

Week 3: Supply and Demand

- I. Markets and Trade
 - A. The simplest examples of trade involve just two parties.
 - 1. Ex: I want to exchange bread for dollars, you want to exchange dollars for bread.
 - B. But it is not too hard to imagine there being a lot of would-be bread-buyers and bread-sellers.
 - C. There are physical places where would-be buyers and sellers gather to trade. These are often called "marketplaces" or just "markets." Ex:
 - 1. Farmers' market
 - 2. Stock market
 - D. From these **observed** markets, it is not too hard to make a leap to **conceptualized** markets.
 - 1. Ex: The Internet. No one is physically meeting, but it is easy to analogize it to a simple farmers' market.
 - E. Conceptualizing diverse activities as "markets" is probably the most important intellectual leap in economics. Economics has a "pre-packaged" set of intellectual tools for dealing with all such "markets," known as "supply-and-demand."
- II. Supply and Demand, I: Setting Up the Problem
 - A. Mentally separate (or "partition") sellers and buyers.
 - 1. Sellers are "the supply."
 - 2. Buyers are "the demand."
 - B. Label axes. Put **quantity** exchanged on the x-axis, and the market **price** on the y-axis.
 - C. What does a demand curve look like? The higher the price, the fewer items (smaller quantity) demanders will want to buy.
 - D. Why?
 - 1. Try introspecting.
 - 2. Think in terms of diminishing marginal utility.
 - E. What does a supply curve look like? The higher the price, the more items (larger quantity) suppliers will want to sell.
 - F. Why?
 - 1. Try introspecting.
 - 2. Think in terms of increasing marginal disutility.
- III. Supply and Demand, II: Putting It Together
 - A. Now just put the S and D curves together on the same graph.
 - B. What can be learned? The market tends to be at the **intersection** of S and D! Economists call this intersection the "equilibrium price."
 - C. Why?

- D. Suppose the market price exceeds the equilibrium price. Then people want to sell MORE than people want to buy. So what should a seller do, in his own interest? Slightly cut the price to sell a much larger quantity!
 - E. Suppose the equilibrium price exceeds the market price. Then people want to buy MORE than people want to sell. So what should a buyer do, in his own interest? Offer a slightly higher price, to be able to buy all that he desires!
 - F. What if there were a whole bunch of different prices? Then buyers paying more than average could just switch sellers, and sellers getting less than average could just switch buyers.
 - G. Thus, the amazing result that only the intersection of S and D is stable. That is why we call it the **equilibrium** price - it is the only price that markets don't tend to move away from.
 - H. Additional amazing result: At the market equilibrium, all gains to trade - the difference between the D and the S curves - are realized. (Consider analogy to one-on-one trade).
 - 1. Area between the D curve and the price is called "consumers' surplus." It shows the difference between consumers' maximum willingness to pay, and the amount they actually pay.
 - 2. Area between the S curve and the price is called "producers' surplus" (or "economic profits"). It shows the difference between producers' minimum willingness to accept, and the amount they actually get.
- IV. Supply and Demand, III: Shifts
- A. There are four kinds of shifts that can happen.
 - B. Shift #1: Demand Increases. Ex: A fad for kiwis.
 - C. Shift #2: Demand Decreases. Ex: People find out kiwis cause bad breath.
 - D. Shift #3: Supply Increases. Ex: Innovations in kiwi fertilizer.
 - E. Shift #4: Supply Decreases. Ex: The price of gas rises, making transportation of kiwis more expensive.
 - F. Shifts versus movements along a curve. Students often have trouble translating changes correctly. They will say "demand increases" when what actually happens is that demand stays the same, supply increases, and thus the quantity demanded increases.
 - G. Simple point: A shift in one curve necessarily implies movement along the other.
 - H. How to tell the difference. Think about whether the posited change makes people WANT a good more or less. If so, it's a D change. On the other hand, it makes people less willing to PRODUCE a good, it's a S change.
 - I. Canonical table.

Shift	Price	Quantity
D increases	+	+
D decreases	-	-
S increases	-	+
S decreases	+	-

J. What about combined shifts?

Demand	Supply	Price	Quantity
+	+	?	+
+	0	+	+
+	-	+	?
0	+	-	+
0	0	0	0
0	-	+	-
-	+	-	?
-	0	-	-
-	-	?	-

K. Canonical shifters of demand versus supply:

Demand Shifters	Supply Shifters
Tastes	Technology
Prices of substitutes/ complements	Input prices
Income	Taxes/subsidies/regulation
Number of buyers	Number of sellers

L. The interrelatedness of markets: A shift in one market sets off additional shifts in other markets.

- Ex: The supply of DVD players increases. How do the effects in the DVD market "ripple out" to other markets? Which others? How much?

