

Lecture 1: Supply and Demand

August 25, 2026

Overview

- ① Course Administration
- ② Supply and Demand
- ③ Market and Models
- ④ Demand
- ⑤ Supply
- ⑥ Market Equilibrium

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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③ Review syllabus

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⑤ Ripped from Headlines assignment

Other Logistics

- Homework assignment
 - submit required problems on paper, digitally
 - optional problems online via Achieve
- Big Ideas and Data
 - Interpreting data and relating ideas to class
 - 2 in-class quizzes
 - Goal: done in $<$ ten minutes
 - Weeks 4 and 12

Expectations for Class

Before Class

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

Expectations for Class

Before Class

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

During Class

- We are recording! For within class use **only**
- Administrative notes
- Ripped from the Headlines discussion and graphs
- 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 propped 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 bookings¹

¹Full 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

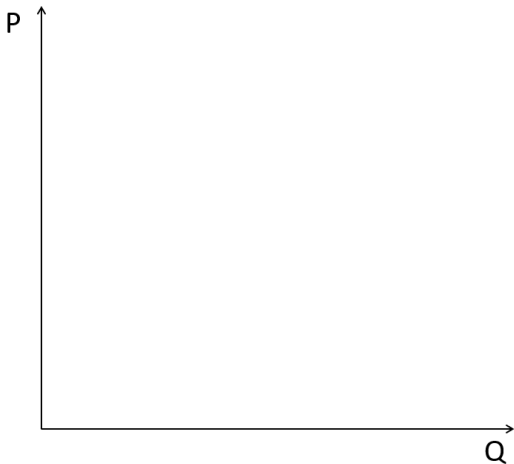
Supply and Demand: Demand

Demand Curves

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

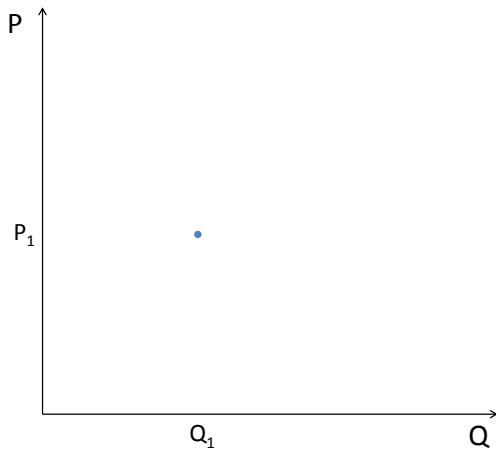
- Demand curve $\equiv$ relationship between the quantity of a good demanded and the price consumers are willing to pay, holding all else constant
- Demand curves almost always slope downward

