What you will learn in this chapter:

Why models?

- Simplified representations of reality play a crucial role in economics.

Three simple but important models:

- Production possibility frontier
- Comparative advantage
- Circular-flow diagram

The difference between **positive economics** and **normative economics**.

When economists agree and why they sometimes disagree.
A **model** is a simplified representation of a real situation that is used to better understand real-life situations.

- Create a real but simplified economy
- Ex.: Cigarettes in World War II prison camps
- Simulate an economy on a computer
- Ex.: Tax models, money models

The **“other things equal” assumption** means that all other relevant factors remain unchanged.
Trade-offs: The Production Possibility Frontier (PPF)

The production possibility frontier (PPF) illustrates the trade-offs facing an economy that produces only two goods. It shows the maximum quantity of one good that can be produced for any given production of the other.

The PPF improves our understanding of trade-offs by considering a simplified economy that produces only two goods by showing this trade-off graphically.
Tom’s Trade-offs: The Production Possibility Frontier

Quantity of coconuts

35
30
25
20
15
10
5
0

Quantity of fish

10
20
30
40
50

Feasible and efficient

Not feasible

Feasible but not efficient

Production possibility frontier
PPF

A
B
C
D

0
Increasing Opportunity Cost

Producing the first 20 fish ... requires giving up 5 coconuts.

But producing 20 more fish ... requires giving up 25 more coconuts.
Economic Growth

Production is initially at point A (20 fish and 25 coconuts), → it can move to point E (25 fish and 30 coconuts).
Comparative Advantage and Gains from Trade
Ex.: Tom and Hank

(a) Tom’s Production Possibilities

Quantity of coconuts

Quantity of fish

Tom’s consumption without trade
Comparative Advantage and Gains from Trade
Ex.: Tom and Hank

(b) Hank’s Production Possibilities

Hank’s consumption without trade

Hank’s PPF

Quantity of coconuts

Quantity of fish
### Tom and Hank’s Opportunity Costs of Fish and Coconuts

<table>
<thead>
<tr>
<th></th>
<th>Tom’s Opportunity Cost</th>
<th>Hank’s Opportunity Cost</th>
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<tbody>
<tr>
<td>One fish</td>
<td>3/4 coconut</td>
<td>2 coconuts</td>
</tr>
<tr>
<td>One coconut</td>
<td>4/3 fish</td>
<td>1/2 fish</td>
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</tbody>
</table>
Specialize and Trade

Both castaways are better off when they each specialize in what they are good at and trade.

It’s a good idea for Tom to catch the fish for both of them, because his opportunity cost of a fish in terms of coconuts not gathered is only $3/4$ of a coconut, versus 2 coconuts for Hank.

Correspondingly, it’s a good idea for Hank to gather coconuts for the both of them.
Comparative Advantage and Gains from Trade
Ex.: Tom and Hank

(a) Tom’s Production and Consumption

Quantity of coconuts

30

10

9

0

Quantity of fish

28 30

40

Tom’s consumption without trade

Tom’s consumption with trade

Tom’s production with trade
Comparative Advantage and Gains from Trade
Ex.: Tom and Hank

(b) Hank’s Production and Consumption

Quantity of coconuts

Quantity of fish

Hank’s production with trade

Hank’s consumption with trade

Hank’s consumption without trade
How the Castaways Gain from Trade

<table>
<thead>
<tr>
<th></th>
<th>Without Trade</th>
<th>With Trade</th>
<th>Gains from Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Production</td>
<td>Consumption</td>
<td>Production</td>
</tr>
<tr>
<td>Tom</td>
<td>28</td>
<td>28</td>
<td>40</td>
</tr>
<tr>
<td>Fish</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coconuts</td>
<td>9</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Hank</td>
<td>6</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Fish</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coconuts</td>
<td>8</td>
<td>8</td>
<td>20</td>
</tr>
</tbody>
</table>

Both Tom and Hank experience gains from trade:

- **Tom’s consumption of fish increases by two, and his consumption of coconuts increases by one.**
- **Hank’s consumption of fish increases by four, and his consumption of coconuts increases by two.**
Comparative vs. Absolute Advantage

An individual has a **comparative advantage** in producing a good or service if the opportunity cost of producing the good is lower for that individual than for other people.

An individual has an **absolute advantage** in an activity if he or she can do it better than other people. Having an absolute advantage is not the same thing as having a comparative advantage.
Tom vs. Hank—Absolute vs. Comparative

Tom has an **absolute advantage** in both activities: he can produce more output with a given amount of input (in this case, his time) than Hank.

But we’ve just seen that Tom can indeed benefit from a deal with Hank because *comparative*, not *absolute*, advantage is the basis for mutual gain.

So Hank, despite his absolute disadvantage, even in coconuts, has a comparative advantage in coconut gathering.

Meanwhile Tom, who can use his time better by catching fish, has a comparative **disadvantage** in coconut-gathering.
Comparative Advantage and International Trade (Ex.: The U.S. Economy)
Comparative Advantage and International Trade (Ex.: The Canadian Economy)

(b) Canadian Production Possibility Frontier

Quantity of aircraft

3,000

2,000

1,500

Quantity of pork (millions of tons)

0

0.5

1

1.5

Canadian production

Canadian consumption without trade

Canadian consumption with trade
Comparative Advantage and International Trade

Just like the example of Tom and Hank, the U.S. and Canada can both achieve mutual gains from trade.

If the U.S. concentrates on producing pork and ships some of its output to Canada, while Canada concentrates on aircraft and ships some of its output to the U.S., both countries can consume more than if they insisted on being self-sufficient.
PITFALLS: Misunderstanding Comparative Advantage

A common mistake is to confuse comparative advantage with absolute advantage.

Ex.: U.S. vs. Japan in 1980s

- Commentators: “U.S. might soon have no comparative advantage in anything”
- Wrong! They meant “absolute advantage”
Transactions: The Circular-Flow Diagram

Trade takes the form of **barter** when people directly exchange goods or services that they have for goods or services that they want.

The **circular-flow diagram** is a model that represents the transactions in an economy by flows around a circle.
The Circular-Flow Diagram
Circular-Flow of Economic Activities

A **household** is a person or a group of people that share their income.

A **firm** is an organization that produces goods and services for sale.

Firms sell goods and services that they produce to households in **markets for goods and services**.

Firms buy the resources they need to produce—**factors of production**—in **factor markets**.
Growth in the U.S. Economy from 1962...
...to 1988

- **Households**: 105 million workers
- **Markets**: $3.36 trillion
- **Firms**: $3.53 trillion
- **Factor Markets**: Money
- **Money**: $3.36 trillion
Using Models

Positive economics is the branch of economic analysis that describes the way the economy actually works.

Normative economics makes prescriptions about the way the economy should work.

A forecast is a simple prediction of the future.
Using Models

Economists can determine correct answers for positive questions, but typically not for normative questions, which involve value judgments.

The exceptions are when policies designed to achieve a certain prescription can be clearly ranked in terms of efficiency.

It is important to understand that economists don’t use complex models to show “how clever they are,” but rather because they are “not clever enough” to analyze the real world as it is.
When and Why Economists Disagree

There are two main reasons economists disagree:

- They may disagree about which simplifications to make in a model.
- They may disagree about values.
The End of Chapter 2

coming attraction:
Chapter 3:
Supply and Demand