Universidad de Valladolid

ECO - UVa

Topic 1

Economic problems

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Outline

- Introduction: Economic problems.

- Economics as a science and its method.

  - Economic models.
  - The Production Possibility Frontier.
  - Opportunity cost.
  - Exchange in the economy: circular flow.

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- Introduction: Economic problems.

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Introduction

What is Economics?

What is Microeconomics?

What is Macroeconomics?

What are the underlying principles of Economics?

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Introduction

What is Economics?

- Economics is the social science that studies the production, distribution and consumption of goods and services.
- Market economy: an economy in which decisions on production and consumption are made by producers and consumers.
- Centrally planned economy: an economy in which decisions on production and consumption are made by the government.

Introduction

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Introduction

What is Microeconomics?

- Microeconomics is the branch of economics that studies how economic agents make decisions and how these decisions interact.
- The invisible hand: refers to the way in which the pursuit of self-interest can lead to good results for society as a whole.
- Market failure: when the individual pursuit of self-interest makes society worse off.

Introduction

What is Economics?

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Introduction

What is Macroeconomics?

- Macroeconomics is the branch of economics that studies the overall fluctuations of an economy.
- Economic growth: the ability of the economy to produce more and more goods and services.
- Recession: is a dowturn in the economy.

Introduction

What is Economics?

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What are the underlying principles of Economics?

- **Choices** or **decisions**:
  - Individual choice.
  - Interaction on the basis of choices.
  - The economy as a whole.

Introduction

What are the underlying principles of Economics?

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Individuals' choices

1. Choices are necessary because resources are scarce.

2. The true cost of something is its opportunity cost.

3. "How much" is a decision at the margin.

4. People respond to incentives.

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Individuals' choices

1. **Choices are necessary because resources are scarce**.

   - Individual choice: an individual's decision on what to do (and not to do).
   - Without choice there is no economy: you can't have everything in life.
   - The big problem of economics: **scarcity** (income, resources, time).
   - Resources: inputs that can be used **to produce**: land, labour, physical capital and human capital.
   - **Resources are scarce**: there are not enough resources to meet all the world's needs. Choices have to be made.

Individuals' choices

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Individuals' choices

2. **The true cost of something is its opportunity cost**.

- Opportunity cost: What is given up to obtain something.
- Opportunity cost **is not only money**: time, knowledge, well-being.
  - For example, I have one hour to study, economics or accounting?
- Opportunity cost must be considered in estimating the **real cost** of anything: not just what it costs me but what I miss out on.

Individuals' choices

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Individuals' choices

3. "How much" is a decision at the margin.

- "How much" is chosen is based on **disjunctions**.
  - A decision involves a trade-off: comparing costs and benefits of doing something.
  - It is decided if the benefit is greater than the cost.
  - I have two exams tomorrow, how much do I decide to study for each one today?
- Decisions on doing "a little more": **marginal** or on the margins.
  - Marginal analysis: study of decisions at the margin.

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Individuals' choices

4. **People respond to incentives**.

- Individuals take advantage of opportunities to improve: **incentives**.
- Incentive: a **reward** offered to **change behaviour**.
- Scepticism about trying to change behaviour without incentives: CO2 emissions, low-cost aircraft vs. rail.
  - One-child policy in China: Incentive to have boys (Amartya Sen).

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Interaction on the basis of choices

5. There are gains from trade.
6. Markets move toward equilibrium.
7. Resources should be used efficiently to achieve society's goals.
8. Markets usually lead to efficiency.
9. If there are inefficient markets, the government intervention can improve society's welfare.

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Interaction on the basis of choices

5. There are gains from trade.

- The interaction of choices: **the choices of one affect the choices of the other and vice versa**.
  - The outcomes of interactions are often different from what individuals would like to do on an individual level. For example: political choices.

- In a market economy, individuals engage in **trade**: they provide goods and services to others and receive goods and services in return.

- There are gains from trade: **specialization**.

- The economy as a whole **produces more** when there is specialization and trade.

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Interaction on the basis of choices

6. Markets move toward equilibrium.

- Since individuals respond to incentives, markets move toward equilibrium.
- Choices are made to **try to improve** until the point is reached where **there is no incentive to change anything**:
  - What happens when you open a new supermarket checkout?
- **Equilibrium**: no individual would be better off doing something different.
- Even when there is a change in the model, the new model move toward equilibrium.

Interaction on the basis of choices

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Interaction on the basis of choices

7. Resources should be used efficiently.

- Resources should be used in the most efficient way to achieve **society's objectives**.
- **Efficiency**: all resources have been harnessed to make some people better off without making other people worse off.
- It's not just about money: by “better off" we mean **well-being**.
- When there is **efficiency**, the **maximum possible gain** is produced.
- Should efficiency always be sought? Trade-off between efficiency and equity.
  - **Equity**: everyone gets their fair share. (Who decides what is fair?)

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Interaction on the basis of choices

8. Markets usually lead to efficiency.

- Since people usually exploit gains from trade, **markets** usually lead to **efficiency**.
  - The **invisible hand** is in charge of **efficiency**.

- In a market economy, individuals tend to take advantage of all opportunities to improve their welfare. If an individual sees that he or she can improve, he or she will do so.
  - **Market failure**: self-interest worsens social welfare and there are efficiency losses.

Interaction on the basis of choices

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Interaction on the basis of choices

9. If there are inefficient markets, the government intervention can improve society's welfare.

- When markets fail to achieve efficiency, the **government intervenes**.

- Inefficiencies arise from market failure.
  - Example: traffic.
  - The **government** puts tolls, subsidises public transport or taxes fuel **to change incentives**.

- **A well-designed public policy can bring society closer to efficiency**.

Introduction

What are the underlying principles of Economics?

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Economy-wide interactions

10. One person's spending is another person's income.

11. Overall spending sometimes gets out of line with the economy's productive capacity.

12. Increases in economy’s potential lead to economic growth over time.

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Economy-wide interactions

10. One person's spending is another person's income.

- The **economy** is a network with **many interconnections**.
- Domino effect: if consumer spending falls, income also falls.
- Individuals exchange their labour for money.
- Fluctuations in the economy: **recessions** and **expansions**.

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Economy-wide interactions

11. Overall spending sometimes gets out of line with the economy's productive capacity.

- Too low **overall spending** produces **recession** while too high overall spending produces **inflation**.

- **Overall spending**: the amount of goods and services that consumers and businesses want to buy.

- When the economy experiences either shortfalls in spending or excesses in spending, **government policies** can be used to adress the imbalances.
  - **Government policies** can change spending: The government can modify overall spending through **taxation**, **government spending** and **monetary** control.