Picturing Demand

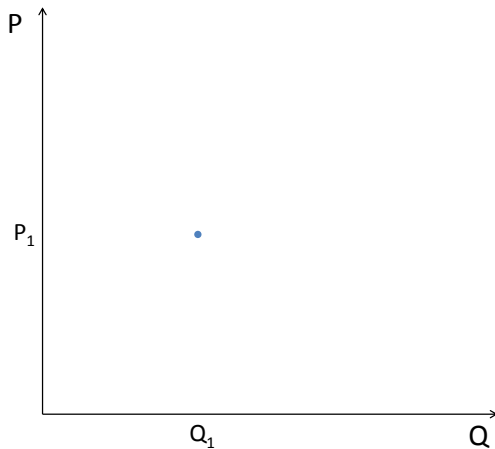


First three lectures:
graphs have P on y axis
and Q on x axis

Picturing Demand for a Product You Know

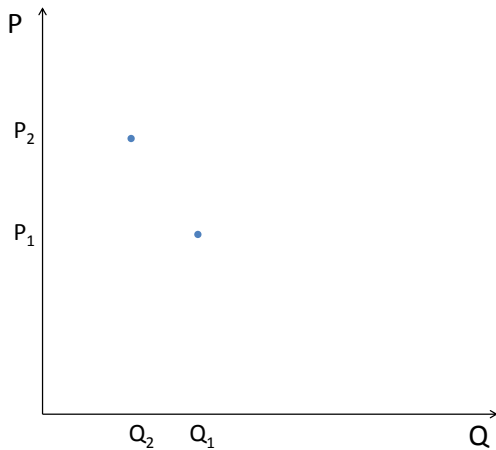


Picturing Demand for a Product You Know

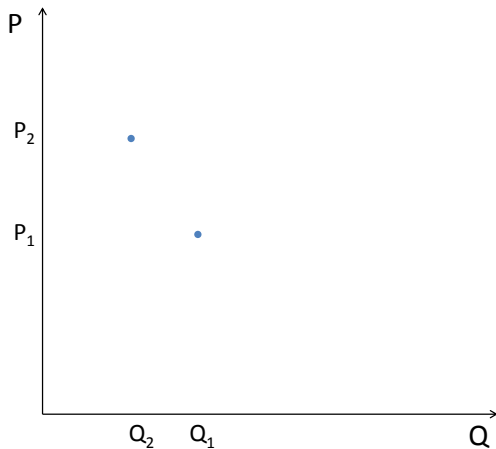


Do you want more or less Q if the price increases?

Quantity Demanded at an Increased Price

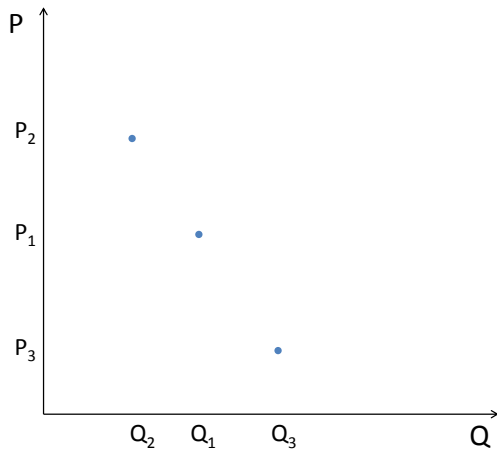


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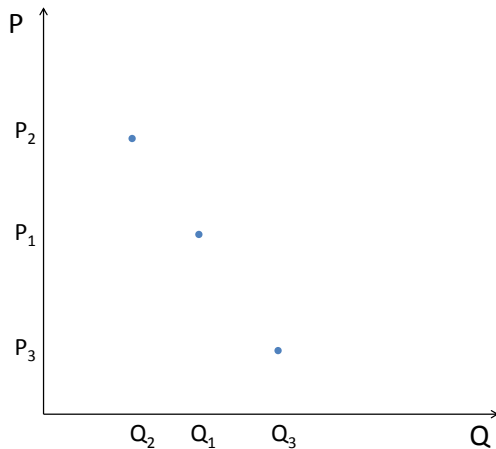


If the price falls below P_1 ,
do you want more or less
 Q ?

Quantity Demanded at a Decreased Price

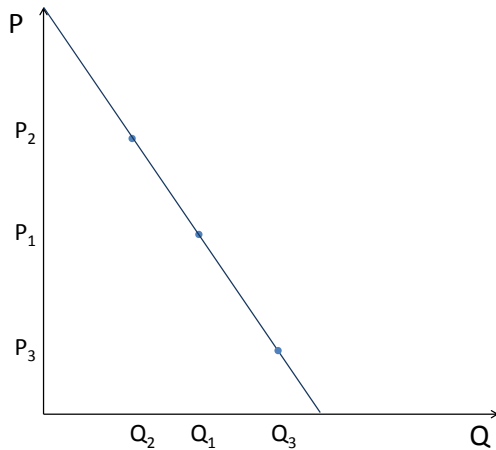


Quantity Demanded at a Decreased Price

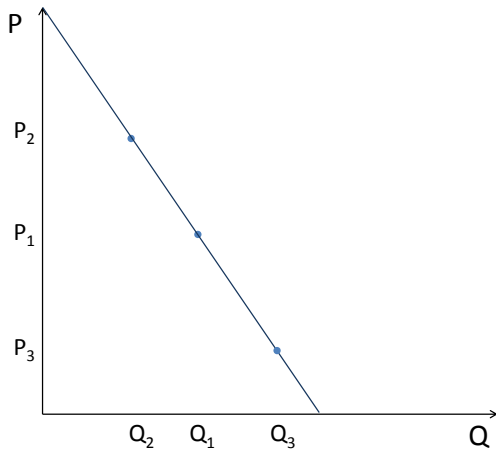


Does this seem plausible to you?

