TOPICS IN LABOR SUPPLY

Application of labor supply model: Earned income tax credit (EITC)
What is it?: A scheme to encourage greater labor market participation among members of poor households.
What is does: supplements income for people on low pay
Example (from Borjas) Single mother/father with 2 children (2005 figures)

Earnings $	**EITC pays**
0-11,000	40% extra
11,000-14,370	4,400
14,370-35,236	4,400 less 21.06% of every dollar over 14,370
over 35,236	0

How does EITC affect labor supply? (low, middle, high wage earners)

Application of labor supply model: social security earnings test

The idea: to spread social security dollars more equitably

The scheme (2000): Retirees between 65 and 70

Earning range	effect on benefits
0-$17k	None
above $17k	loose $1 of benefit per $3 earned

Issue: does the test discourage work?

Example (Borjas)
An individual would get \$10k in SS benefits without earned income
Annual hours of non-sleeping time say 5000
Wage \$10/hr
Effective wage above \$17,000: $\$10 - \$3.33 = \$6.66$
Can only loose \$10,000 - requires \$30,000 of additional earnings

work hours	leisure hours	earned income	total income without test	total income with test
0	5000	\$0	\$10,000	\$10,000
1700	3300	\$17,000	\$27,000	\$27,000
4700	300	\$47,000	\$57,000	\$47,000
5000	0	\$50,000	\$60,000	\$50,000

Impact on hours depends on relative strength of income versus substitution effects

HOUSEHOLD PRODUCTION

- Introduces another dimension to the time-use problem: home versus market work

HOUSEHOLD PRODUCTION

- Introduces another dimension to the time-use problem: home versus market work
- In the data:

HOUSEHOLD PRODUCTION

- Introduces another dimension to the time-use problem: home versus market work
- In the data:
  - married women do more home work and less market work than single women

HOUSEHOLD PRODUCTION

- Introduces another dimension to the time-use problem: home versus market work
- In the data:
  - married women do more home work and less market work than single women
  - married men do more market works and less home work than single men

HOUSEHOLD PRODUCTION

- Introduces another dimension to the time-use problem: home versus market work
- In the data:
  - married women do more home work and less market work than single women
  - married men do more market works and less home work than single men
- How can we measure the value of household production?

HOUSEHOLD PRODUCTION

- Introduces another dimension to the time-use problem: home versus market work
- In the data:
  - married women do more home work and less market work than single women
  - married men do more market works and less home work than single men
- How can we measure the value of household production?
  - As how much value of market goods have to be given up for the household item

Model of household labor supply

- *Opportunity set*

Model of household labor supply

- *Opportunity set*
  - Here we ignore leisure to concentrate on time allocation across home and market work

Model of household labor supply

- *Opportunity set*
  - Here we ignore leisure to concentrate on time allocation across home and market work
  - Assume each partner has, say, 10 hours of every day to allocate to either home or market work

Model of household labor supply

- *Opportunity set*
  - Here we ignore leisure to concentrate on time allocation across home and market work
  - Assume each partner has, say, 10 hours of every day to allocate to either home or market work
  - We calculate the opportunity set of a couple from their productivities in each activity

Model of household labor supply

- *Opportunity set*
  - Here we ignore leisure to concentrate on time allocation across home and market work
  - Assume each partner has, say, 10 hours of every day to allocate to either home or market work
  - We calculate the opportunity set of a couple from their productivities in each activity
  - The person whose market productivity divided by home productivity is the highest should go out to work first

Model of household labor supply

- *Opportunity set*
  - Here we ignore leisure to concentrate on time allocation across home and market work
  - Assume each partner has, say, 10 hours of every day to allocate to either home or market work
  - We calculate the opportunity set of a couple from their productivities in each activity
  - The person whose market productivity divided by home productivity is the highest should go out to work first
- *Preferences*

Model of household labor supply

- *Opportunity set*
  - Here we ignore leisure to concentrate on time allocation across home and market work
  - Assume each partner has, say, 10 hours of every day to allocate to either home or market work
  - We calculate the opportunity set of a couple from their productivities in each activity
  - The person whose market productivity divided by home productivity is the highest should go out to work first
- *Preferences*
  - Couples have preferences over market goods and home goods