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Economy-wide interactions

12. Increases in economy's potential lead to economic growth over time.

- Economies around the world today are very different from the economies around the world of many years ago.
- These changes are due to **economic growth**: the increase in living standards. Today, we are richer.
- What accounts for economic growth? **New technologies** and **increases in the resources available for production**.
  - In the long-term, new technology and more resources increase a country's **economic potential**: total amount of goods and services it can produce, which leads to **higher living standards**.
  - In the short-term, economic growth is distributed **unequally** among citizens: there will be winners and losers.

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Economic models

- **Model**: a simplified representation of a real situation that is used to better understand real-life situations.
- Benefits of using models: cost, time, safer.
- Models are used in many fields of knowledge and economics is no exception.
  - **Example**: Wind tunnels were invented to facilitate the analysis of aircraft or car design.
- **Economic theory** is a set of models that represents real situations in order to understand a wide range of economic problems.

Economic models

- **Economic analysis**: creating models that draw on a set of basic principles that add some specific assumptions.
  - **Goal**: be able to make informed decisions: to answer questions!

- Two different questions:
  1. What would be the increase in revenue if income tax is raised by 2 percentge points?
  2. Should the income tax be raised?

Economic models

- Two roles of economic analysis:

1. **Positive economics**: it is the branch of economic analysis that describes the way the economy actually works.
   - It leads to right or wrong answers.
   - Some questions involve predictions or forecasts.
     - **Forecast**: a simple prediction of the future.

2. **Normative economics**: it makes prescriptions about the way the economy should work.
   - It leads to “it depends” answers.

Models in Economics

- Mathematics and computers help to formulate and solve economic models.
- The models allow the effects of one change at a time to be analyzed.
- **The other things equal assumption**: all other relevant factors remain unchanged (**Ceteris paribus**).

Models in Economics

- Two simple but important economic models:
  - **Production Possibility Frontier**: a model used to understand the choices between alternatives in an economy.
  - **Circular-Flow diagram**: a model representing the channelling of flows of money, goods and services in the economy.

Models in Economics

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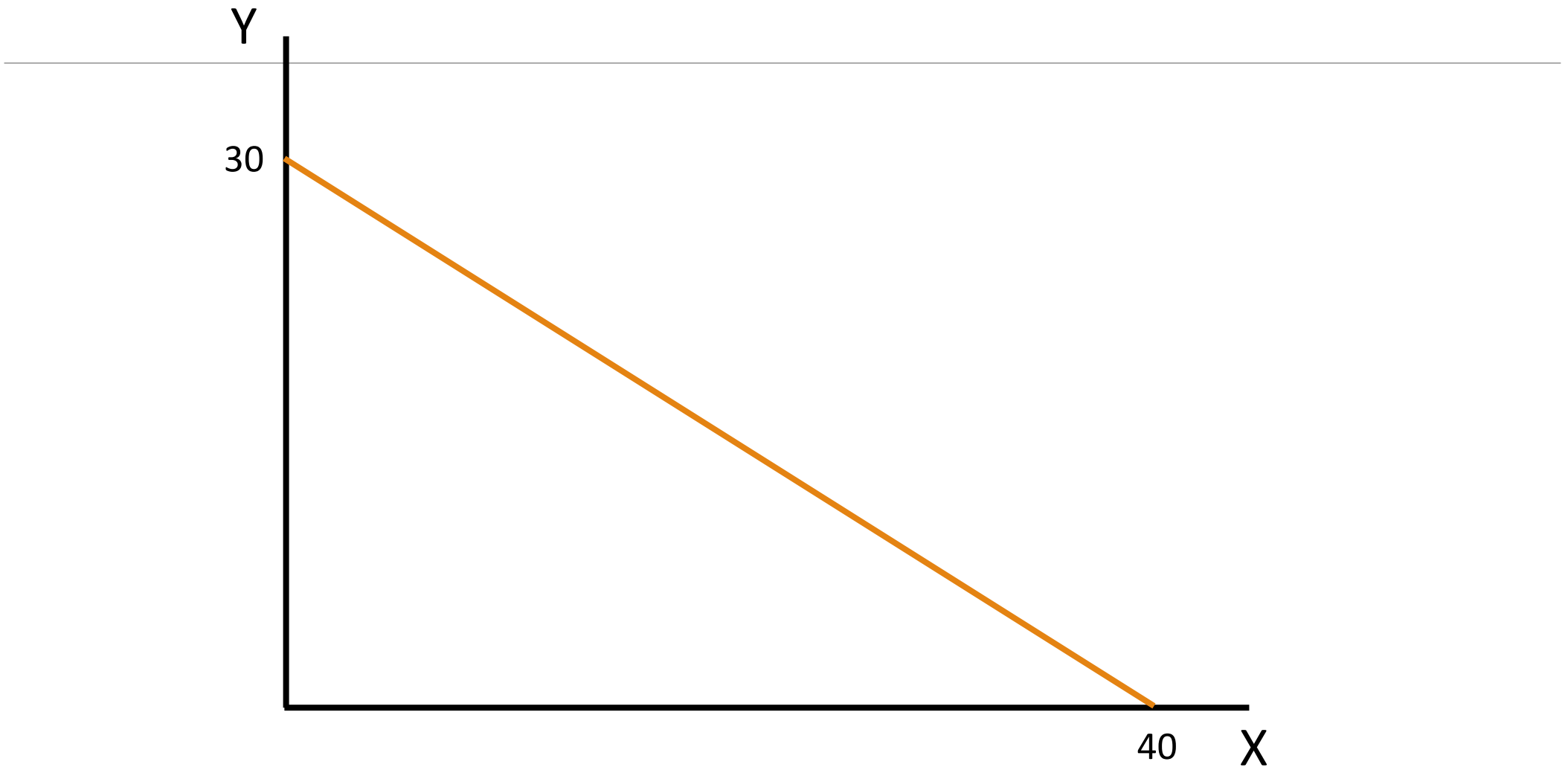
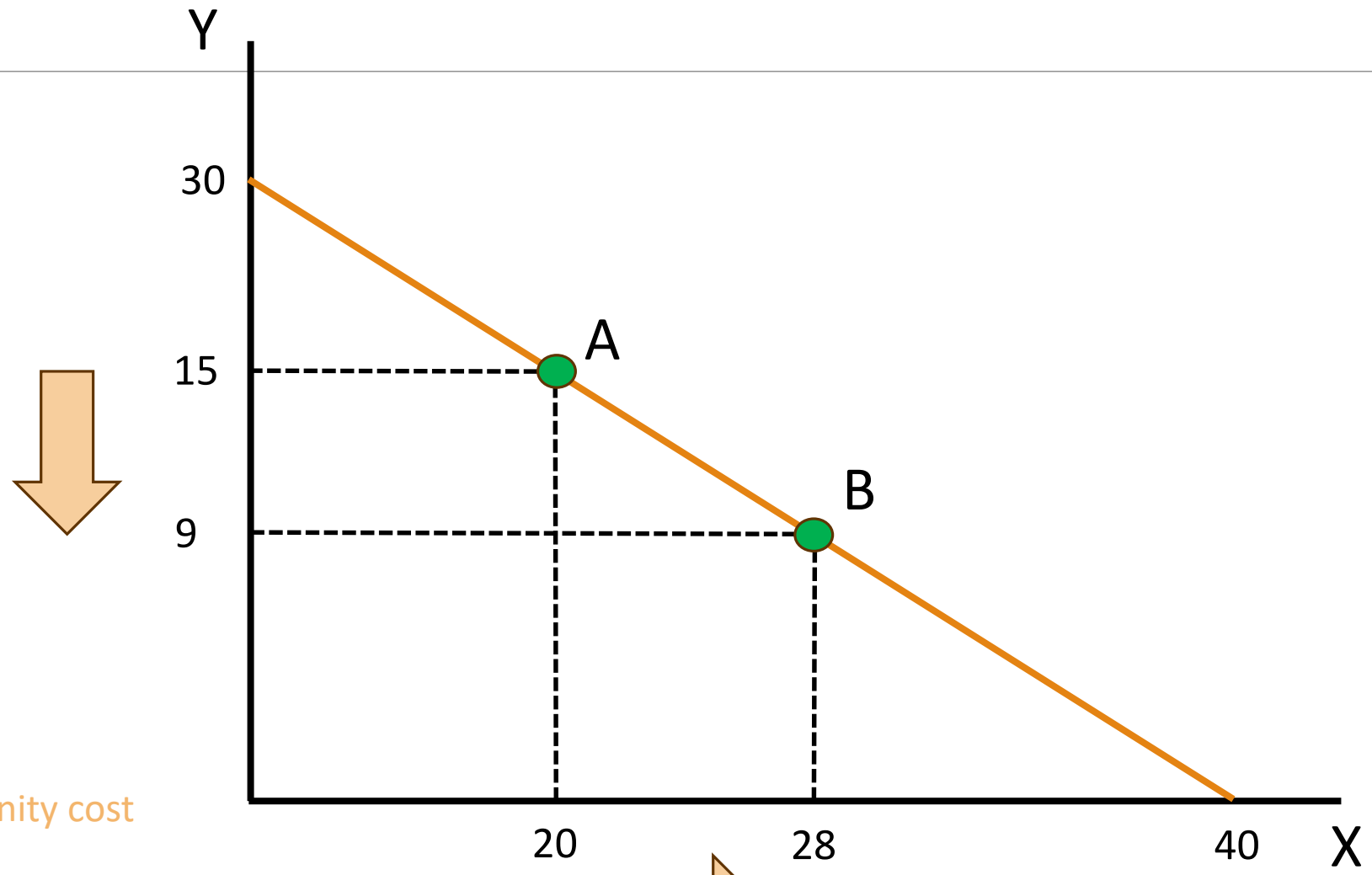
Production Possibility Frontier

