AS.180.102 (04): Elements of Microeconomics

Chapter 4 - Market Forces of Supply and Demand

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Reminders

- **Next week this session will be on zoom**
  - I will send the zoom link via canvas
  - Attendance will still be taken
  - Although I will not require cameras to be on, I would appreciate and encourage it
- Assignment 1 is due by 11:59pm tonight

Questions from last week?

Outline

These slides will introduce the critical concepts of supply and demand: the behavior of firms and individuals as they interact in competitive markets.

Main Takeaway

The two forces of supply and demand interact to determine equilibrium prices.

Features of a market

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2. What does it mean for a market to be *competitive*?
3. What makes a market perfectly competitive?

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3. What makes a market perfectly competitive?
   1. All goods are identical
   2. No buyer or seller has influence over the market price
   3. All actors are *price-takers*

Demand

1. What is the *quantity demanded* of a good?
2. What is the *law of demand*?
3. What is the difference between a demand schedule and a demand curve?

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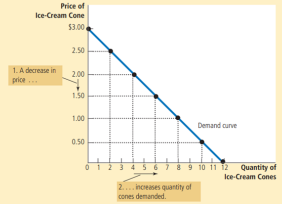
FIGURE 1

Catherine's Demand Schedule and Demand Curve

The demand schedule is a table that shows the quantity demanded at each price. The demand curve, which graphs the demand schedule, illustrates how the quantity demanded of the good changes as its price varies. Because a lower price increases the quantity demanded, the demand curve slopes downward.

Price of Ice-Cream Cone	Quantity of Cones Demanded
$0.00	12 cones
0.50	10
1.00	8
1.50	6
2.00	4
2.50	2
3.00	0



Market demand

- **Market demand**: The summation of demand curves across all individuals in a market
- Demand curves are not fixed in time; many things might cause a demand curve to increase or decrease.
  - Income
  - Tastes
  - Expectations
  - *Generally anything that will change consumer behavior*

Types of Goods

- **Normal good**: A good for which demand increases when incomes increase
- **Inferior good**: A good for which demand falls when incomes increase

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- **Complements**: Two goods that go well together
- **Substitutes**: Two goods that fulfill the same purpose

1. What are some examples of each?
2. If goods A and B are complements, what will happen to demand for good B if the price of good A falls? What if they are substitutes?

Example

In 2022 Maryland passed a gas tax holiday, temporarily lowering the price of gasoline. Some critics said that lowering the tax would make people want to buy more gasoline and might end up actually *increasing* the price.

1. Will the tax decrease cause the demand curve for gasoline to shift?
2. What are some complements and what are some substitutes for gasoline?
3. What are some factors that might cause the demand curve for gasoline to shift?

Supply

Now we'll talk about the other side of the market: *supply*.

There are lots of similarities between the two:

- **Quantity supplied**: The amount sellers are willing and able to sell
- **Law of supply**: All else equal, the quantity supplied of a good increases as price increases
- Supply schedules and supply curves
- Market supply

Shifts in supply curve

- Just as with demand, there are differences between movements along a supply curve and a shift in the curve itself

1. What are some variables that could shift the supply curve?

Shifts in supply curve

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1. What are some variables that could shift the supply curve?
    1. Technology
    2. Expectations
    3. Number of sellers
    4. Input prices

Equilibrium

- **Equilibrium**: The point at which demand and supply are balanced.
  - This is usually what economists are interested in

1. What are the two components of market equilibrium?

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- **Equilibrium**: The point at which demand and supply are balanced.
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1. What are the two components of market equilibrium?
   1. Equilibrium price (*market-clearing*)
   2. Equilibrium quantity

- At equilibrium:

$$Q_D = Q_S$$

Equilibrium

- **The law of supply and demand**: The actions of individuals in the market will naturally bring it into equilibrium
  - If there is excess supply there is a *surplus*
  - If there is excess demand there is a *shortage*

Equilibrium

- **The law of supply and demand**: The actions of individuals in the market will naturally bring it into equilibrium
  - If there is excess supply there is a *surplus*
  - If there is excess demand there is a *shortage*
- Think about both situations:
  1. What is the relationship between quantity demanded and quantity supplied?
  2. Is the price above or below equilibrium?

Market for gasoline

- Let's return to our question about gasoline
  1. How would we draw supply and demand curves for the market of gasoline, and show the impact of the decrease in the gas tax?
  2. Does this represent a change in the demand curve or the supply curve?

