Lecture 1: Supply and Demand

August 26, 2025

Overview

Welcome to Microeconomics

1. Expectations
   - Call me Leah
   - Class should be hard, but not impossible
   - What we learn should be clearly applicable
   - Come prepared to give examples, as I will call on you
   - Understand that no class can satisfy all students
   - Is this the right class for you?
   - Math assessment – see introductory email
   - If you have a disability requiring accommodation, please let me know this week

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5. Ripped from Headlines assignment

Other Logistics

- Piazza email
  - sign up asap
  - please use to email everyone
  - sign-up link on syllabus page, and on BB announcement
- Homework assignment
  - submit required problems on paper, digitally
  - optional problems online via Achieve
- Use Numbers 1 of 2
  - Project instructions posted
  - Due before Lecture 3

Expectations for Class

Before Class

- Read assigned textbook pages
- Read ripped from headlines articles
- Work on problem set

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During Class

We are recording! For within class use **only**

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During Class

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- Administrative notes
- Ripped from the Headlines presentation
- Interactive lecture

Chapters 1 and 2: Supply and Demand

Chapters 1 and 2

1. Why Economics?
2. Supply and Demand
   - Markets and Models
   - Demand
   - Supply
   - Market Equilibrium
3. Vanilla markets

Why Economics?

- An important language for policy makers
- A shared set of assumptions about how the world works
- Understand the assumptions and logic if you want to challenge it
- Learn the power of models

Supply and Demand: Markets and Models

What is a Market?

A set of many things

- type of product sold
- location
- point in time

Markets Policy Aside: Antitrust

- Federal anti-trust policy prohibits monopolies and "excessive" market concentration
- Whether or not a market is concentrated depends on how you define the market
- Expedia / Orbitz propsed merger
  - Expedia owns Travelocity, wants to buy Orbitz
  - Hotel owners say market is online bookings, and merger would give new company 75% of all online bookings
  - Expedia says market is hotel reservations, and merged company will account for 17% of hotel bookings[1]

[1] Full story here and a different interesting example here.

Key Assumptions of Supply and Demand Model

1. We restrict our focus to one single market
   Supply $\equiv$ total amount of a good that all producers are willing to sell
   Demand $\equiv$ total amount of a good that all consumers are willing to buy
2. All goods bought and sold in the market are identical
3. All goods sold in the market sell for the same prices and everyone has the same information about prices and quality
4. There are many buyers and sellers in the market

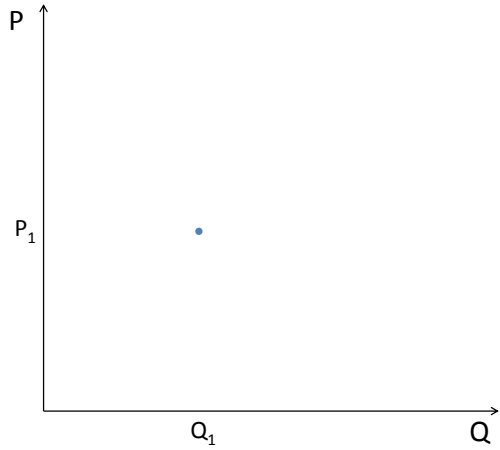
Supply and Demand: Demand

Demand Curves

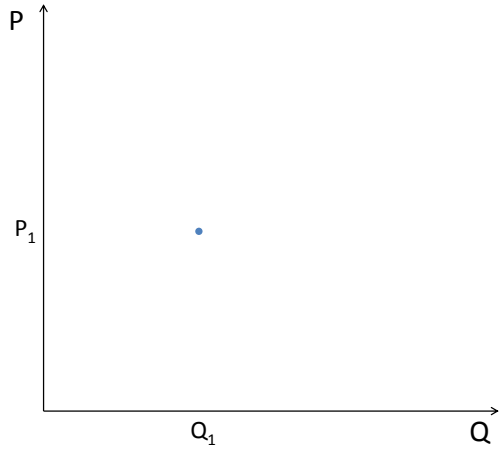
We want a way to summarize everyone's demand in the market

- Demand curve $\equiv$ relationship between the quantity of a good demanded and the price consumers are willing to pay, holding all else constant
- Demand curves almost always slope downward

