Elements of Microeconomics

AS.180.102 (03)

Chapter 2 and Chapter 3

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Announcements

Office hours from 4–5 PM on Tuesdays in W601D at the Wyman Park Building

Slides and practice problems (with solutions) will be posted to GitHub: https://github.com/Adam-Edwards-JHU/micro-principles

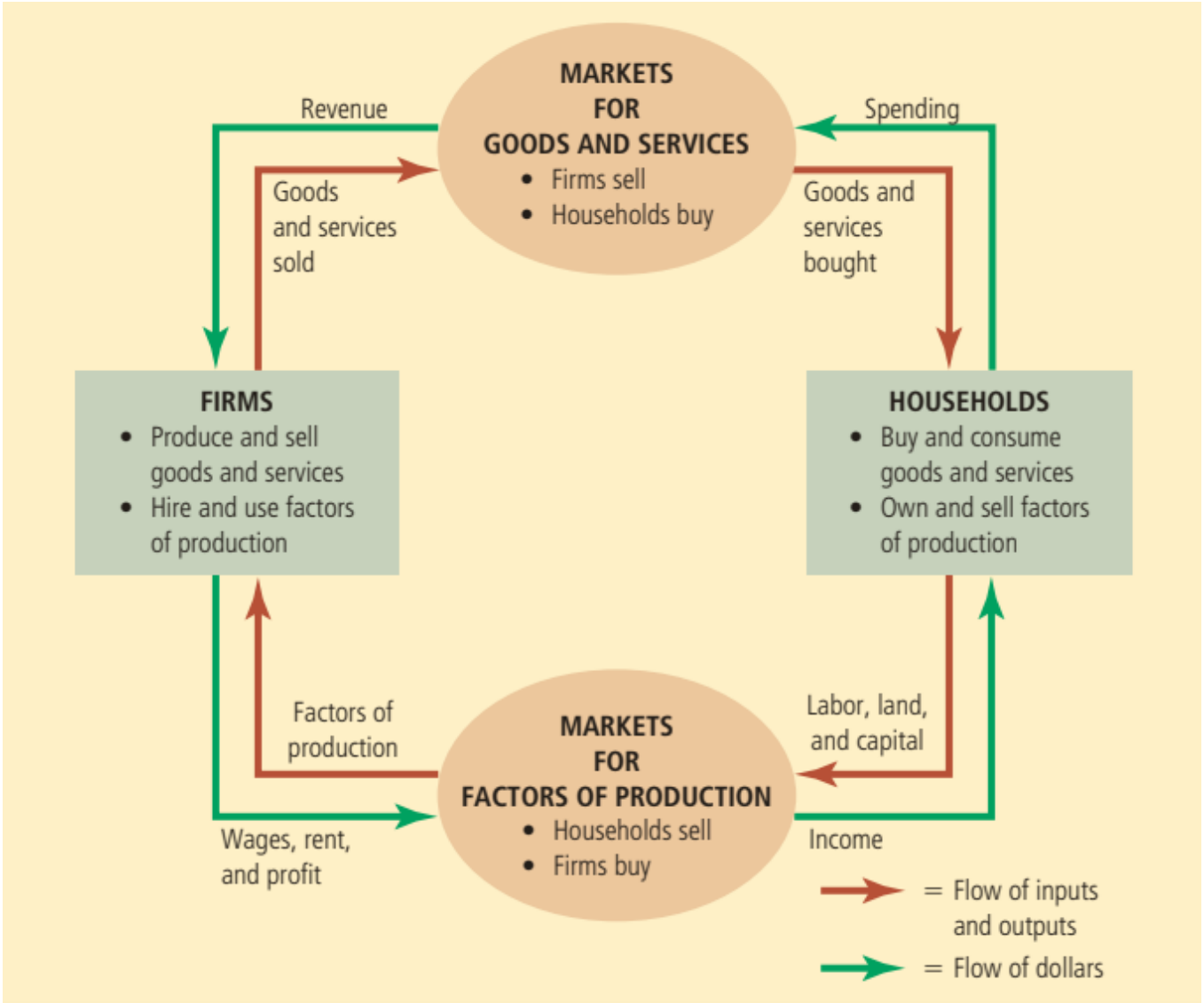
The Economist as Scientist

How are economists like scientists? How are economists not like scientists?

