More Applications of the Choice Model

Intermediate Microeconomics

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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

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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.

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Consumers' Time Preferences

◆ Households choose to spend or save based on their preferences and the perceived trade-offs.

◆ Let's consider "consumption today" (C_t) and "consumption tomorrow" (C_{t+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.

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Households' Savings Constraint

Suppose

$$I_t = C_t + S_t$$
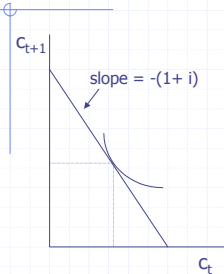
$$C_{t+1} = (1+i) S_t$$

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?)

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Consumer's Time-Preference Model

C_{t+1}

slope = -(1+ i)

C_t

◆ 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?

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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?

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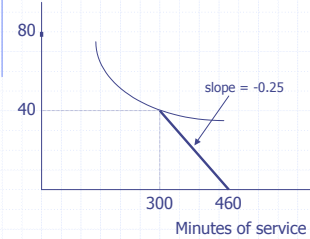## Derive the "flat-fee" phone service budget constraint.

◆ 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?

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The "flat-fee" budget constraint

Other goods

80

40

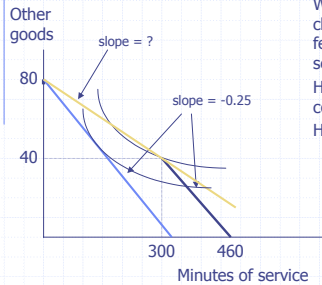slope = -0.25

300   460

Minutes of service

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?

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The "flat-fee" budget constraint

Other goods

slope = ?

80

slope = -0.25

40

300   460

Minutes of service

What if Verizon, instead, charged a fixed per minute fee for each minute of service?

How would the constraint compare?

Here are two possibilities:

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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.

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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.

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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?

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