Picturing Demand for a Product You Know

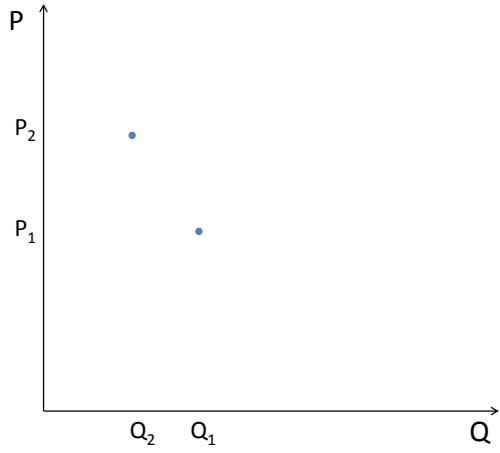


Picturing Demand for a Product You Know

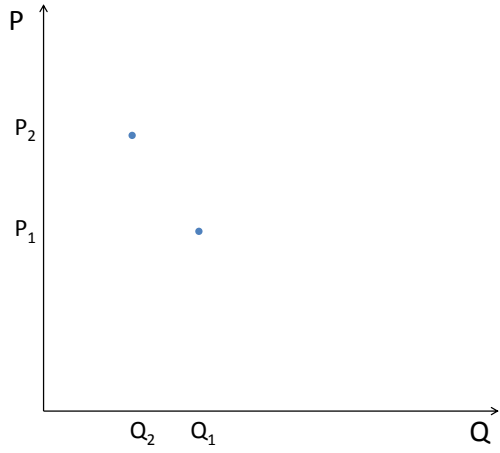


Then, what if the price increases?

Quantity Demanded at an Increased Price

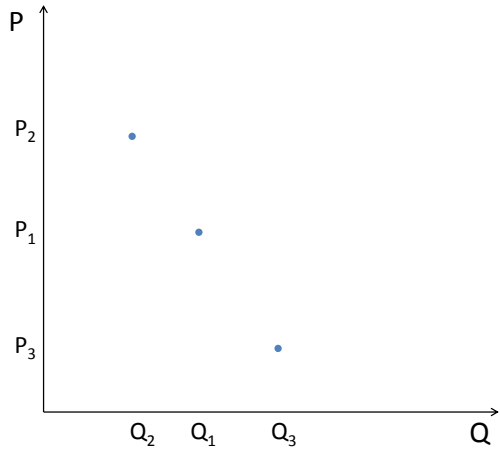


Quantity Demanded at an Increased Price

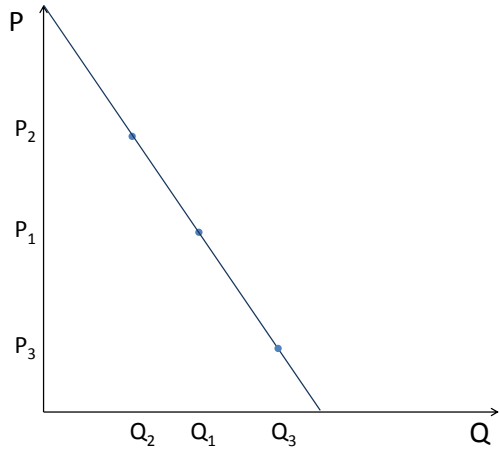


What if the price had instead decreased?