Model of household labor supply

- *Opportunity set*
  - Here we ignore leisure to concentrate on time allocation across home and market work
  - Assume each partner has, say, 10 hours of every day to allocate to either home or market work
  - We calculate the opportunity set of a couple from their productivities in each activity
  - The person whose market productivity divided by home productivity is the highest should go out to work first
- *Preferences*
  - Couples have preferences over market goods and home goods
  - Indifference curves are downward sloping and convex to the origin

Example (from Borjas)

- Jack can produce \$200 of market or \$100 of household goods (or any combination)

Example (from Borjas)

- Jack can produce \$200 of market or \$100 of household goods (or any combination)
- Jill can produce \$150 of market or \$250 of household goods (or any combination)

Example (from Borjas)

- Jack can produce \$200 of market or \$100 of household goods (or any combination)
- Jill can produce \$150 of market or \$250 of household goods (or any combination)
- The household decision: who works where (5 types of outcome depending on preferences)

Example (from Borjas)

- Jack can produce \$200 of market or \$100 of household goods (or any combination)
- Jill can produce \$150 of market or \$250 of household goods (or any combination)
- The household decision: who works where (5 types of outcome depending on preferences)
  - Both stay home

Example (from Borjas)

- Jack can produce \$200 of market or \$100 of household goods (or any combination)
- Jill can produce \$150 of market or \$250 of household goods (or any combination)
- The household decision: who works where (5 types of outcome depending on preferences)
  - Both stay home
  - Jack works part-time

Example (from Borjas)

- Jack can produce \$200 of market or \$100 of household goods (or any combination)
- Jill can produce \$150 of market or \$250 of household goods (or any combination)
- The household decision: who works where (5 types of outcome depending on preferences)
  - Both stay home
  - Jack works part-time
  - Jack works full-time Jill is at home full time (complete specialization)

Example (from Borjas)

- Jack can produce \$200 of market or \$100 of household goods (or any combination)
- Jill can produce \$150 of market or \$250 of household goods (or any combination)
- The household decision: who works where (5 types of outcome depending on preferences)
  - Both stay home
  - Jack works part-time
  - Jack works full-time Jill is at home full time (complete specialization)
  - Jack works full time and Jill works part-time

Example (from Borjas)

- Jack can produce \$200 of market or \$100 of household goods (or any combination)
- Jill can produce \$150 of market or \$250 of household goods (or any combination)
- The household decision: who works where (5 types of outcome depending on preferences)
  - Both stay home
  - Jack works part-time
  - Jack works full-time Jill is at home full time (complete specialization)
  - Jack works full time and Jill works part-time
  - They both work full-time

Example (from Borjas)

- Jack can produce \$200 of market or \$100 of household goods (or any combination)
- Jill can produce \$150 of market or \$250 of household goods (or any combination)
- The household decision: who works where (5 types of outcome depending on preferences)
  - Both stay home
  - Jack works part-time
  - Jack works full-time Jill is at home full time (complete specialization)
  - Jack works full time and Jill works part-time
  - They both work full-time
- Increases in market wages and specialization

Example (from Borjas)

- Jack can produce \$200 of market or \$100 of household goods (or any combination)
- Jill can produce \$150 of market or \$250 of household goods (or any combination)
- The household decision: who works where (5 types of outcome depending on preferences)
  - Both stay home
  - Jack works part-time
  - Jack works full-time Jill is at home full time (complete specialization)
  - Jack works full time and Jill works part-time
  - They both work full-time
- Increases in market wages and specialization
- Increases in home productivity (microwave ovens)

FERTILITY

- *Malthus*: The benefits from technological advances would be dissipated through population growth

FERTILITY

- *Malthus*: The benefits from technological advances would be dissipated through population growth
  - People would typically remain at a subsistence level of income