- The Production Possibility Frontier (PPF):
  - It illustrates the **trade-offs** faced by an economy that produces only two goods.
  - The PPF model shows the maximum quantity of one good that can be produced for any given quantity produced of the other good.
- Remember: resources are scarce, so choices have to be made.

Production Possibility Frontier

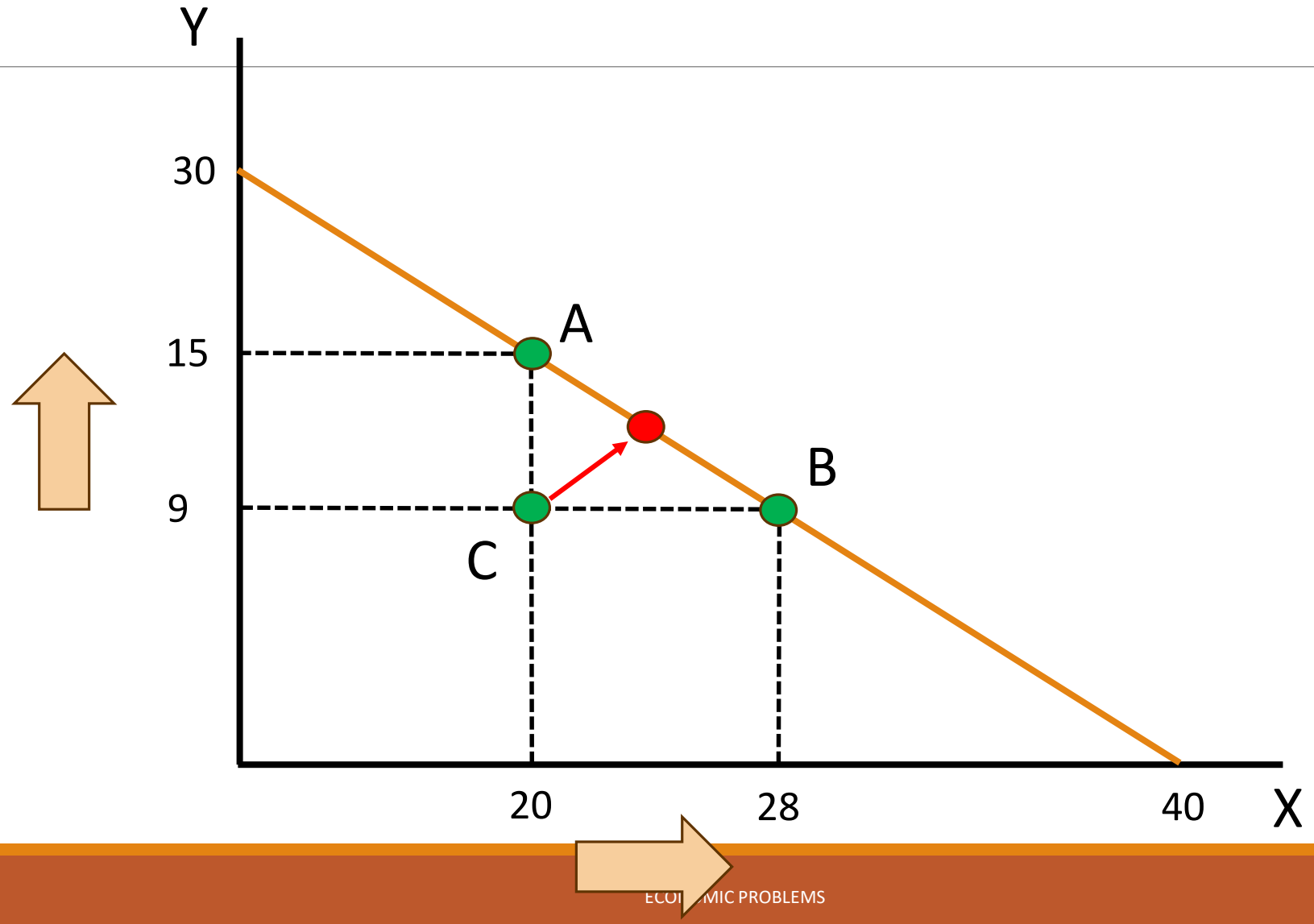


Production Possibility Frontier

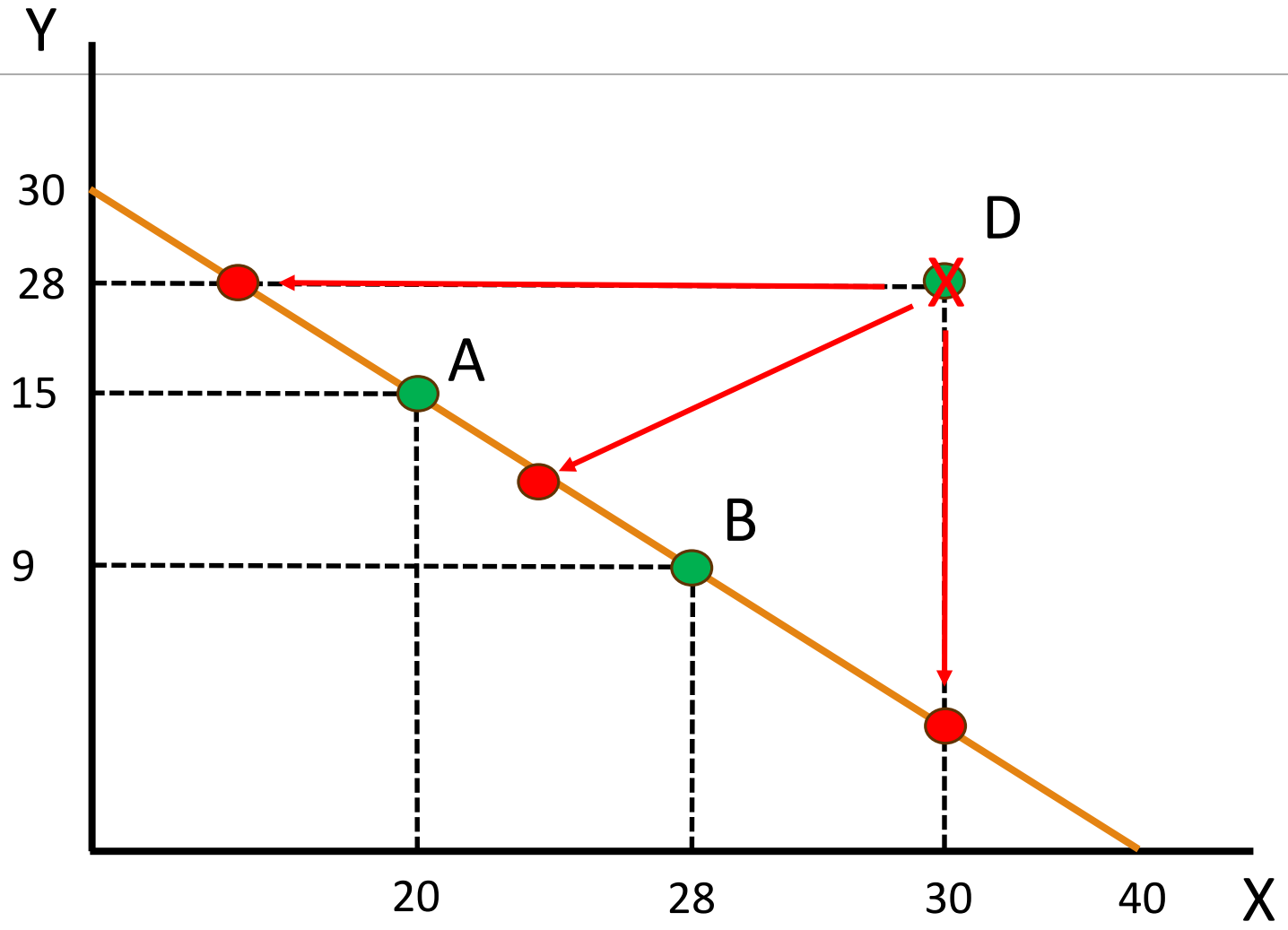


Opportunity cost

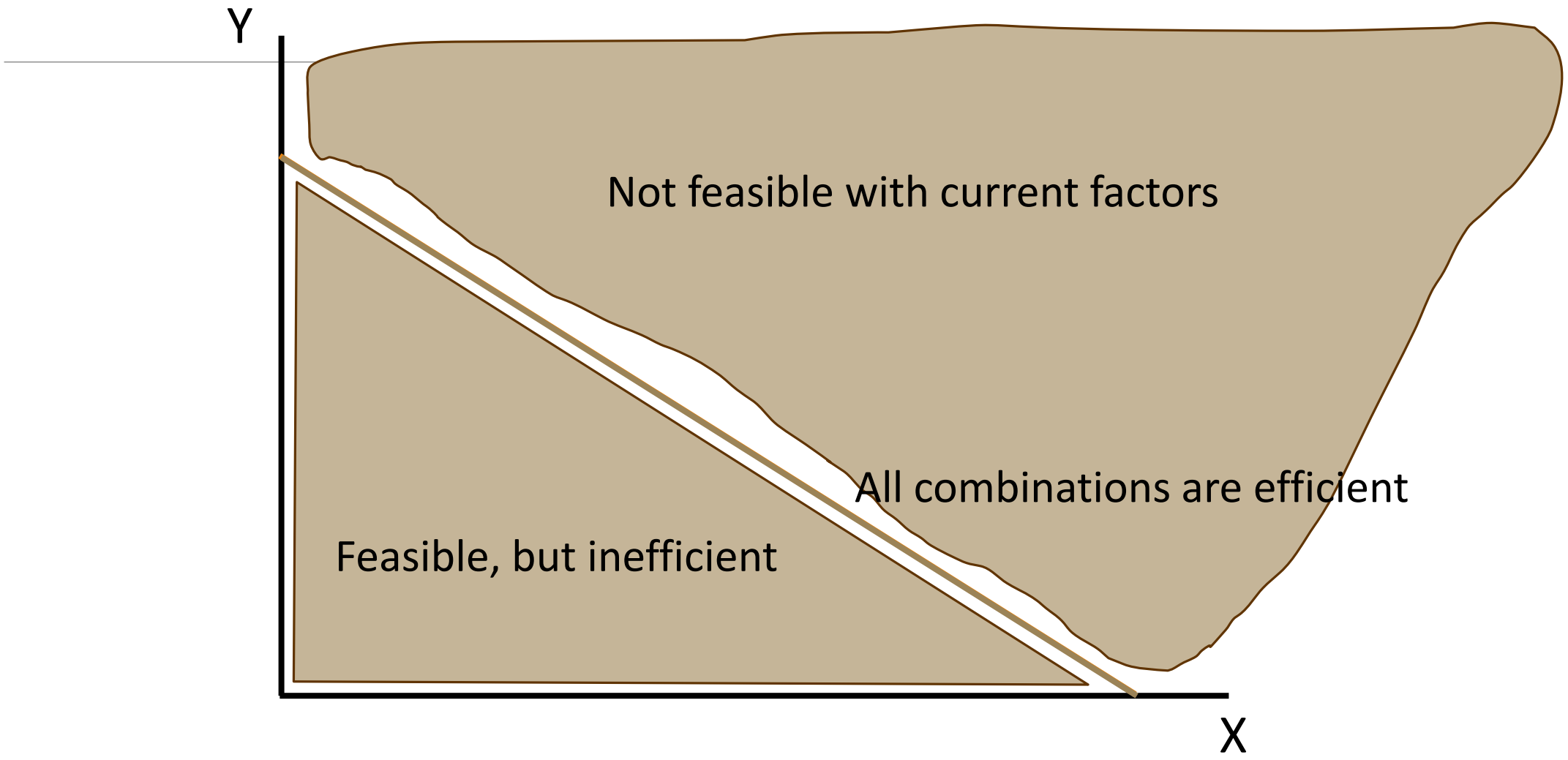
Production Possibility Frontier



