amount they will spend; at any price below this they purchase the good, and at any price above they do not.

The difference between the amount they *actually* spend and the amount they are *willing* to spend is their **consumer surplus**.

Consumer surplus

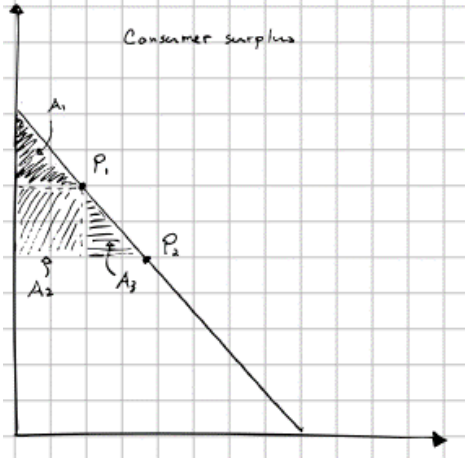
Consumer surplus is the area below the demand curve and above the market price.



What happens to consumer surpluse when the price moves from P_1 to P_2?

Consumer surplus

Some benefit accrues to already participating consumers and some to new consumers.



Consumer surplus

Consumer surplus depends on willingness to pay, so how might we measure this?

Consumer surplus measures the benefit consumers' receive from a good, "as they themselves perceive it".

Producer surplus

Producer surplus is essentially the same.

Depends on *cost*: the value of everything a seller must give up to produce a good.

Given by the area above the supply curve and below the market price.

Efficiency

A market outcome is *efficient* if it maximizes the **total surplus** of producers and Consumers

Total surpluse = consumer surplus + producer surplus = value to buyers - cost to sellers

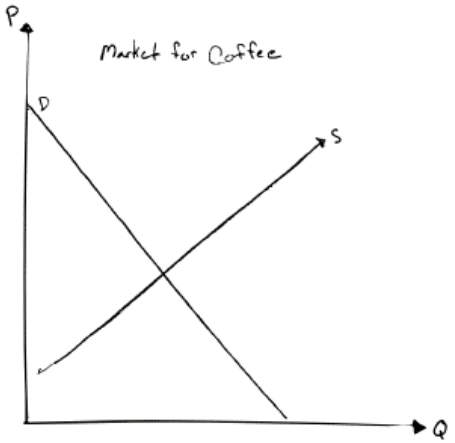
We might also care about *equality*, or the distribution of surplus between producers and consumers

Market for coffee

Let's return to our market for coffee.

Identify the area of total surplus, splitting it into consumer surplus and producer surplus.

Market for coffee



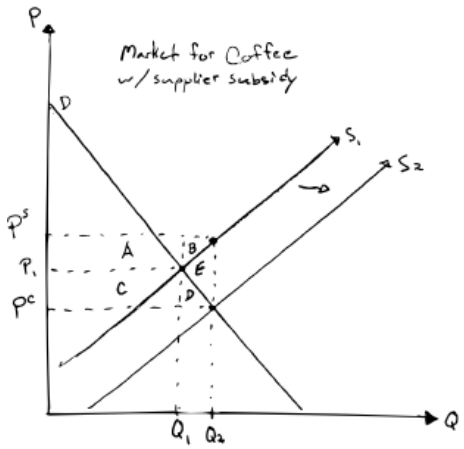
Total surplus in the market for coffee

Market for coffee

Now suppose the government imposes a tax on consumption of coffee.

1. Illustrate the impact of the tax on the market equilibrium; what happens to P and Q?
2. What happens to consumer surplus?
3. Producer surplus?
4. Total surplus?

Tax on market for coffee



Tax on market for coffee

The effects are:

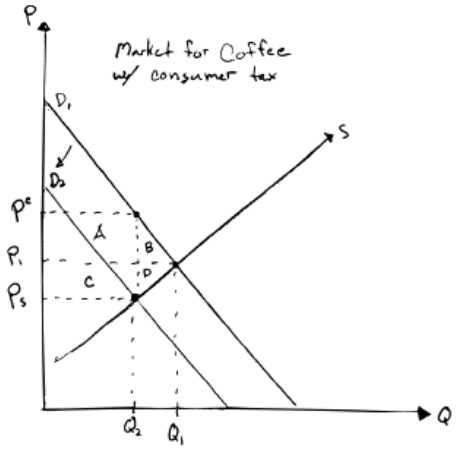
- Consumer surplus decreases by $A + B$
- Producer surplus decreases by $C + D$
- Government revenue is given by $A + C$
- $(A + C) - (A + B) - (C + D) = -(B + D)$ is deadweight loss

Subsidy in market for coffee

Let's try something else: suppose the government provides a *subsidy* to suppliers.