Think about a Q for any P

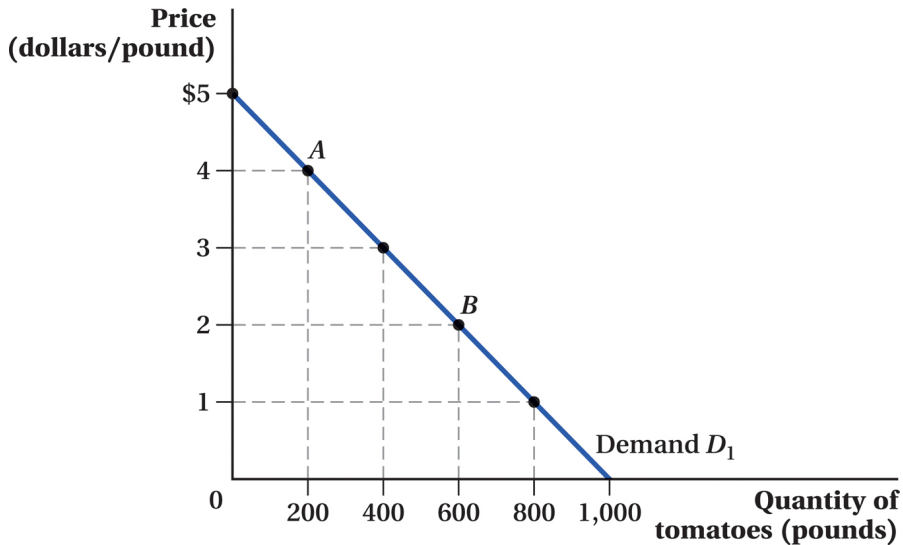


Think about a Q for any P



What does the line tell us?

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

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

- A function of Q in terms of P
- Generally, this is $Q = f(P)$

Inverse Demand Curve

Regular demand curve

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

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Inverse Demand Curve

Regular demand curve

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

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

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

$$P = 5 - \frac{1}{200}Q^D$$

Inverse Demand Curve

Regular demand curve

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

- 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

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

- 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?

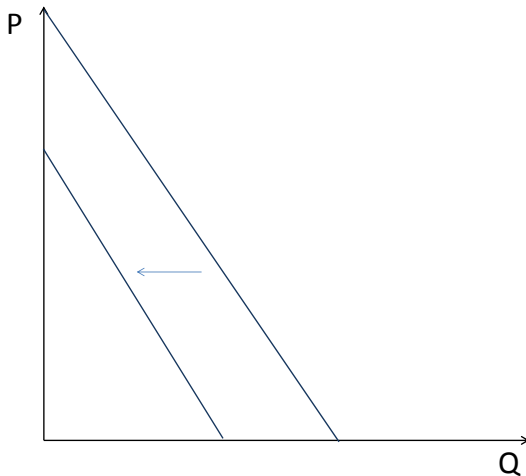
Along the Demand versus a Shift in the Demand Curve

- **Movement along the demand curve**
 - How do consumers respond when prices change?
 - Nothing else changes

Along the Demand versus a Shift in the Demand Curve

- **Movement along the demand curve**
 - How do consumers respond when prices change?
 - Nothing else changes
- **Demand curve shifts**
 - How does overall relationship between price and quantity demanded change?
 - Driven by change in any other component of demand: income, tastes, etc.

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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- Change in quantity demanded
 - Movement **along** the demand curve
 - Nothing changes but price
- Change in demand
 - **Shift** of the demand curve
 - The overall relationship between price and quantity changes

Same wording applies to supply. Use carefully!

