Lecture 6: Market Equilibrium, Demand and Supply Shifts

Clicker Question

A firm is willing and able to produce and sell a larger quantity of goods at higher prices…
Market Equilibrium

- A system is in equilibrium when there is no tendency for change.

- A competitive market is in equilibrium at the market price if the quantity supplied equals the quantity demanded.

  - We will show that in this equilibrium, the price and quantity have no tendency to change.
  
  - At the market equilibrium, the price is called the equilibrium price, …
  
  - …and the quantities supplied and demanded are called the equilibrium quantity.

Example: The Market for Milk

- In the market for milk described previously, market supply and demand are as follows.

<table>
<thead>
<tr>
<th>Price ($)</th>
<th>Market Supply (Qts/day)</th>
<th>Market Demand (Qts/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.20</td>
<td>300</td>
<td>3200</td>
</tr>
<tr>
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<td>600</td>
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- The market equilibrium is described by ____.
Equilibrium in the Market for Milk on a Graph

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Movement towards Market Equilibrium

- If the price is **above the equilibrium price**, 
  - quantity supplied > quantity demanded, 
  - **excess supply**. 
  - Sellers cannot sell as much as they want, 
  - so they will tend to offer buyers a lower price.

- Therefore, the price will tend to move downwards towards the equilibrium price.
If the price is **below the equilibrium price**, 
- quantity demanded > quantity supplied 
- **excess demand**, 
- buyers will not be able to buy all they want to buy, 
- so they will tend to offer sellers a higher price.

Therefore, the price will tend to move pwards towards the equilibrium price.

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**Clicker Question**

Which of the following prices leads to ....?

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The Effect of Price Changes

Suppose the price is at $4...

...so that a buyer is at point A on his demand curve. If Price changes to $3...

...the quantity demanded changes from 40 to 60,

...so the buyer moves ALONG his original demand curve to point B, ...

...because the same demand curve yields the quantity demanded at every reasonable price.

Likewise, if price changes, a seller will MOVE ALONG her original supply curve, because the same supply curve yields the quantity supplied at every reasonable price.
Demand-Curve Shifts

- Changes in some demand-related factors affect the quantities demanded at every price:
  - Consumer preferences
  - Income of consumers
  - Prices of other consumer goods
  - Expectations about the future

- Such changes can affect demand in general,…

- …and they can change the position of the entire demand curve.

- But those factors usually do NOT affect the position of the supply curve.

Changes in Consumer Preferences

- Consumer preferences change for many reasons.
  - New information
  - Fashion
  - Experience

- These changes can shift demand.
Example: Preference for Milk

New evidence emerges that milk cures baldness in men.

More milk demanded at every price.

New market equilibrium:
Higher price
Larger quantity

Example 2: Preference for Milk

New evidence shows that milk [is good for people]
…but too much milk [is bad].

In new equilibrium:
Lower price
Smaller quantity
(but that depends on where the curves cross)
Clicker Question

Suppose a medical study demonstrates that red wine is good for the heart...

Income and Demand

Demand is affected by a person’s income.

- *Normal* goods: demand increases as income rises.

- *Inferior* goods: demand increases as income falls.
**Example:** Large Apartments and Income in Washington DC

Government salaries increase.

In new equilibrium:
- Much higher price
- Slightly larger quantity

Large apartments are normal goods,…

but the supply curve is almost vertical,…

because it takes a long time to supply more apartments.

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**Substitutes**

- Two goods are **substitutes** if you can use one of them instead of the other.

  - Demand for a good (chicken) **increases** when the price of a substitute (hamburger) rises,…

  - because consumers want to buy less of the substitute,…

  - and consume more of the first good instead—at every price.
**Example: Car rentals and Airfares**

Suppose airfares are rising sharply.
(And the quality of air travel is falling.)

Road travel is a substitute for air travel, so demand for rental cars will increase.

In new equilibrium:
- Higher price
- More car rentals

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**Complements**

- Two goods are *complements in demand* if you normally use both of them together.

- Demand for a good **decreases** when the price of a complement rises,…
- because if the complement is too expensive, the first good is less useful.
**Example:** Motel Rooms and Gasoline Prices

Suppose gasoline prices increase.

Motel rooms and gasoline are complements.

In new equilibrium:
- Much lower price
- Somewhat fewer rooms rented

### Supply-Curve Changes

- Changes in some supply-related factors will affect the quantities supplied at every price:
  - Prices of Inputs
  - Technology
  - Economic Environment
    - taxes
    - government regulations
    - weather
- Changes in these factors affect supply in general,…
- …and they can shift the entire supply curve.
- But they usually do **NOT** affect the position of the demand curve.
**Example: Supply of Milk and Mad Cows**

Mad-cow disease kills many cows.

*In new equilibrium:*
- Higher price
- Lower quantity

**Example: Supply of Milk and Hormones**

BST is discovered.

Causes each cow to give much more milk.

*In new equilibrium:*
- Lower price
- Higher quantity
Example: Opium and the Taliban

In 2001, after the Afghan Taliban regime fell,...
restrictions on opium production were relaxed.

In new equilibrium:
Lower price
Higher quantity

Clicker Question
If household incomes increase,...
End of File