1. Illustrate the impact of the subsidy on the market equilibrium; what happens to P and Q?
2. What happens to consumer surplus?
3. Producer surplus?
4. Total surplus?

Tax on market for coffee



Subsidy in market for coffee

The effects are:

- Consumer surplus increases by $C + D$
- Producer surplus increases by $A + B$
- Government spends$A + B + C + D + E$
- $(C + D) + (A + B) - (A + B + C + D + E) = -E$ is deadweight loss

Total Surplus

In both cases, government interventions were not able to improve the market outcome without creating deadweight loss.

In our simplistic, perfectly competitive market:

- Supply of goods go to the buyers who value them the most
- Demand for goods go to the producers who can make them at the lowest cost
- The market equilibrium thus maximizes the sum of consumer and producer surplus

Efficiency

Note that this tells us nothing about *equality*.

In addition, we have not addressed:

- Market power
- Externalities
- Other market failures

And other violations of our assumptions, which might make this conclusion fail.

Application

Let's consider the market for iPhones.

Is the demand for iPhones elastic or inelastic? What about supply?

Illustrate the impact of a decrease in the cost of production.

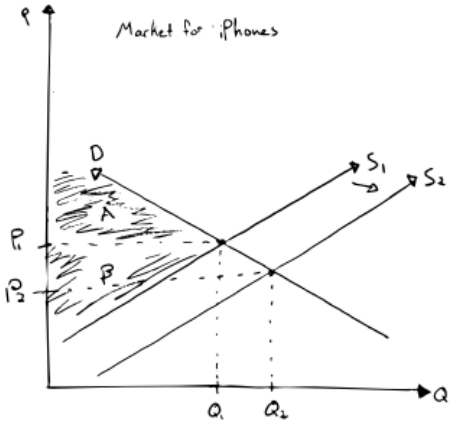
Application

Let's consider the market for iPhones.

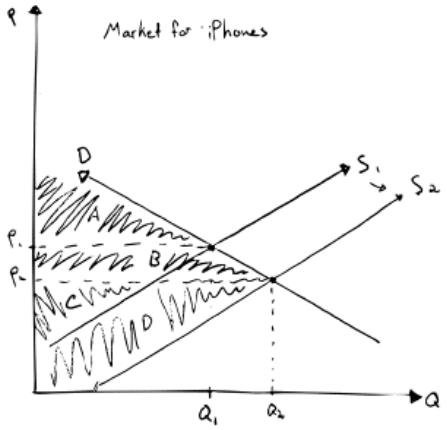
Is the demand for iPhones elastic or inelastic? What about supply?

Illustrate the impact of a decrease in the cost of production and show the change to surplus.

Application



Application



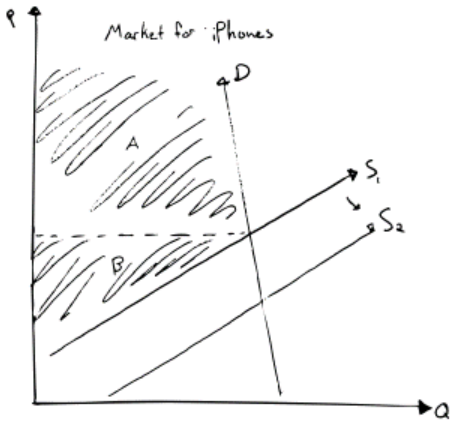
Application

Some of the effects are:

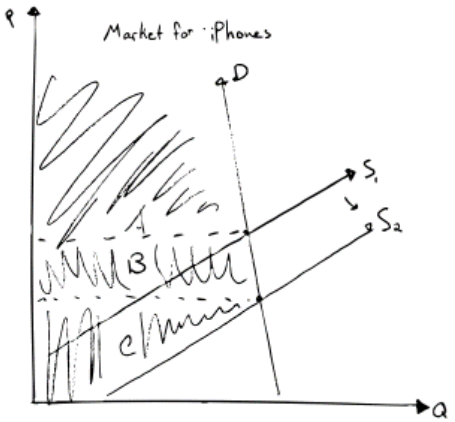
1. New equilibrium price is lower and quantity is higher
2. Total surplus unambiguously increases
3. Both consumers and producers have a larger surplus than before

I drew relatively elastic supply and demand curves; now consider if the supply was elastic, but the demand was very inelastic.

Application



Application



Application

Our graph suggests that the consumer surplus increases by more than producers

This is correct! And think about the inuition: if demand is inelastic this means consumers have a very high willingness to pay, so their surplus will be large.