FERTILITY

- *Malthus*: The benefits from technological advances would be dissipated through population growth
  - People would typically remain at a subsistence level of income
- *Reality*: (1) Birth rates are lower in richer countries

FERTILITY

- *Malthus*: The benefits from technological advances would be dissipated through population growth
  - People would typically remain at a subsistence level of income
- *Reality*: (1) Birth rates are lower in richer countries
  - (2) In rich countries richer people have less kids

FERTILITY

- *Malthus*: The benefits from technological advances would be dissipated through population growth
  - People would typically remain at a subsistence level of income
- *Reality*: (1) Birth rates are lower in richer countries
  - (2) In rich countries richer people have less kids
- **A simple model of the fertility decision**

FERTILITY

- *Malthus*: The benefits from technological advances would be dissipated through population growth
  - People would typically remain at a subsistence level of income
- *Reality*: (1) Birth rates are lower in richer countries
  - (2) In rich countries richer people have less kids
- **A simple model of the fertility decision**
  - *Preferences:* Standard utility function in children and goods

FERTILITY

- *Malthus*: The benefits from technological advances would be dissipated through population growth
  - People would typically remain at a subsistence level of income
- *Reality*: (1) Birth rates are lower in richer countries
  - (2) In rich countries richer people have less kids
- **A simple model of the fertility decision**
  - *Preferences:* Standard utility function in children and goods
  - *Opportunity set:* specified by income, I.

FERTILITY

- *Malthus*: The benefits from technological advances would be dissipated through population growth
  - People would typically remain at a subsistence level of income
- *Reality*: (1) Birth rates are lower in richer countries
  - (2) In rich countries richer people have less kids
- **A simple model of the fertility decision**
  - *Preferences:* Standard utility function in children and goods
  - *Opportunity set:* specified by income, I.
  - p_x is the price of goods and p_n is the price of children (meaning?)

FERTILITY

- *Malthus*: The benefits from technological advances would be dissipated through population growth
  - People would typically remain at a subsistence level of income
- *Reality*: (1) Birth rates are lower in richer countries
  - (2) In rich countries richer people have less kids
- **A simple model of the fertility decision**
  - *Preferences:* Standard utility function in children and goods
  - *Opportunity set:* specified by income, I.
  - p_x is the price of goods and p_n is the price of children (meaning?)
  - Budget constraint: $p_x X + p_n N = I$

FERTILITY

- *Malthus*: The benefits from technological advances would be dissipated through population growth
  - People would typically remain at a subsistence level of income
- *Reality*: (1) Birth rates are lower in richer countries
  - (2) In rich countries richer people have less kids
- **A simple model of the fertility decision**
  - *Preferences:* Standard utility function in children and goods
  - *Opportunity set:* specified by income, I.
  - $p_x$is the price of goods and p_n is the price of children (meaning?)
  - Budget constraint:$p_x X + p_n N = I$
  - Where X is the amount of consumption goods and N is the number of kids

- Malthus's hypothesis is consistent with technological advances increasing income alone

- Malthus's hypothesis is consistent with technological advances increasing income alone
- In reality technological advances make the opportunity cost of work (i.e. kids) more expensive

- Malthus's hypothesis is consistent with technological advances increasing income alone
- In reality technological advances make the opportunity cost of work (i.e. kids) more expensive
- Also adding to this effect has been that:

- Malthus's hypothesis is consistent with technological advances increasing income alone
- In reality technological advances make the opportunity cost of work (i.e. kids) more expensive
- Also adding to this effect has been that:

1. technology has raised the market value of women more than men

- Malthus's hypothesis is consistent with technological advances increasing income alone
- In reality technological advances make the opportunity cost of work (i.e. kids) more expensive
- Also adding to this effect has been that:

1. technology has raised the market value of women more than men
2. laws prevent kids from working for living

- Malthus's hypothesis is consistent with technological advances increasing income alone
- In reality technological advances make the opportunity cost of work (i.e. kids) more expensive
- Also adding to this effect has been that:

1. technology has raised the market value of women more than men
2. laws prevent kids from working for living
3. exploitation of new technology often requires more education