Fundamentals Part B

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Overview

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2. Production Possibilities Frontier (PPF)
3. Opportunity Costs of Production
4. Absolute Advantage
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Simple Production Model

- This is one of the simplest models in economics, it applies our understanding of scarcity, resources, and choice.
- We are going to consider 2 goods to produce
- If resources and technology are fixed, then production of one good causes a decrease in production of the other good

Example: Producing Apples or Oranges

Suppose we are deciding on how many apples or oranges to produce. How can we view this?

Production Possibilities Schedule

Production Possibilities Schedule

A table that shows the possible combinations of producing two goods

Example: Apples and Oranges

Consider Alex and Clara's production possibility schedules:

Alex	
Apples	Oranges
0	200
100	100
200	0

Clara	
Apples	Oranges
0	300
50	150
100	0

Current Section

What is the PPF?

The PPF is a graphical representation of the production possibilities schedule. Points on the PPF are considered efficient production possibilities.

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PPF Visualized

Current Section

Opportunity Costs of Production

In our simple model, the opportunity cost of increasing the production of one good is the decrease in production of the second good.

Clara's opportunity cost of producing an apple

Apples	Oranges	Gain (A)	Give Up (O)
0	300	–	–
50	150	50	150
100	0	50	150

It costs 3 oranges to gain 1 apple $\left(\frac{GiveUp}{Gain} = \frac{150(oranges)}{50(apples)} = 3\right)$.

Heads Up!

In this example, the opportunity cost between all options is the same. This is called *constant opportunitiy costs*. This may not always be the case.

Current Section

What is Absolute Advantage?

Absoulute Advantage

The ability to produce a good using fewer inputs than another producer

Absolute Advantage Oranges

- Suppose it takes Alex 6 hours to generate one orange
- For Clara, it takes only 1 hour to generate one orange
- Clara has an absolute advantage in the production of Oranges

Absolute Advantage Apples

- Suppose it takes Alex 2 hours to generate one apple
- For Clara, it takes only 1 hour to generate one apple
- Clara has an absolute advantage in the production of apples

Absolute Advantage Cont.

Clara has an absolute advantage in **both** goods

- Absolute advantage measures the cost of a good in terms of the inputs required to produce it (Labor Hours).
- Two individuals can gain from trade when each specializes in the good it produces at a lower opportunity cost than another producer
- In our example, the opportunity cost of an apple is the amount of oranges that could be produced using the labor needed to produce one apple

Current Section

What is Comparative Advantage?

Comparative Advantage

The ability to produce a good or service at a lower relative opportunity cost than another producer.

Comparing Opportunity Costs of Apples

- Alex's cost of producing one apple is 1 orange
- Clara's cost of producing one apple is 3 oranges
- Alex's opportunity costs are lower, so he has the comparative advantage in apples

Comparative Advantage Example Cont.

Comparing Opportunity Costs of Oranges

- Alex's cost of producing one orange is 1 apple
- Clara's cost of producing one orange is $\frac{1}{3}$ apple
- Clara's opportunity costs are lower, so she has the comparative advantage in oranges

Current Section

What is Specialization?

Specialization

When a firm produces a single good or service instead of many different goods or services

To determine which field to specialize in, find where individual or firm has a comparative advantage.

Specialization in Apples and Oranges

- Alex has the comparative advantage in apples, so he should specialize in apples
- Clara has the comparative advantage in oranges, so she should specialize in oranges

Overall Output Increases with Specialization

No Specialization

	Apples	Oranges
Alex	100	100
Clara	50	150
Total	150	150

Specialization

	Apples	Oranges
Alex	200	0
Clara	0	300
Total	200	300

That's great and all, but what if Clara wants apples? She can **trade** her oranges for some apples.

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What are Terms of Trade?

Terms of Trade

The price of one good, service, or resource in terms of another.

The price must be greater than the opportunity cost of the seller or producer of the item to make them better off.

Alex's Terms of Trade for Apples

- Recall that Alex's opportunitiy cost of 1 apple is 1 orange.
- Would it make sense for Alex to trade an apple for less than one orange?
- Alex would be better off producing one orange instead of trading one apple for less than one orange.

Clara's Terms of Trade for Apples

- Recall that Clara's opportunitiy cost of 1 apple is 3 oranges.
- Would it make sense for Clara to trade more than 3 oranges for 1 apple?
- Clara would be better off producing one apple instead of trading more than 3 oranges.

Summary of Terms of Trade for Apples

- The opportunity cost of an apple for Alex (seller) was 1 orange.
- The opportunity cost of an apple for Clara (buyer) was 3 oranges.
- The price of an apple must be between 1 and 3 oranges

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Gains of Trade

- We have shown that total output will increase with specialization
- Additionally, we have shown that we can find the terms of trade
- Since we can produce and trade, we end up outside the limits of the PPF

Let's look at the gain from trade whenever the terms are 1 apple for 2 oranges

Clara's Gains from Trade

Clara has two choices

- No specialization, produces 50 apples and 150 oranges
- Produces 300 oranges and zero oranges. She then trades 120 oranges and recieves 60 apples (terms of trade: 1 apple for 2 oranges)

	No Specialization or Trade	**Specializing and Trading**
Clara	50 apples 150 oranges	60 apples 180 oranges

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Gains from Trade Visualized

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What is the Circular Flow Model?

Circular Flow Model

A model of the flow of resources, output, and monetary transactions in a simple economy

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The Circular Flow Diagram