More Applications of the Choice Model
Intermediate Microeconomics

Main topics

- Application of the Choice Model: Consumer Confidence
- Some Other Applications
- Derive the Market Demand from the Individual Choice Model
  - Consumer Surplus
  - Price Elasticity of Demand

Consumer Confidence after the WTC Crisis (a practical example of the consumer choice model)

- One of the key factors in predicting the economic effects of the WTC crisis will be how businesses forecast what they expect to happen to consumer confidence.
- Today, The Conference Board, the organization responsible for the nation’s official “consumer confidence index,” will be putting out a statement about how one might expect.
- Macroeconomic theory shows that falling consumption demand is contractionary. If consumer confidence is substantially disturbed, it can push the economy into a recession.
- Let’s look at some of the underlying theory that is derived from the consumer choice theory.
Consumers' Time Preferences

- Households choose to spend or save based on their preferences and the perceived trade-offs.
- Let's consider “consumption today” (Ct) and “consumption tomorrow” (Ct+1) as two goods over which consumers have standard preference orderings.
- How do they choose their optimal bundle? I.e. their optimal time allocation of consumption?
- For given preferences, the choice depends on the constraints.

Households' Savings Constraint

Suppose

\[ I_t = C_t + S_t \]
\[ C_{t+1} = (1+i) S_t \]

where \( I_t \) is the household's income at time t, \( S_t \) is savings at time t, and i is the interest rate that accrues over one period (from t to t+1).

How would you write the household's savings constraint? (i.e. its budget constraint for consuming today v. consuming tomorrow?)

Consumer's Time-Preference Model

- If consumers' confidence in the economy should fade,
  - How would you expect that to be represented in this model?
  - What predictions would you make about savings v. consumption?
Flat-fee Cell Phone Service
(Example: variations on the budget constraint)
(See also Mansfield & Yohe, pp. 66-67)

- Verizon, Sprint and other cell phone service providers have come out with "flat-fee" service packages. For a flat fee, you get X minutes of phone service free of any per-minute charges. Then for any minutes exceeding X, you are charged a per-minute fee.
- For example, a package recently offered by Verizon in its Northeast Corridor Plan was $39 a month for 300 minutes, and $0.26 for all minutes exceeding 300.
- Why do they do this?

Derive the “flat-fee” phone service budget constraint.

- Suppose Verizon offers the following contract:
  - 300 minutes per month for $40 (fixed fee)
  - $0.25 per minute for any minutes exceeding 300 (variable fee)
- Let good X be cell phone service and good Y be all other goods.
  - Suppose also that the price of Y is $1 and you have $80 to spend on X and Y.
- How would you draw this constraint?
  - Identify discrete points on the constraint:
    - Suppose you decide not to contract for cell phone service.
    - Suppose you contract for 300 minutes and never use more than 300 minutes of service.
    - Suppose you contract for cell phone service and spend all your money on cell phone service. How many minutes total can you purchase?

The “flat-fee” budget constraint

Identify discrete points on the constraint:

- Suppose you decide not to contract for cell phone service.
- Suppose you contract for 300 minutes and never use more than 300 minutes of service.
- Suppose you contract for cell phone service and spend all your money on cell phone service. How many minutes total can you purchase?
The “flat-fee” budget constraint

What if Verizon, instead, charged a fixed per minute fee for each minute of service? How would the constraint compare? Here are two possibilities:

<table>
<thead>
<tr>
<th>Minutes of Service</th>
<th>Other Goods</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>460</td>
</tr>
<tr>
<td>300</td>
<td>460</td>
</tr>
</tbody>
</table>

Labor-Leisure Model

Suppose an employee has 24 hours to allocate between labor and leisure.
Labor is a means to an end. By working, she earns an hourly wage.
She enjoys both earnings (money) and leisure, and her preferences for each exhibit standard indifference curves.
What does her constraint on the earnings-leisure choice look like?

- Consider a wage of $10 per hour, then a wage of $5 per hour.

Labor-Leisure Model: An Implication

- It is often believed that higher wages (earnings) induce people to work more. Does this model predict such a response?
- Under what conditions?
  - Only if leisure has a weak income effect.
The "demanding high-salary job"

- Using labor-leisure model, now add another feature.
- Suppose the employee has a choice between two jobs.
  - One has flexible hours (which she may choose herself, which pays $5 an hour,
    and the other is a high-paying, but demanding job. By "demanding," let's suppose the job requires a minimum of 12 hours a day.
- How would you expect preference for money and leisure to differ for people who do or do not wish to raise a family?