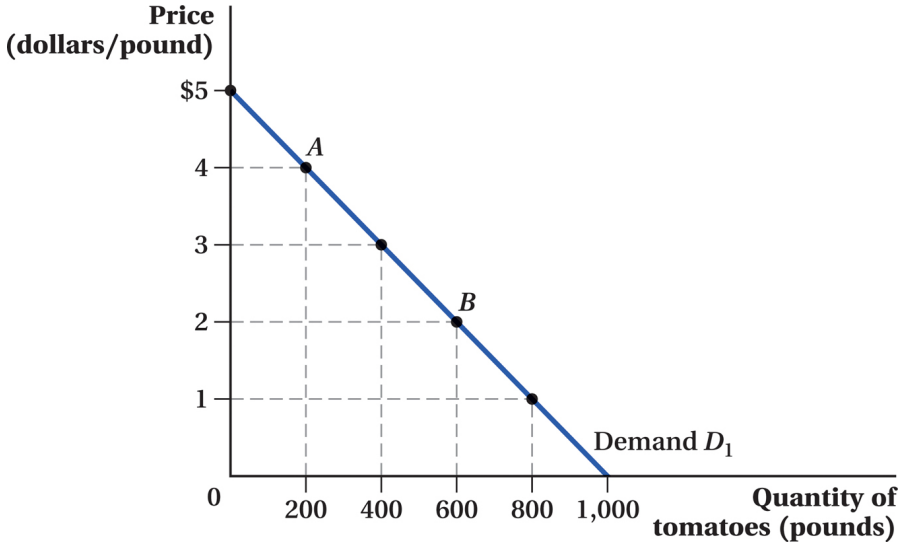
Quantity Demanded at a Decreased Price



Think about a Q for any P



The Textbook's Demand Curve



Demand Curve: Graph to Algebra

- If you can draw it in a graph, you can write an equation for it
- We can write the previous picture's line as $Q^D = 1000 - 200P$
  - This is a function of Q in terms of P, which we can write in general as $Q = f(P)$

Inverse Demand Curve

$$Q^D = 1000 - 200P$$

Inverse Demand Curve

$$\begin{aligned} Q^D &= 1000 - 200P \\ Q^D + 200P &= 1000 \end{aligned}$$

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Inverse Demand Curve

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\begin{aligned}
Q^D &= 1000 - 200P \\
Q^D + 200P &= 1000 \\
200P &= 1000 - Q^D \\
P &= 5 - \frac{1}{200}Q^D
\end{aligned}
$$

Inverse Demand Curve

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Q^D &= 1000 - 200P \\
Q^D + 200P &= 1000 \\
200P &= 1000 - Q^D \\
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$$

- First line is demand curve
- Final line is inverse demand curve: function of P in terms of Q
- Inverse version matches the previous graph
- You can read the negative slope ($-\frac{1}{200}$) from the equation

Factors that Influence Demand

Factors that Influence Demand

1. Price
2. Number of consumers
3. Consumer income or wealth
4. Consumer tastes
5. Prices of other goods

How Do Other Goods Influence the Price of the Good We're Considering?

- Substitute $\equiv$ a good that could replace the good under consideration

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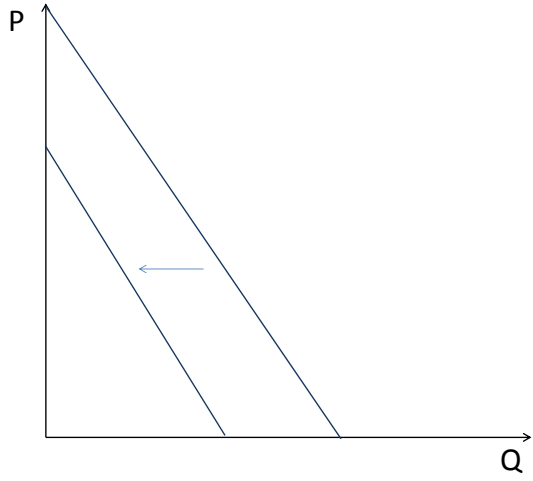
- Substitute $\equiv$ a good that could replace the good under consideration
- Complement $\equiv$ a good that you consume with the good under consideration

If the price of a perfect substitute decreases, what happens to your demand for the main good?

Demand Curve Shifts

- If we want to understand how the market demand changes when price changes, we move **along** the demand curve
- When there is a change in any other determinant of demand, the demand curve **shifts**

What Could Make a Demand Curve Shift Inward?



Key Language: Change in Demand vs Change in Quantity Demanded

- Change in quantity demanded

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Same wording applies to supply. Use carefully!

Supply and Demand: Supply

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- Price
- Suppliers' costs of production
- Number of sellers
- Sellers' outside options

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So what does a supply curve look like?

Factors that Influence Supply

- Price
- Suppliers' costs of production
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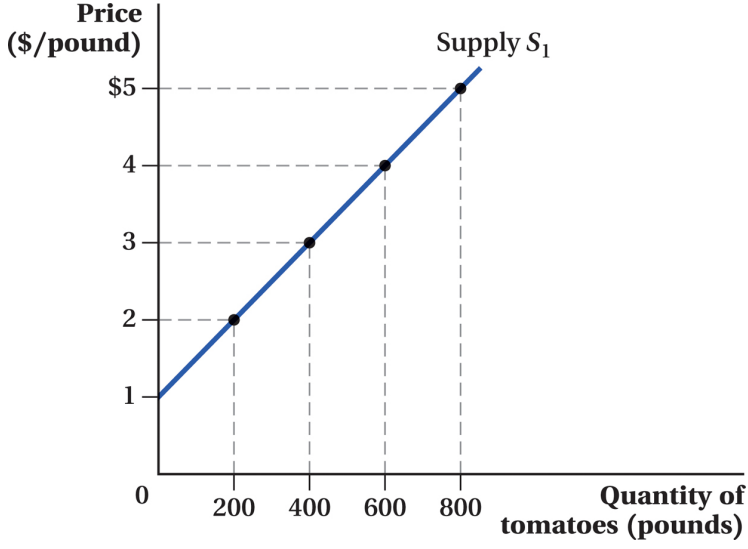
So what does a supply curve look like? Upward sloping.