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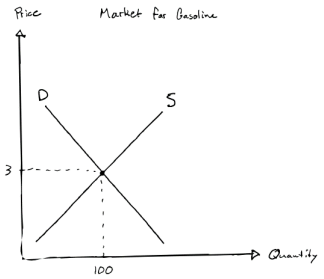

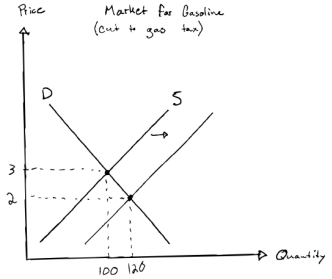

Market for gasoline

- The tax cut caused the supply curve to shift to the right
  - For any given price, sellers will supply a larger quantity at a lower price.
- Now suppose all cars experience a sudden increase in fuel efficiency: we can drive more miles with the same amount of gasoline.
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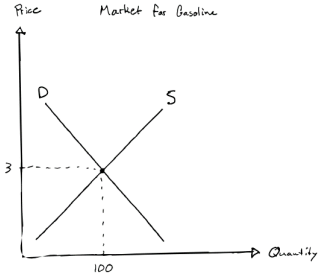

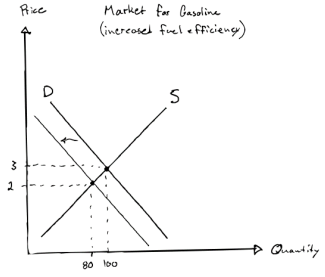

Market for gasoline

- Increased fuel efficiency shifts our demand curve to the left
  - For a given price, we buy less gasoline than before
- Now think about the two changes together; the gasoline tax is lowered, and fuel efficiency is increased.
  1. What is the net effect on the equilibrium quantity and price?

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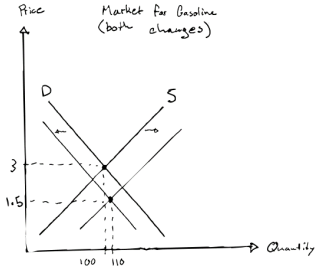

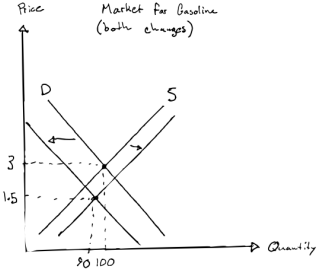

Market for gasoline

- The supply curve shifts to the right, and the demand curve shifts to the left
  - The equilibrium price is unambiguously lower
  - The equilibrium quantity may increase or decrease; it depends on the *magnitude* of the two shifts
- Note that this falls right out of our supply and demand side analyses

	Tax cut *(Supply shift)*	Efficiency increase *(Demand shift)*	Result
Price	↓	↓	↓
Quantity	↑	↓	?

Market for gasoline

1. Now suppose fuel efficiency suddenly gets *worse*. How does demand and supply change?

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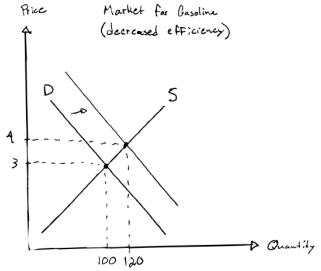

Market for gasoline

- The effect is the opposite as before: decreased fuel efficiency shifts our demand curve to the right
  - For a given price, we buy more gasoline than before
- Now think about the two changes together; the gasoline tax is lowered, and fuel efficiency is decreased.
  1. What is the net effect on the equilibrium quantity and price?

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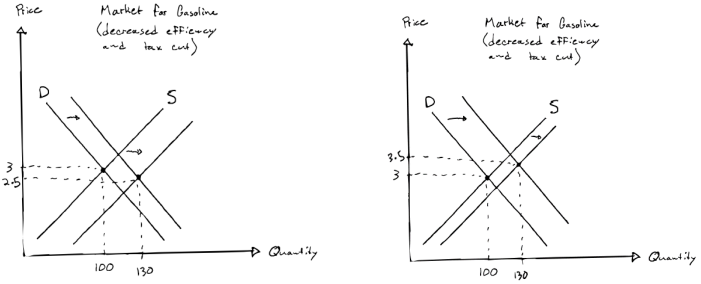

Market for gasoline

- The supply and demand curves both shift to the right
  - The equilibrium quantity is unambiguously higher
  - The equilibrium price may increase or decrease; it depends on the *magnitude* of the two shifts
- Note again that this falls right out of our supply and demand side analyses

	Tax cut *(Supply shift)*	Efficiency decrease *(Demand shift)*	Result
Price	↓	↑	?
Quantity	↑	↑	↑

Market for Orioles tickets

- In the last few years, the Orioles have gone from one of the worst teams in MLB to one of the best.
  1. How should we draw the supply and demand curves for Orioles tickets?
     - ⋆ Does the supply curve look like it did in the gasoline market?
  2. Will the team's improved record effect supply or demand, and why?
  3. What will happen to equilibrium price and quantity?

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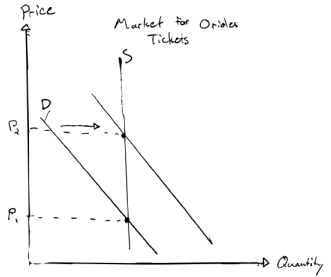

Market for Orioles tickets

- Supply curve is vertical: why?
- A better team means more fans want to attend more games, shifting the demand curve to the right
- The equilibrium quantity is the same, but the price has increased

1. Is this a realistic way to think about the market for tickets?

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1. Is this a realistic way to think about the market for tickets?
   - In some ways: we really do see ticket prices increasing, and the number of seats really is fixed
   - In reality, not all seats are the same (different markets?) and not all seats get sold (there are fixed costs and frictions)
   - Don't worry about any of this for now!