Supply and Demand: Supply

Factors that Influence Supply

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- ① Price
- ② Suppliers' costs of production
- ③ Number of sellers
- ④ Sellers' outside options

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Factors that Influence Supply

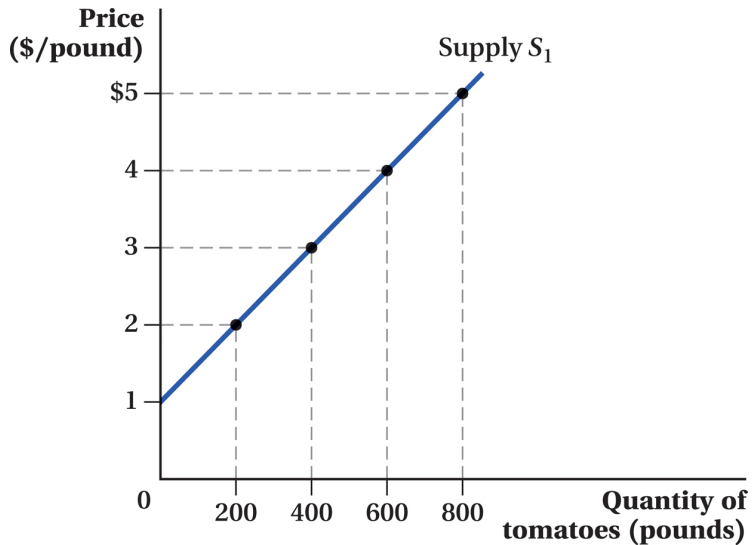
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What direction does a supply curve slope? up or down? Up

Note!

- No demand items in supply list
- No supply items in demand list

Textbook's Supply Curve



An Equation for the Supply Curve

- Just like demand, we can write an equation for supply
- For textbook's picture

$$Q^S = 200P - 200$$

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$$Q^S = 200P - 200$$

- this is $Q = f(P)$
- We can also write inverse supply curve

$$P = \frac{Q}{200} + 1$$

- this is $P = g(Q)$
- entirely equivalent to first equation

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Regular supply to inverse supply:

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Regular supply to inverse supply:

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

Movements Along versus Shifts in the Supply Curve

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

Movements Along versus 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

$$P \text{ such that } Q^D = Q^S$$

Defining Market Equilibrium

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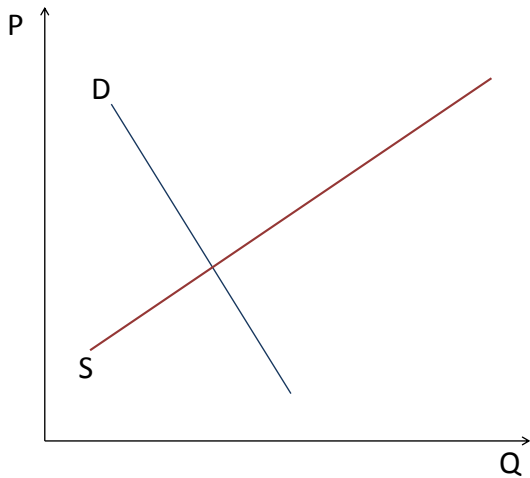
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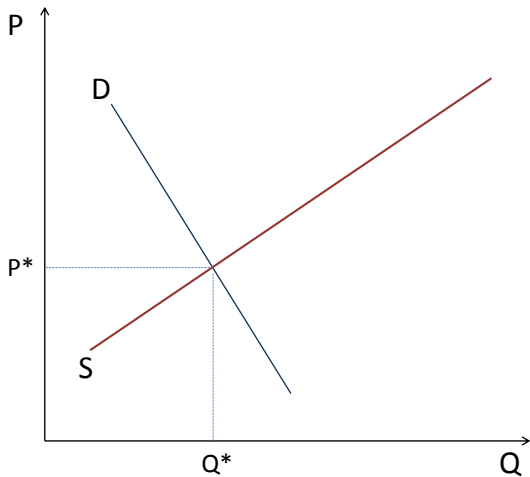
$$P \text{ such that } Q^D = Q^S$$

- Getting to equilibrium is the work of Adam Smith's invisible hand

Equilibrium in a Graph



Equilibrium in a Graph



Equilibrium in a Graph

Use * to denote
equilibrium

Equilibrium in Algebra: Price

Using our tomato example

$$Q^D = Q^S$$

Equilibrium in Algebra: Price

Using our tomato example

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

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

$$Q^D = Q^S$$

$$1000 - 200P = 200P - 200$$

$$1200 = 400P$$

$$P = 3$$

Equilibrium in Algebra: Quantity

- Before putting pencil to paper, are Q^S and Q^D equal or different?

