Outline

1. The Role of Economics Models

2. Three Basic Models
   - The Production Possibilities Frontier
   - Comparative Advantage and the Gains from Trade
   - The Circular Flow Diagram

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2. Comparative Advantage
3. The Circular-Flow Diagram

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- Consider the problem of trying to find our way from Ames to the Field Museum in Chicago.
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- Efficiency
- Opportunity cost
- Economic growth
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We also assume that John can works 30 days in a month with no days off.
John’s PPF

We can illustrate John’s production possibilities graphically.

John can spend all his time making tables,...
John’s PPF

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John can spend all his time making tables,...

he can spend all his time making chairs,...
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John can spend all his time making tables,...

he can split his time between chairs and tables,...

or he can even choose not to work all the time

he can spend all his time making chairs,...

Tables

5

10

5

10

20

15

Chairs
PPF and Efficiency

We can use John’s production possibilities frontier to illustrate the notion of efficiency in production.
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Efficient production would be any point along the PPF.

Any point inside the PPF is inefficient.
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- Command economies, like the former Soviet Union, are notorious for inefficiencies in allocation.
Opportunity Cost (Principle #2)

- The PPF also illustrates the notion of *opportunity cost*. 

What is the opportunity cost for John of making one chair? If he doesn't make that chair, it frees up 2 days, during which time he could make $\frac{2}{3}$ of a table. This is simply the slope of the PPF.

What is the opportunity cost for John on making a table? It's $\frac{1}{\frac{3}{2}}$ chairs.
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It is more often the case that the PPF is curved, reflecting the notion of increasing opportunity costs; i.e., as we try to produce more and more of a good, it becomes more difficult to do so (the opportunity cost increases).

Consider the production possibilities frontier for a country choosing between raising cattle and growing corn.

If we start with all corn, the opportunity cost of switching some land to cattle is relatively small:

1. We can switch out land that is not very good at growing corn
2. We can also put individuals who are not very good farmers on the new ranches.

Initially, the opportunity cost of cattle is small (and the PPF is very flat); but it will gradually increase.
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Graphically

The Production Possibilities Frontier

Corn

Cattle
Three Basic Models

The Production Possibilities Frontier

Graphically

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The Production Possibilities Frontier

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Chapter 2: Economic Models

Fall 2010

Corn

Cattle
Graphically

Three Basic Models

The Production Possibilities Frontier

Corn

Cattle
Graphically

Three Basic Models
The Production Possibilities Frontier

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Chapter 2: Economic Models
Fall 2010
Graphically
Recessions and Growth

- Recessions, like we are currently in, represent inefficiencies in production.
  - We have idle resources, including labor, that could be used to produce goods and services, but are not.
  - This corresponds to operating inside the nation's PPF.
  - Coming out of the recession, we are returning towards the PPF, which is the best we can do in the short run.
  - In the long run, however, there can be shifts (growth) in the PPF due to:
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Chapter 2: Economic Models

Fall 2010
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The Production Possibilities Frontier
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Three Basic Models

Comparative Advantage and the Gains from Trade

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- Local groups are encouraging individuals to “buy local,” going so far as to introducing local currencies.

While there are problems that accompany trade, the potential gains from trade are substantial.

In this section, we want to look at the underlying argument in favor of trade.
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The Story of Two Woodworkers

- Earlier, we introduced John, who could build both chairs and tables.
- Suppose there is a second woodworker, Michael, who can also make tables and chairs, but is not as adept at doing so.

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<th>Time Required to Build</th>
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Three Basic Models
Comparative Advantage and the Gains from Trade

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The Story of Two Woodworkers

Why would John ever trade with Michael?

The reason lies in the notion of comparative advantage and the incentives for specialization it creates.

An individual has a comparative advantage in producing a good if their opportunity cost of producing that good is lower.

Consider our two woodworkers:

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| Trade  |  | +5 | -2 | -5 | +2 |
|--------| |----|----|----|----|
| Total  | 8 | 6  | 5  | 2   |
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Gains from Trade

<p>| |</p>
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The circular flow diagram in the book also ignores another key “player.”
Consider the Development of a New Corn Hybrid

Three Basic Models

The Circular Flow Diagram

Households

Firms
Consider the Development of a New Corn Hybrid
Consider the Development of a New Corn Hybrid
Consider the Development of a New Corn Hybrid

The Circular Flow Diagram

Households

Markets for Goods and Services

Firms

Factor Markets

The Natural Life Support System
Consider the Development of a New Corn Hybrid
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Households

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Normative versus Positive Economics

- Economic models, such as those described above, are used to address a variety of issues.

1. Consider the ethanol debate. Economics can be used to address questions such as:
   - How much does the demand for corn for use in ethanol production affect the price of food (e.g., relying on corn fructose for sweeteners)?
   - The demand for land for corn production (e.g., taking it out of conservation reserve)?

2. If the use of ethanol as a fuel substitute reduces overall emissions per mile, is it worth the cost of increased food prices and land use?

The first question is an example of positive economics, which is the branch of economic analysis that describes the way the economy works.

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Chapter 2: Economic Models  
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     - the price of food (e.g., relying on corn fructose for sweeteners)?
     - the demand for land for corn production (e.g., taking it out of conservation reserve)?
  2. If the use of ethanol as a fuel substitute reduces overall emissions per mile, is it worth the cost of increased food prices and land use?
- The first question is an example of positive economics, which is the branch of economic analysis that describes the way the economy works.
Normative versus Positive Economics

- Economic models, such as those described above, are used to address a variety of issues.
- Consider the ethanol debate. Economics can be used to address questions such as:
  1. How much does the demand for corn for use in ethanol production affect
     - the price of food (e.g., relying on corn fructose for sweeteners)?
     - the demand for land for corn production (e.g., taking it out of conservation reserve)?
  2. If the use of ethanol as a fuel substitute reduces overall emissions per mile, is it worth the cost of increased food prices and land use?

The first question is an example of positive economics, which is the branch of economic analysis that describes the way the economy works.

The second question is an example of normative economics, which is the branch of economic analysis that makes prescriptions regarding the way the economy should work.
The Rest of the Story...

- Economists will often disagree about both positive and normative issues.
  - On positive economic issues they will disagree because the available information about how a specific part the economy works is incomplete, or they are using different models with different underlying assumptions.
  - On normative issues they will disagree because they place different weights on the benefits and costs of an action.

However, economists do agree on most fundamental issues, such as:
- Tariffs and import quotas usually reduce general economic welfare.
- A ceiling on rents reduces the quantity and quality of housing available.

Economics is an important tool in addressing pressing social issues, but is clearly not the only discipline involved.

It is also important to keep in mind that a well functioning market economy is predicated on:
- Well defined and enforced property rights
- Institutions (the sum of the traditions, mores, laws and government structures of an economy)
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