1 Optimization and Allocation

14.01 Principles of Microeconomics, Fall 2007
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Lecture 1

Overview: Themes, Types of Markets, Economic Measurement, Economic Analysis

Microeconomics is a branch of economics that studies how individuals and firms make decisions to allocate limited resources, typically in markets where goods or services are being bought and sold.

Outline

1. Chap 1: Optimization and Allocation
2. Chap 1: Definition and Various Type of Markets
3. Chap 1: Economic Measurement
4. Chap 1: Economic Analysis

1 Optimization and Allocation

Consumer theory. Maximize preference (with limited income or time)

Producer theory. Maximize profit (with limited capital)

2 Definition and Various Type of Markets

Market. A place where buyers and sellers come together to exchange some product or good.

Product and Factor Markets

<table>
<thead>
<tr>
<th>Market</th>
<th>Buyers</th>
<th>Sellers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Market</td>
<td>individuals</td>
<td>firms</td>
</tr>
<tr>
<td>Factor Market</td>
<td>firms</td>
<td>individuals</td>
</tr>
</tbody>
</table>

Table 1: Product and Factor Markets.
3 Economic Measurement

In a factor market, buyers are firms who need to hire workers and borrow money for capital expenditure, and sellers are individuals who provide labor and save money in banks.

Types of Markets Based on Influence on Price

<table>
<thead>
<tr>
<th>Market Type</th>
<th>Products</th>
<th>Sellers</th>
<th>Buyers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competitive</td>
<td>homogeneous</td>
<td>many</td>
<td>many</td>
</tr>
<tr>
<td>Monopolistic</td>
<td>heterogeneous</td>
<td>many</td>
<td>many</td>
</tr>
<tr>
<td>Oligopoly</td>
<td>a few</td>
<td>many</td>
<td></td>
</tr>
<tr>
<td>Monopoly</td>
<td>one</td>
<td>many</td>
<td></td>
</tr>
<tr>
<td>Monopsony</td>
<td>many</td>
<td>one</td>
<td></td>
</tr>
<tr>
<td>Oligopsony</td>
<td>many</td>
<td>a few</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Types of Markets Based on Influence on Price.

Table 2 shows different markets based on product differentiation and influence on price. Influence on price increases in moving from Competitive markets to Monopoly.

3 Economic Measurement

Flow and Stock Variables

Stock variables. Not measured with respect to time. e.g. price, wealth, inventories.

Flow variables. Measured per some unit of time. e.g. production, consumption, income.

Two additional flow variables:

Expenditure.

\[ \text{EXPENDITURE} = \text{PRICE} \times \text{CONSUMPTION}. \]

Revenue.

\[ \text{REVENUE} = \text{PRICE} \times \text{PRODUCTION}. \]

Prices

Nominal price. The absolute or current dollar price of a good or service when it is sold.

Real price. The price relative to an aggregate measure of prices or constant dollar price. It also measures prices relative to others. Price after adjustment for inflation.
**4 Economic Analysis**

**CPI (Consumer Price Index).** Total spending on a market basket of goods.

**Formula of inflation rate:**

\[
\text{(Gross) Inflation rate} = \frac{\text{CPI (current year)}}{\text{CPI (base year)}}.
\]

**Formula of real price:**

\[
\text{Real price} = \frac{\text{Nominal price (current year)}}{\text{Inflation rate (base year to current year)}},
\]

or

\[
\text{Real price} = \frac{\text{Nominal price (current year)}}{\text{CPI (current)} / \text{CPI (base)}}.
\]

**Example.** For instance, the average tuition of college:

<table>
<thead>
<tr>
<th>Year</th>
<th>Nominal Price</th>
<th>CPI</th>
<th>Real Price (base year 1970)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>2,530</td>
<td>38.8</td>
<td>2,530</td>
</tr>
<tr>
<td>1990</td>
<td>12,018</td>
<td>130.7</td>
<td>3,569</td>
</tr>
<tr>
<td>2002</td>
<td>18,273</td>
<td>181.0</td>
<td>3,917</td>
</tr>
</tbody>
</table>

Table 3: Average Tuition of College 1970 to 2002.

Notice that from 1970 to 2002 nominal price increases by 7 times but real price increases by 1.5 times.

**4 Economic Analysis**

**Positive analysis.** Study the relationship of cause and effect (Questions that deal with explanation and prediction).

**Normative analysis.** Analysis examining questions of what ought to be (Often supplemented by value judgments).