Equilibrium in Algebra: Quantity

- Before putting pencil to paper, are Q^S and Q^D equal or different? They must be the same.

Equilibrium in Algebra: Quantity

- Before putting pencil to paper, are Q^S and Q^D equal or different? They must be the same.
- How do you find them?
- Using our tomato example

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

Equilibrium in Algebra: Quantity

- Before putting pencil to paper, are Q^S and Q^D equal or different? They must be the same.
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$$\begin{aligned}Q^D &= 1000 - 200P \\&= 1000 - 200(3) \\&= 400\end{aligned}$$

Equilibrium in Algebra: Quantity

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$$Q^S = 200P - 200$$

Equilibrium in Algebra: Quantity

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$$\begin{aligned}Q^S &= 200P - 200 \\&= 200(3) - 200\end{aligned}$$

Equilibrium in Algebra: Quantity

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- How do you find them?
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$$\begin{aligned}Q^S &= 200P - 200 \\&= 200(3) - 200 \\&= 400\end{aligned}$$

Getting to Equilibrium

That's just the math. The magic is getting there!

- Suppose we are out of equilibrium and $Q^D > Q^S$

Getting to Equilibrium

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- Suppose we are out of equilibrium and $Q^D > Q^S$
 - Seems like a shortage
 - Price increases until we reach equilibrium
- Suppose we are out of equilibrium and $Q^S > Q^D$

Getting to Equilibrium

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- Suppose we are out of equilibrium and $Q^D > Q^S$
 - Seems like a shortage
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- Suppose we are out of equilibrium and $Q^S > Q^D$
 - Seems like a surplus
 - Price falls until we reach equilibrium

Getting to Equilibrium

That's just the math. The magic is getting there!

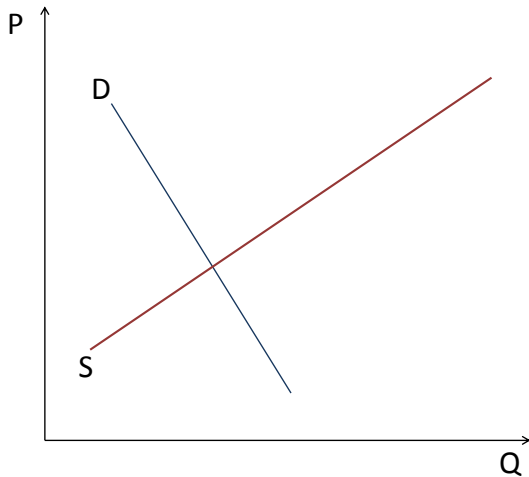
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 - Seems like a shortage
 - Price increases until we reach equilibrium
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 - Seems like a surplus
 - Price falls until we reach equilibrium

Note that these are all movements along existing curves.

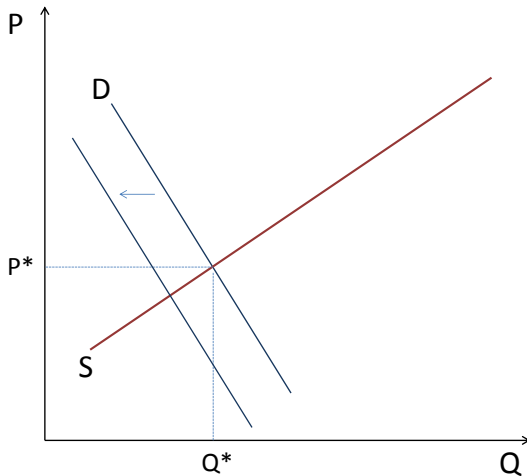
Impact of Shift in Demand

- Suppose that we learn that tomatoes ruin the fluoride on your teeth
- What happens to the demand curve?