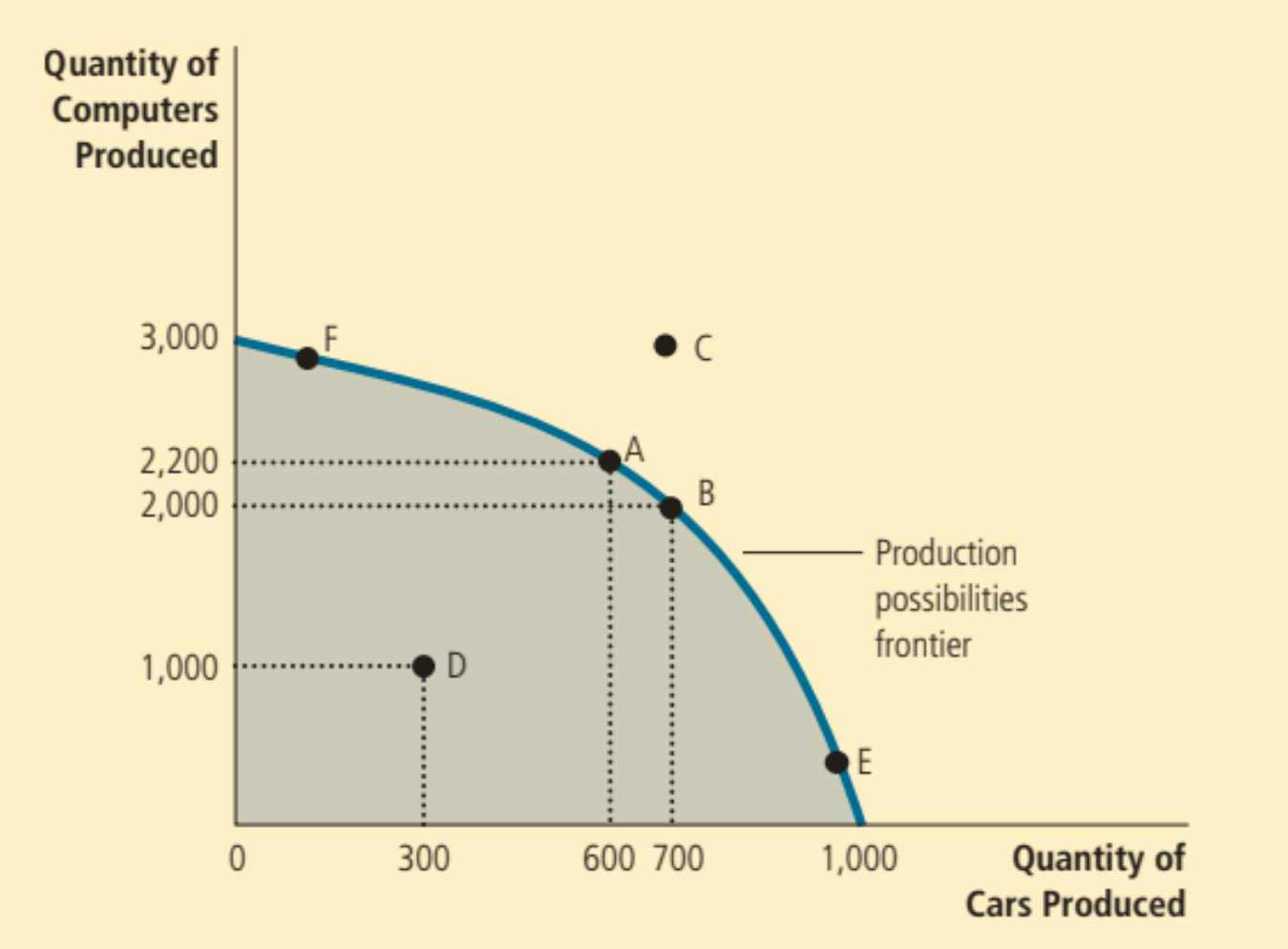
"Imagine how much harder physics would be if electrons had feelings." – Richard Feynman

Economists work with models, which rest on assumptions. Let's look at a few.

Circular Flow



Production Possibility Frontier (PPF)



PPF of a Firm

Consider an Italian restaurant that makes pizzas and sandwiches.

1. What will our production possibility frontier look like?
2. Why will it take the shape that it has?
3. How can we read the opportunity cost? Does it matter which part of the PPF we look at?
4. Why might the shape change over time?

CPF of an Individual

Now suppose we are *going* to the Italian restaurant with a group of friends, and we want to decide what to order. Pizzas are \$10, sandwiches are \$5, and we have \$100 to spend.

1. What will our consumption possibility frontier look like?
2. What is the opportunity cost of a pizza? Does it matter where on the CPF we are?
3. What will happen to the CPF if we have \$200 to spend?
4. What will happen to the CPF if the price of sandwiches increases to \$10?