M. Expectations: If people expect prices to change, they start changing right away.

V. Elasticity

- Economic theory by itself only tells us the sign of the slopes of D and S, not their shape.
- But: We have an intuitive sense that the shape varies a lot from market to market.
- Economists formalize this notion of shape with the concept of "elasticity." If a curve is vertical, we call it "perfectly inelastic," if it is horizontal we call it "perfectly elastic." The flatter it gets, the "more elastic" it is; the steeper it gets, the "more inelastic" it is.
- Consider some polar cases:
 - Perfectly elastic demand curve.
 - Perfectly inelastic demand curve.
 - Perfectly elastic supply curve.
 - Perfectly inelastic supply curve.

- E. Elasticity determines how much a shift changes quantity versus price.
 - 1. If D increases and S is perfectly inelastic, then price rises and quantity doesn't change.
 - 2. If S increases and D is perfectly inelastic, then price falls and quantity doesn't change.
 - 3. If D increases and S is perfectly elastic, then price stays the same and quantity rises.
 - 4. If S increases and D is perfectly elastic, then price stays the same and quantity rises.
- F. What goods have...
 - 1. ...very elastic demand?
 - 2. ...very inelastic demand?
 - 3. ...very elastic supply?
 - 4. ...very inelastic supply?
- VI. Price Controls
 - A. Governments are often unhappy about what the equilibrium price in a given market is. Oftentimes, especially with high SDB, they respond by imposing "price controls."
 - B. If they want the market price to be lower, they impose a price ceiling (or price maximum).
 - 1. Ex: During WWII, and again during the '70s, there were economy-wide price ceilings imposed.
 - 2. Ex: During the '70s, the price of gas and oil was capped.
 - C. What does S and D analysis predict will happen? With the price fixed below the equilibrium level, D exceeds S - a condition known as a **SHORTAGE**.
 - D. This leads to some form of *rationing* of buyers.
 - 1. Simplest form: Suppliers decide.
 - 2. Alternate: Standing in line ("queuing").
 - 3. Alternate: Government ration tickets.
 - E. What other effects would S and D analysis predict?
 - 1. Corruption.
 - 2. Increased search effort by demanders.
 - 3. Quality reductions by suppliers.
 - F. How well does the S and D model work in explaining the effects of price ceilings? Very well indeed.
 - 1. Ex: Gasoline price controls.
 - 2. The case of Berkeley.
 - G. If governments want market prices to be higher, they impose a price floor (or price minimum).
 - 1. Ex: In agriculture since the '30s.
 - 2. Ex: The minimum wage.
 - H. What does S and D analysis predict will happen? With the price fixed above the equilibrium level, S exceeds D - a condition known as a **SURPLUS**.

- I. This leads to rationing of *sellers*.
 1. Simplest form: Demanders decide.
 2. Alternate: Government licensing.
 3. Alternate: Government buys surplus.
 - J. What other effects would S and D analysis predict?
 1. Corruption.
 2. Increased search effort by suppliers.
 3. Quality *increases* by suppliers.
 - K. How well does the S and D model work in explaining the effects of price floors? Again, quite well.
 1. Ex: Airline regulation.
 2. Ex: Minimum wage in the U.S.
 3. Ex: European unemployment.
 - L. Why are price controls so popular? There are always some beneficiaries, but the widespread public sympathy is hard to explain as anything other than a product of lack of economic understanding.
- VII. Entry and Exit
- A. A further effect of price controls is to induce entry and exit of firms into the market.
 1. Price ceilings induce...?
 2. Price floors induce...?
 - B. This is just part of a more general pattern:
 1. When firms in an industry are earning **economic profits**, this attracts new entrants.
 2. When firms in an industry are earning **economic losses**, this induces exit (sometimes in the form of bankruptcy).
 - C. Entry and exit stop when Price=Average Cost. Remember, economic profit includes the opportunity costs of labor and capital!
 - D. This is how markets move resources from industry to industry. When demand increases, this temporarily leads to economic profits, but at the same time induces new entry.
 - E. When demand decreases, this temporarily leads to economic losses, but at the same time induces exit.
 - F. People often lament exit and bankruptcy, but what is the alternative? A world where production fails to respond to desires.
 - G. How should this be diagrammed? Distinguish between "long-run" and "short-run" demand and supply elasticity. Elasticity is normally greater in the long-run because people find substitutes and otherwise rearrange their affairs to take advantage of changes in their budget set.
- VIII. Exercise: Name an Industry
- A. Name an industry. Let's try to analyze it in S and D terms.