Fifth Lecture

Supply and Demand

Demand, Supply, Equilibrium
- Why?
- Dominant / influential
- Quantitative curse

Market
- Attributes: commodity, space, time
- Dimensions: quantity/price

Method
- Desire/wants
- Actual=desired
- Supply/Demand as basic tools

Demand
- What is Demand?
- Quantity Demanded vs. Demand
- Determinants
- Function/variables/coefficients
- Comparative statics and “ceteris paribus”
- Why is demand downward sloping?
- Bentham’s utilitarianism
- Emotionmetrics
- Neoclassicists: From offence to defense
- From principles to mathematics
- Jevon’s calculus of pleasure and pain
- Substitution and income effects
- An actual demand curve? Psychology and notional time
- Shifts in Demand

Supply
- What is Supply?
- Quantity Supplied vs. Supply
- Determinants
- Why does Supply slopes upward?
- Static time scales: momentary, short, long
- Shifts in Supply

Equilibrium
- Excess demand, excess supply
- Equilibrium: desired vs. rest
- Laws of supply and demand
- Markets as allocation mechanisms
- Profit signals, or the “Will of God”
Theory and Praxis
- Anybody seen Demand? Supply?
- Equilibrium? What equilibrium?
- Stability?
- The “Despite” Word

Why equilibrium?
- Is equilibrium stable? Does it exist?
- What can static analysis tell us about a dynamic world?
- Can mathematics deal with novelty?
**DEMAND**

\[ Q^d = F (P; Y, Y_{dis}, P_{sub}, P_{com}, \ldots T) \]

\[ Q^d = F \text{(price; average income, income distribution, price of substitutes, prices of complements \ldots tastes)} \]

\[ Q^d_{\text{[tons/week]}} = \frac{500}{P_{\text{[$/lb]}}} + 0.1 \times Y_{\text{[mn$/week]}} + 100 \times P_{\text{pears[$/lb]}} \]

\[ Q^d = F (P; Y, Y_{dis}, P_{sub}, P_{com}, \ldots T) \]
### Horizontal Summation

<table>
<thead>
<tr>
<th>P ($/lb)</th>
<th>Q Demanded (lb/week)</th>
<th>Q Supplied (lb/week)</th>
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**SUPPLY**

\[ Q^s = F (P; P_{input}, P_{sub}, N, \text{Tech}) \]

\[ Q^s = F (\text{price}; \text{price of inputs, prices of alternative crops, number of producers, technology}). \]
Hypothetical Supply Curves

- Momentary
- Short Run
- Long Run (crs)
- Long Run (irs)

Price ($ / lb) vs. Quantity Supplied (tons / week)
Law of supply and demand

<table>
<thead>
<tr>
<th>Shift</th>
<th>Reason (example)</th>
<th>Price</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>Demand ↪</td>
<td>Consumer taste</td>
<td>↑</td>
<td>↑</td>
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<tr>
<td>Demand ↪</td>
<td>Price of substitutes</td>
<td>↓</td>
<td>↓</td>
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<tr>
<td>Supply ↤</td>
<td>New technique</td>
<td>↓</td>
<td>↑</td>
</tr>
<tr>
<td>Supply ↤</td>
<td>Price of input</td>
<td>↑</td>
<td>↓</td>
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Relative Price* and Quantity of Shoes in the U.S.A.

* 'Relative Price' is computed by dividing the price index for shoes by the price index for personal consumption expenditure. Quantity refers to a chain type index.

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Relative Price* and Quantity of Shoes in the U.S.A.

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Stability or Instability?

Quantity responds first (Marshallian)

Price responds first (Walrasian)

D2  D1  S

Price ($ / lb)

Quantity Supplied (tons / week)

0  2  4  6  8  10  12  14  16  18  20  22  24  26  28  30  32  34  36  38  40

0.0  0.5  1.0  1.5  2.0  2.5  3.0  3.5  4.0  4.5  5.0  5.5  6.0  6.5
“Because” and “Despite” in the Oil Market

- “Oil prices rise as OPEC output cut nears”

- “World: Commodities - Oil prices fall despite OPEC output cut”
  EIU Viewswire New York: Mar 31, 2004. p. n/a

- “Oil prices slide in anticipation of rise in output”

- “Oil prices soar despite rise in output”

- “Oil prices fall on rising US stockpile”

- “Crude markets unphased by OPEC; oil prices rise despite stock build”
  Octane Week Potomac: Jun 26, 2000. Vol. 15, Iss. 26, p. 1

- “OPEC agreement means oil prices likely to increase”

- “Oil prices fall despite OPEC agreement”

- “Oil prices soar on OPEC pact to cut output”

- “Oil price falls despite cut in output”

- “Oil prices fall again in response to Bush’s hope for Mideast accord and signs of ample supplies”

- “Oil price rises despite ample supply”

- “Oil prices rise amid reports Iraq jets attacked operations at Iran terminal”

- “World oil prices fall despite Iran-Iraq war”