Circular-flow Diagram of the Italian Restaurant Economy

Suppose the entire economy consists of Italian restaurants: during half of the week we work in one, and during the other half we buy food from them.

- What does the circular-flow diagram look like?
- What is missing from our model?

Economists, Economics, and Reality

Economists are often asked to guide economic policy.

- What are positive and normative statements?
- Why might two economists make different suggestions?
- Why might politicians ignore economists' suggestions?

Thinking at the Margin

First, something we glossed over in last week's discussion:

Economists think at the margin.

More importantly, we believe that profit-maximizing firms and utility-maximizing individuals do the same.

This means when evaluating a decision, we think about what a small change in behavior will do to an outcome.

Absolute Advantage

Absolute advantage means the ability to produce more of a good given a fixed quantity of inputs.

Consider two countries, England and Portugal. Both of them can produce two goods: wheat and textiles. Given 100 laborers, they can produce the following amounts of each good:

	Wheat	**Textiles**
England	100	20
Portugal	200	100

What is their cost, in laborers, to produce wheat and textiles?

Absolute Advantage

Assume that there is a constant transferability from one good to the other:

1. What are production possibility frontiers for the two countries?
2. Who has the absolute advantage in producing wheat?
3. Who has the absolute advantage in producing textiles?

Comparative Advantage

Before we discuss comparative advantage, let's think about the opportunity cost of each country for each good:

1. What are the slopes of the two PPFs?
2. What is England's opportunity cost for producing wheat and textiles?
3. What is Portugal's opportunity cost for producing wheat and textiles?

In other words: what is the *trade-off* that each country faces as they change their production from one good to another?

Comparative Advantage

The *opportunity cost* of producing textiles is the amount of wheat they could have produced with the same input. In our example, this is constant.

A country has a *comparative advantage* in producing wheat compared to their competitor if their opportunity cost is lower.

1. Can a country have an absolute advantage in both goods?
2. Can a country have a comparative advantage in both goods?
3. What is the relationship between the comparative advantage in good A and good B?

Comparative Advantage

The comparative advantage in producing good A is the *inverse* of the comparative advantage in producing good B.

If the comparative advantage in good A is high, the comparative advantage for good B must be low.

Comparative advantage depends on the *opportunity cost*: these concepts are linked.

Possible Trade: An Illustration

What is one set of productions and one possible trade that would leave both countries better off?

Suppose both countries split their 100 laborers 50/50 between the two goods. Their output is:

	Wheat	Textiles
England	50	10
Portugal	100	50
Total output	150	60

Table: 50/50 labor split

Possible Trade: An Illustration

There are many possible answers to this last question, but let's go back to our principle at the beginning of the discussion, and *think at the margin*. Suppose that...

- England produces 1 fewer textile and 5 more wheat
- Portual produces 2 fewer wheat and 1 more textile

	Wheat	**Textiles**
England	55	9
Portugal	98	51
Total output	153	60

Table: Possible trade

Total production has gone up!

Possible Trade: An Illustration

Which trade would illustrate that both countries are better off than before?

Suppose England trades 3 wheat to Portugal in exchange for one textile:

	Wheat	**Textiles**
England	52	10
Portugal	101	50

Table: Gains of trade

They both have the same amount of textiles as before but more wheat! So we know for sure they are better off with trade.

Should they continue to specialize?

Price of Trade

Here we just asserted a trade that would make both parties better off in terms of the amount of each good. But how can we know both parties will agree to the trade?

This is determined by the price of each good. In the example we gave, the "price" of 1 textile was 3 wheat.

1. What if the price of 1 textile was 3.5 wheat?
2. What if the price of 1 textile was 1 wheat?
3. What if the price of 1 textile was 6 wheat?

Price of Trade

The first example would still leave both parties better off, but the second two would not.

We are not ready yet to discuss where prices come from, but we do have a general rule:

Memento!

For trade to make both parties better off, the price must lie between the two opportunity costs.

Discussion Questions

Should Bill Gates wash his car?

Should the United States trade with other countries?

The main takeaway from this chapter:

Due to comparative advantage, specialization and trade can leave everyone participating better off.

A Final Example

Fourier can peel a pound of potatoes in 10 minutes and wash a load of dishes in 15. Riemann is twice as fast at peeling potatoes but takes the same amount of time to wash dishes.

1. What is each person's opportunity cost of peeling potatoes?
2. Who has an absolute advantage in washing the dishes?
3. Who has a comparative advantage in washing the dishes?
4. **Which person should do more of which task?**