Production Possibility Frontier



Production Possibility Frontier



Production Possibility Frontier

Efficiency:

- **The PPF illustrates the concept of efficiency**. It is easy to see whether or not there are missed opportunities.
  - **A** and **B** are efficient.
  - **C** is not.

- Efficiency in production: the economy as a whole can not produce more of a good without producing less of the other.
  - If the economy produces **on its PPF**, it is efficient in production.
  - **Unemployment** is a sign of inefficiency.

Production Possibility Frontier

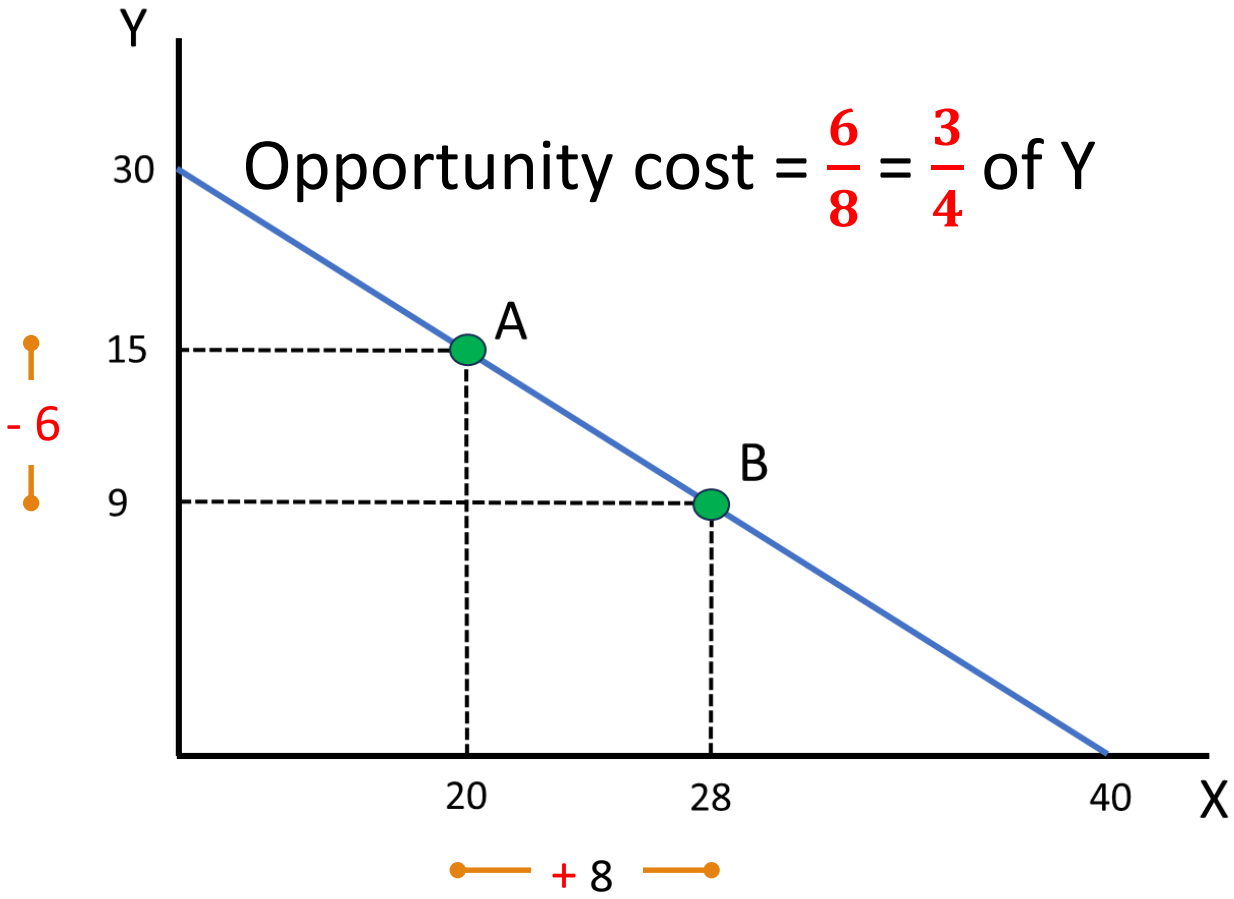
Efficiency:

- Efficiency in allocation: resources are distributed in such a way that **consumers are as well off as possible**.
- **Points A and B may be efficient, but not necessarily what the economy needs**. Either of them may be inefficient in allocation.
- Efficiency: **producing the maximum possible quantity** of all goods, **producing as much of each good as the economy needs**, and **getting the goods to the right people**.
  - In the USSR: shops crammed with things nobody wanted, but you couldn't find soap or toilet paper.

