Lecture 4: Markets, Prices and Demand

If you plan to stay in the course, and you haven’t bought and registered your clicker and clicker subscription, do so this weekend. Follow the instructions on the course website under Course Information > How to Buy a Clicker.

Clicker Question
Competition

- Competition is an important force of any free-market economic system.
- The analysis of competition will occupy a major part of this course.
- Our analysis of competition will focus on selling and buying rather than on barter.
- And the determination of prices is a very important feature of selling and buying.

Prices

- Prices are defined when money is used for selling and buying.
- The price of a good is the amount of money exchanged for one unit of the good.
- Prices are useful, because they allow people to compare the opportunity costs of different goods.
Perfect Competition

- The phrase “perfect competition” describes a special type of market, one with many buyers and many sellers (and other properties).

- A perfectly-competitive market represents an extreme case that doesn’t exist in the real world.

- Perfect competition is a model—a part of the more general free-market model.

- The perfect-competition model is a good description of some real markets,…

- …but many other real markets are different.

Markets with Perfect Competition

Characteristics of the Model

- One homogeneous good
- Many sellers and buyers
- Voluntary exchange
- Full information and perfect foresight
- Rational, self-interested agents
- Free entry to the market
  [used later in the course]
“Law” of One Price

At any given time *in a perfectly competitive market*, *identical goods* must have the same price.

- The law makes sense because…
  *Under perfect competition, transactions at two or more prices would not be completed.*

- So suppose two transactions are in progress at two different prices.

- What would happen?

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Can two prices coexist in a competitive market?

*Why are these guys losers?*
The losers know who they are before they make the exchange (*full information*).

They want to do better (*rational self-interest*).

The losers think about trading with each other at a price of 2 instead of trading with their original partners.

- Now the first loser pays 2 instead of 3…
- …and the second loser gets 2 instead of 1.

So the losers decide to cancel the original transactions and trade with each other.

The original proposed exchanges at two different prices will not be completed!

Arbitrage

Suppose that

- Chiara is ready to buy from Marc for $1, and...
- Kevin is ready to buy from Stefania for $3.
- And suppose that Marc and Kevin don’t know that they are *“losers.”* [*imperfect competition*]

Then Alberto (a shrewd businessman) could

- offer to buy from Marc for $1.50,…
- and sell to Kevin for $2.50.
- Marc and Kevin would be happy,…
- and Alberto would earn a tidy profit of $1.
Alberto is an “arbitrageur.”

He takes advantage of price differences in the same product to “buy low and sell high.”

In markets that are not perfectly competitive, arbitrageurs bring prices closer together,…
and extend the reach of the “law of one price.”

Arbitrage is very common in financial markets.

Arbitrageurs are “important players,” …
spending millions of dollars to take advantage of tiny price differences.

Supply and Demand

We’ve discussed voluntary exchange in the free-market model.

We’ve discussed when people would exchange goods (or sell and buy),…

…but we haven’t analyzed the quantity they would sell or buy.
The law of one price, tells us that a competitive market has only one price,…

but it doesn’t tell us what the price will be!

To predict *prices and quantities*, we need to study *supply and demand*…
○ for individuals,
○ and then for the entire market.

How can economists predict *prices* and *quantities* bought and sold?

Suppose there are a hundred consumers who want to buy milk,…

and a hundred farmers who want to sell milk.

And suppose they are going into a large room to bargain over prices and quantities to be bought and sold.

(Imagine that the farmers will go home and produce the milk *after* they reach agreement with the consumers.)
You, the economist, want to predict what quantities will be traded and what the price will be.

You have an opportunity to interview each buyer and each seller, one at a time.

What questions should you ask?

Interviewing Buyers

Suppose you are interviewing a buyer named Emily.

You should pose the following questions:

“Emily, suppose you could buy milk for $1.20 per quart (or per liter). How much milk would you want to buy?
“Now, suppose you could buy milk for $1.00 a quart. If nothing else had changed, how much milk would you want to buy in that case?

... 

Suppose you could buy milk for $.20 a quart. How much would you want to buy?

You should pose the same question for all reasonable prices.

Keep in mind that all of these questions are hypothetical,…

because you are asking people what they would do at different possible prices,...

but they don’t know what the price will be.

Interviewing Sellers

Suppose you are interviewing a seller named Farmer Jones.

You should pose the following questions:

“Farmer Jones, suppose you could sell milk for $.20 per quart (or per liter). How much milk would you want to sell?
“Now, suppose you could sell milk for $0.40 a quart. *If nothing else had changed*, how much milk would you want to sell in that case?

Suppose you could sell milk for $1.20 a quart. How much would you want to sell?

You should pose the same question for all reasonable prices.

Again, all of these questions are *hypothetical* (about what people *would* do at various possible prices).

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Using the Information

The information you get from buyers is called *demand*.

The information you get from sellers is called *supply*.

If you have the demand information from all buyers and the supply information from all sellers, then you can predict:

- the *price that will be set* when the bargaining ends, and
- the *quantities that each person will buy or sell* after the price is agreed to.

In this part of the course, we explain how and why.
The Demand Schedule

- The demand schedule specifies how much of a good a person is willing to buy at various prices (with other things staying the same).

**Example:** Emily’s Demand for Milk

<table>
<thead>
<tr>
<th>Price ($$)</th>
<th>Quantity (Qt’s/mo)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.20</td>
<td>10</td>
</tr>
<tr>
<td>1.00</td>
<td>20</td>
</tr>
<tr>
<td>0.80</td>
<td>40</td>
</tr>
<tr>
<td>0.60</td>
<td>60</td>
</tr>
<tr>
<td>0.40</td>
<td>80</td>
</tr>
<tr>
<td>0.20</td>
<td>120</td>
</tr>
</tbody>
</table>
Emily’s Demand Curve for Milk

<table>
<thead>
<tr>
<th>P</th>
<th>Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.20</td>
<td>120</td>
</tr>
<tr>
<td>0.40</td>
<td>80</td>
</tr>
<tr>
<td>0.60</td>
<td>60</td>
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<tr>
<td>0.80</td>
<td>40</td>
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<tr>
<td>1.00</td>
<td>20</td>
</tr>
<tr>
<td>1.20</td>
<td>10</td>
</tr>
</tbody>
</table>

(Unlike mathematical graphs, the demand curve has the **independent variable** on vertical axis and the **dependent variable** on the horizontal axis.)

**Clicker Question**
Emily’s demand curve is *downward* sloping:

- At a high price, she will want to buy a small quantity of milk.
- But if she faces a lower price, she will want to buy more milk.
- Why???

**Emily’s Demand for Milk**

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity Demanded</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00</td>
<td>140</td>
</tr>
<tr>
<td>0.20</td>
<td>120</td>
</tr>
<tr>
<td>0.40</td>
<td>100</td>
</tr>
<tr>
<td>0.60</td>
<td>80</td>
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<tr>
<td>0.80</td>
<td>60</td>
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<td>1.00</td>
<td>40</td>
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<tr>
<td>1.20</td>
<td>20</td>
</tr>
<tr>
<td>1.40</td>
<td>0</td>
</tr>
</tbody>
</table>

Why does Emily’s demand curve slope downwards?

- Why does Emily demand more milk at lower prices?
- **Answer:** Because lower prices justify putting milk to less and less important uses:
  - At $0.90 per quart, she would drink two glasses a day.
  - At $0.50, she would also feed milk to her kittens.
  - At $0.10, she would also…