Textbook's Supply Curve



An Equation for the Supply Curve

- Just like demand, we can write an equation for supply
- $Q^S = 200P - 200$

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- Just like demand, we can write an equation for supply
- $Q^S = 200P - 200$
  - this is $Q = f(P)$
- We can also write $P = \frac{Q}{200} + 1$
  - this is $P = g(Q)$
  - entirely equivalent to first equation

Shifts in the Supply Curve

- Does a price change shift the supply curve or move along the supply curve?

Shifts in the Supply Curve

- Does a price change shift the supply curve or move along the supply curve?
- Do non-price changes cause shifts or moves along the supply curve?

Supply and Demand: Market Equilibrium

Defining Market Equilibrium

- Point at which consumers' quantity demanded equals producers' quantity supplied
  - $Q^D = Q^S$
- Equilibrium price $\equiv$ price at which quantity supplied equals quantity demanded
  - P such that $Q^D = Q^S$

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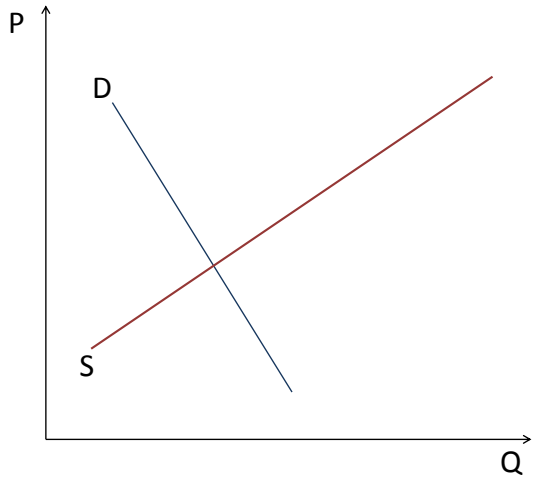
  - $Q^D = Q^S$
- Equilibrium price $\equiv$ price at which quantity supplied equals quantity demanded
  - P such that $Q^D = Q^S$
- Getting to equilibrium is the work of Adam Smith's invisible hand

Equilibrium in a Graph



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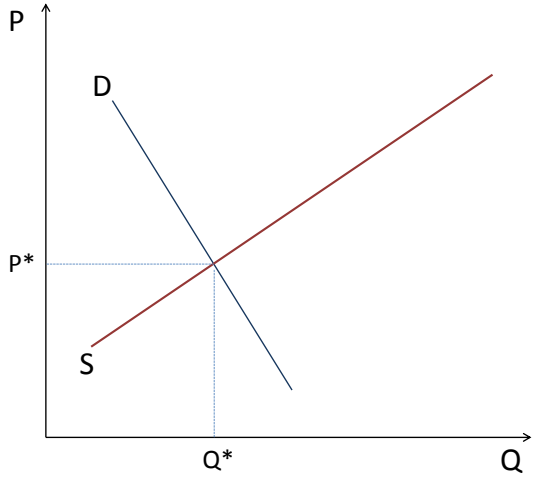

Equilibrium in Algebra: Price

Using our tomato example

$$Q^D = Q^S$$

Equilibrium in Algebra: Price

Using our tomato example

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Equilibrium in Algebra: Price

Using our tomato example

$$\begin{aligned} Q^D &= Q^S \\ 1000 - 200P &= 200P - 200 \\ 1200 &= 400P \end{aligned}$$

Equilibrium in Algebra: Price

Using our tomato example

$$\begin{aligned} Q^D &= Q^S \\ 1000 - 200P &= 200P - 200 \\ 1200 &= 400P \\ P &= 3 \end{aligned}$$

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- Work with classmates, me or TA on problems
- Sign up for Ripped from Headlines
- Article finders email me by Wednesday midnight
- Read Chapter 2.5

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I will

- post these lecture notes on my webpage
- post lecture recording on Blackboard
- anything else?