Production Possibility Frontier

Opportunity cost:

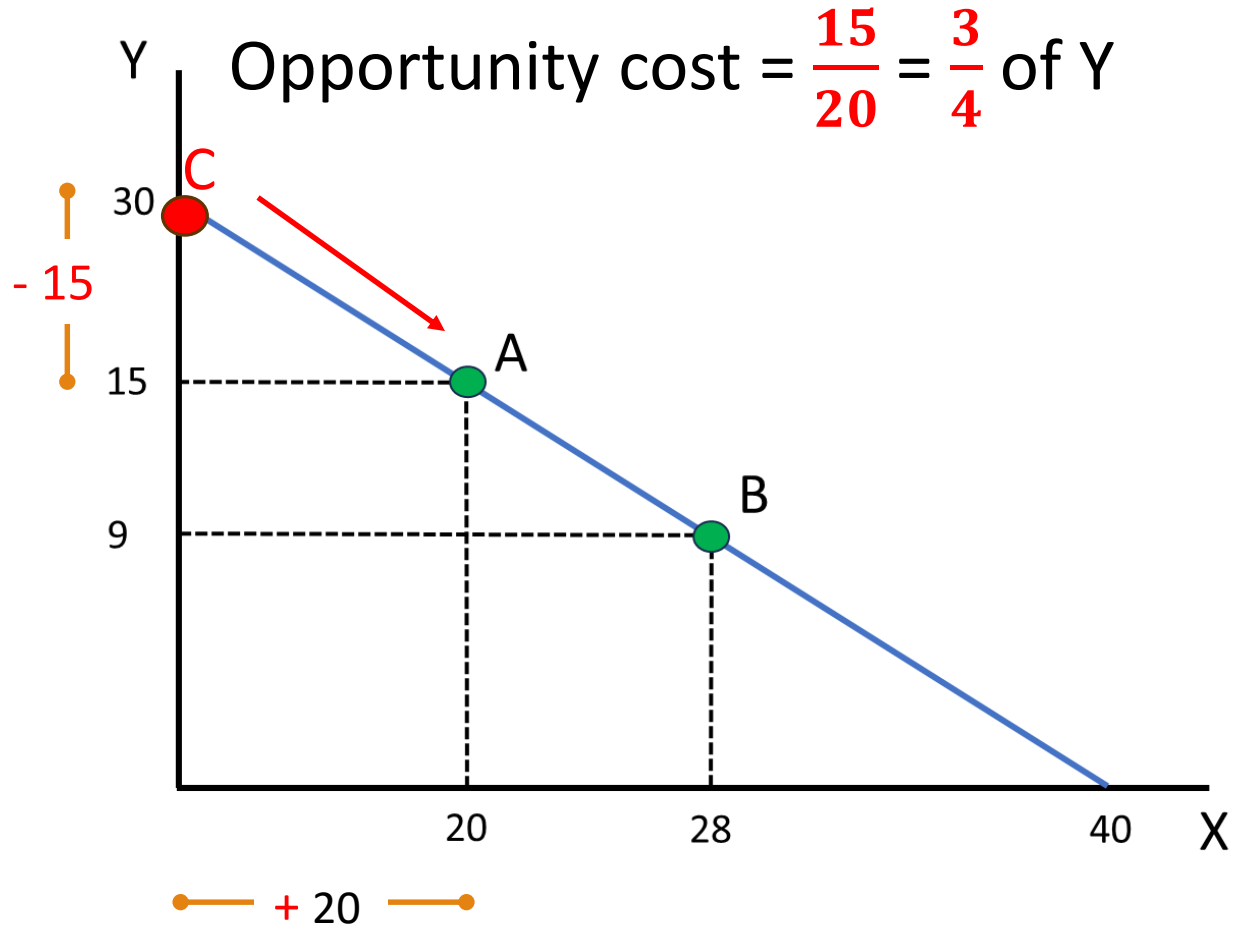
- It is also what you have to give up to get it.
- To go from A to B: 6 units of Y are given up to produce 8 more units of X.
- This means that each unit of X has an opportunity cost in terms of Y.



Production Possibility Frontier

Is the opportunity cost constant?

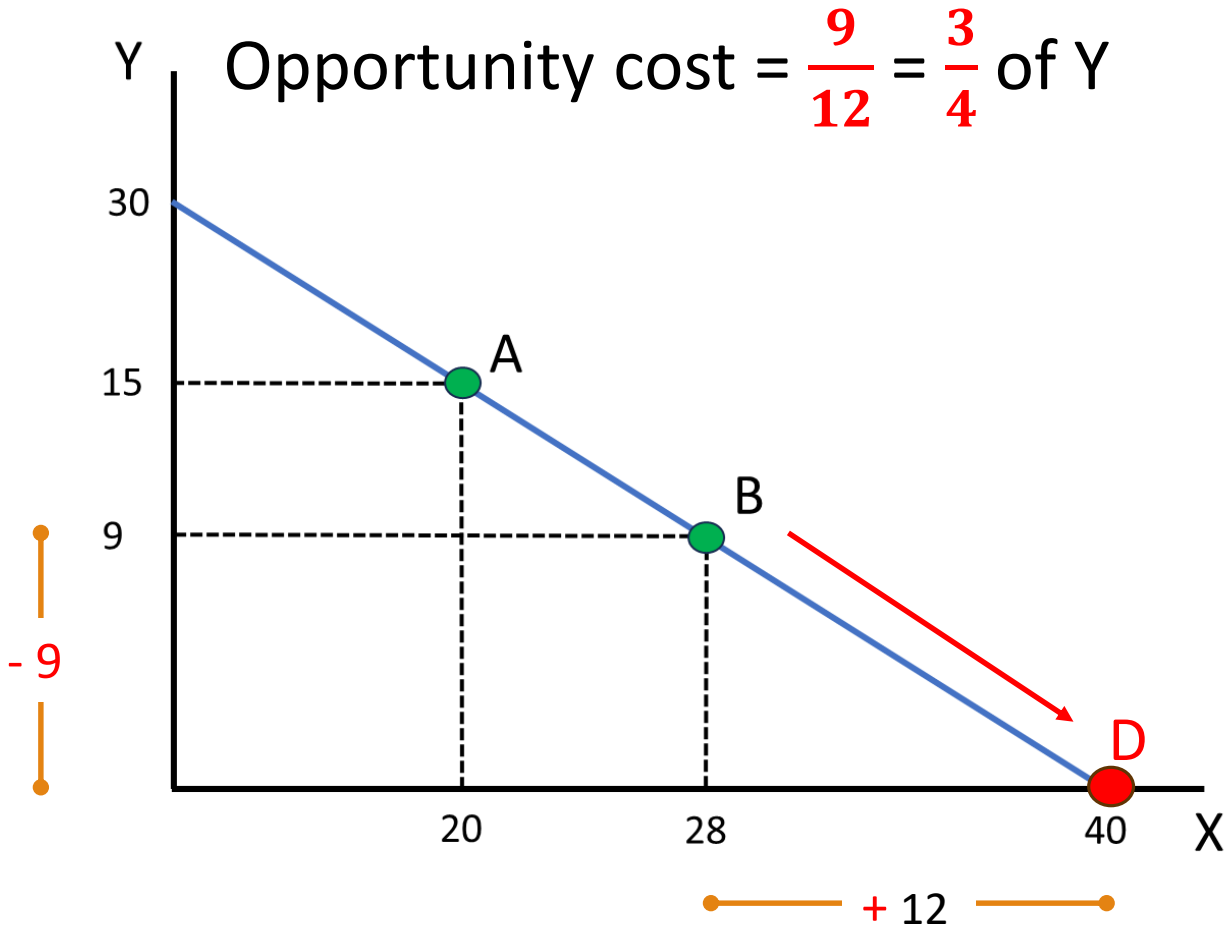
- In this example, yes.
- To move from C to A: 15 units of Y are given up in order to produce 20 more units of X.
- An additional unit of X has an opportunity cost of ¾ of Y units.