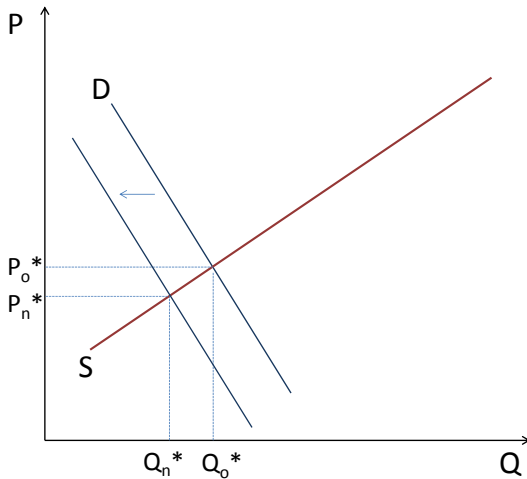
Where Does Demand Curve Go?



Where Does Demand Curve Go?



Where Does Demand Curve Go?



What does this mean for equilibrium?

New Demand Curve

- Assume that for any price, the quantity demanded of tomatoes falls by 500
- $Q^{D,original} = 1000 - 200P$

$$Q^{D,new} =$$

What does this mean for equilibrium?

New Demand Curve

- Assume that for any price, the quantity demanded of tomatoes falls by 500
- $Q^{D,original} = 1000 - 200P$

$$Q^{D,new} = Q^{D,original} - 500$$

What does this mean for equilibrium?

New Demand Curve

- Assume that for any price, the quantity demanded of tomatoes falls by 500
- $Q^{D,original} = 1000 - 200P$

$$\begin{aligned}Q^{D,new} &= Q^{D,original} - 500 \\&= 1000 - 200P - 500\end{aligned}$$

What does this mean for equilibrium?

New Demand Curve

- Assume that for any price, the quantity demanded of tomatoes falls by 500
- $Q^{D,original} = 1000 - 200P$

$$\begin{aligned}Q^{D,new} &= Q^{D,original} - 500 \\&= 1000 - 200P - 500 \\&= 500 - 200P\end{aligned}$$

What does this mean for equilibrium?

Find new equilibrium

As before, set $Q^S = Q^{D,new}$

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What does this mean for equilibrium?

Find new equilibrium

As before, set $Q^S = Q^{D,new}$

$$\begin{aligned} Q^S &= Q^{D,new} \\ 200P - 200 &= 500 - 200P \end{aligned}$$

What does this mean for equilibrium?

Find new equilibrium

As before, set $Q^S = Q^{D,new}$

$$\begin{aligned}Q^S &= Q^{D,new} \\200P - 200 &= 500 - 200P \\P &= 1.75\end{aligned}$$

Find equilibrium quantities, first $Q^{D,new}$

$$\begin{aligned}Q^{D,new} &= 500 - 200P \\&= 500 - 200(1.75)\end{aligned}$$

What does this mean for equilibrium?

Find new equilibrium

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$$\begin{aligned}Q^S &= Q^{D,new} \\200P - 200 &= 500 - 200P \\P &= 1.75\end{aligned}$$

Find equilibrium quantities, first $Q^{D,new}$

$$\begin{aligned}Q^{D,new} &= 500 - 200P \\&= 500 - 200(1.75) \\&= 150\end{aligned}$$

What does this mean for equilibrium?

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As before, set $Q^S = Q^{D,new}$

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Then Q^S

$$Q^S = 200P - 200$$

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$$\begin{aligned}Q^{D,new} &= 500 - 200P \\&= 500 - 200(1.75) \\&= 150\end{aligned}$$

Then Q^S

$$\begin{aligned}Q^S &= 200P - 200 \\&= 200(1.75) - 200 \\&= 150\end{aligned}$$

We find

- Price falls
- Equilibrium quantity falls

For Next Class

- Do problem set 1
- 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?