Production Possibility Frontier

Is the opportunity cost constant?

- In this example, yes.
- To go from B to D: 9 units of Y are given up to produce 12 more units of X.
- An additional unit of X has an opportunity cost of ¾ of Y units.



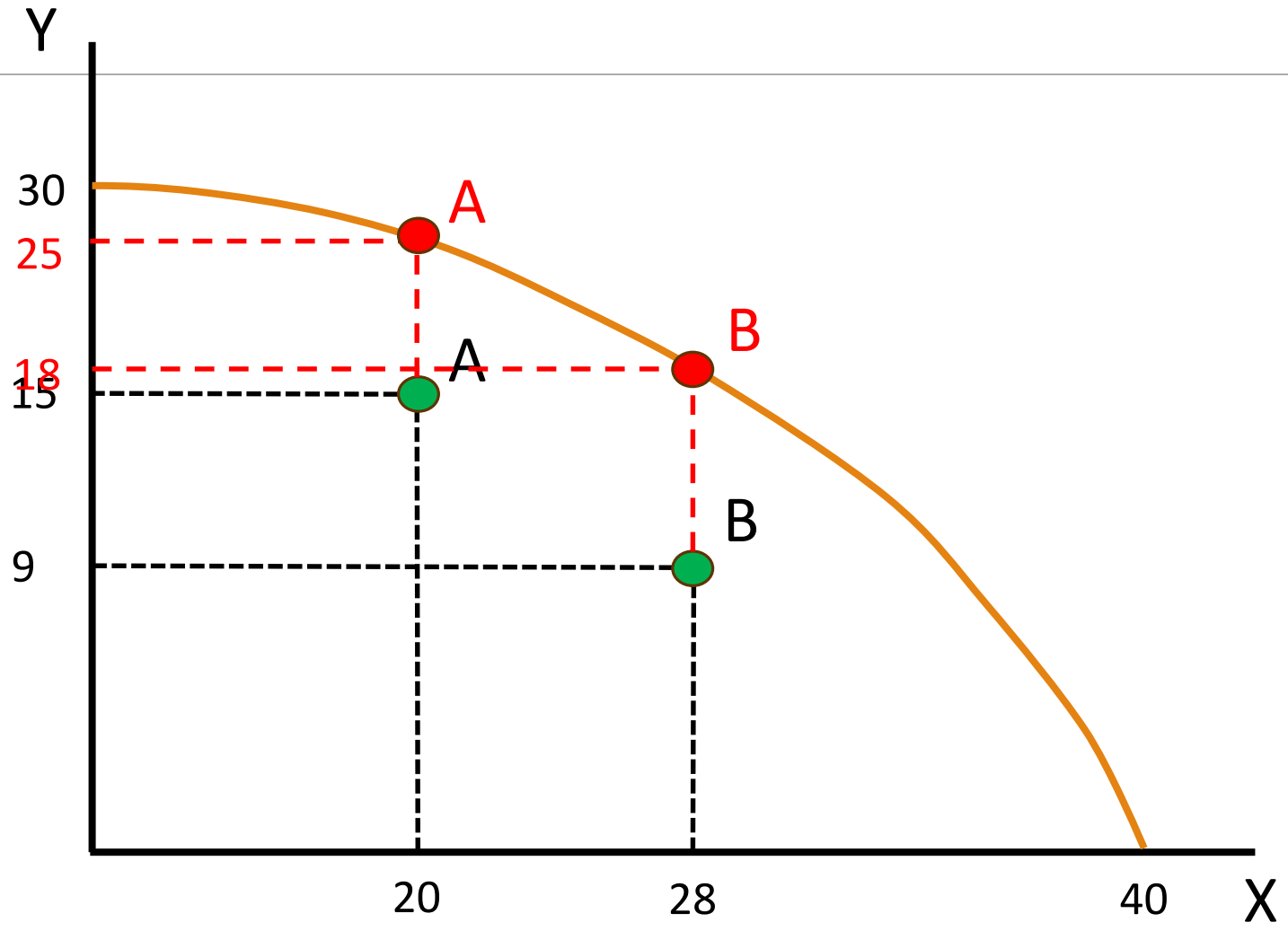
Production Possibility Frontier

Opportunity cost:

- A constant opportunity cost occurs because we have assumed that the PPF is a straight line. Furthermore, this means that the slope of the PPF is the opportunity cost.

- However, it is very common that the opportunity cost is increasing and the shape is concave with respect to the origin. This means that the more we want to produce of one good, the more we have to sacrifice of the other good.

Production Possibility Frontier



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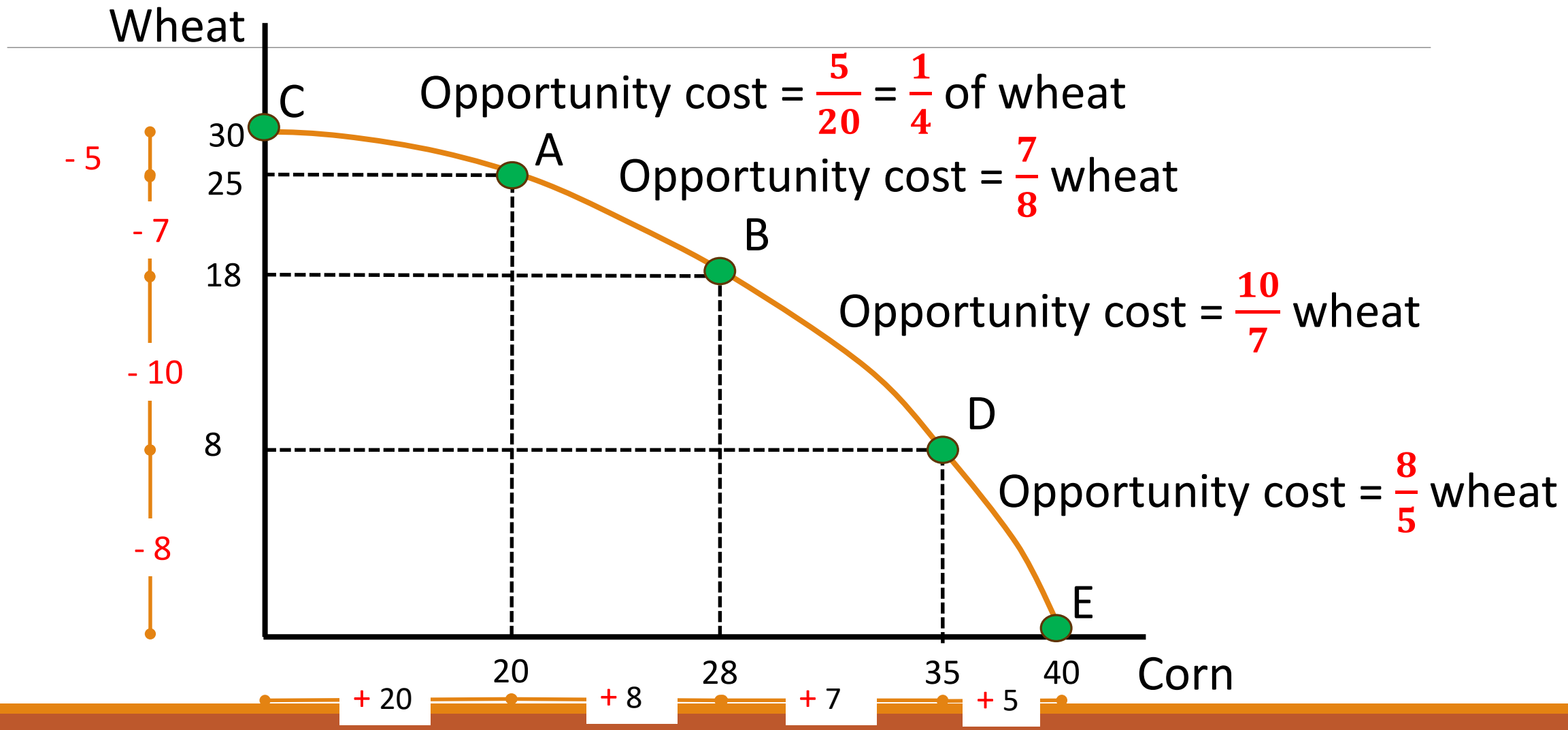
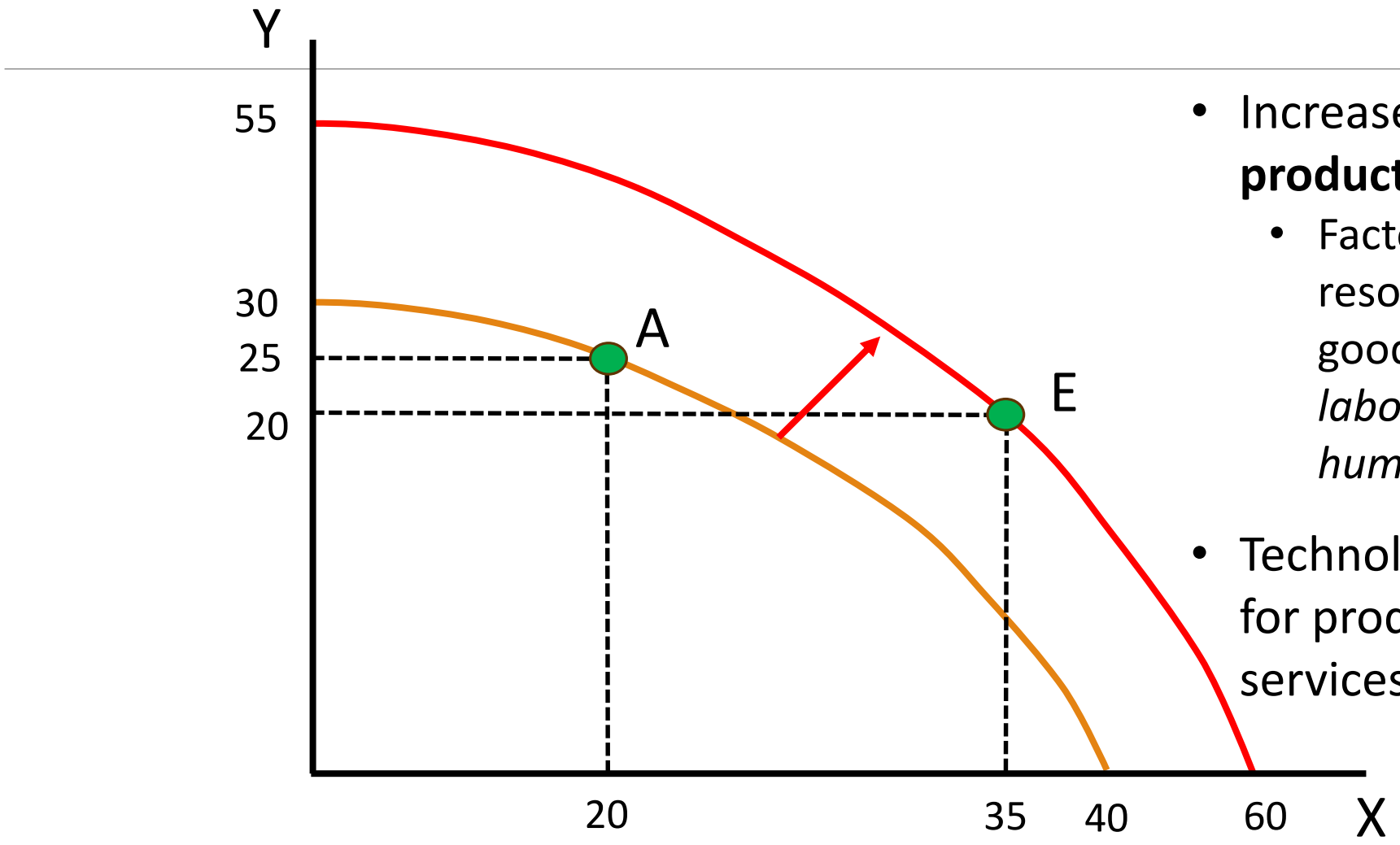


Production Possibility Frontier

Economic growth:

- So far, we have mentioned that to produce more of one good one have to give up producing some of the other good.
- Is it possible to produce more of both goods?
- The answer is **Yes**. Economies grow. This can also be illustrated by the PPF.

Production Possibility Frontier



- Increase in **factors of production**.
  - Factors of production: resources used to produce goods and services (*land, labor, physical capital and human capital*).
- Technology: technical means for producing goods and services.

Models in Economics

- Two simple but important economic models:
  - **Production Possibility Frontier**: a model used to understand the choices between alternatives in an economy.
  - **Circular-Flow diagram**: a model representing the channelling of flows of money, goods and services in the economy.

The Circular-Flow diagram

It is the **model** that represents the transactions in an economy by flows around a circle.

The simplest model includes two agents:

- **Household**: it is a person or a group of people sharing their income.
- **Firm**: it is an organization that produces goods and services for sale.

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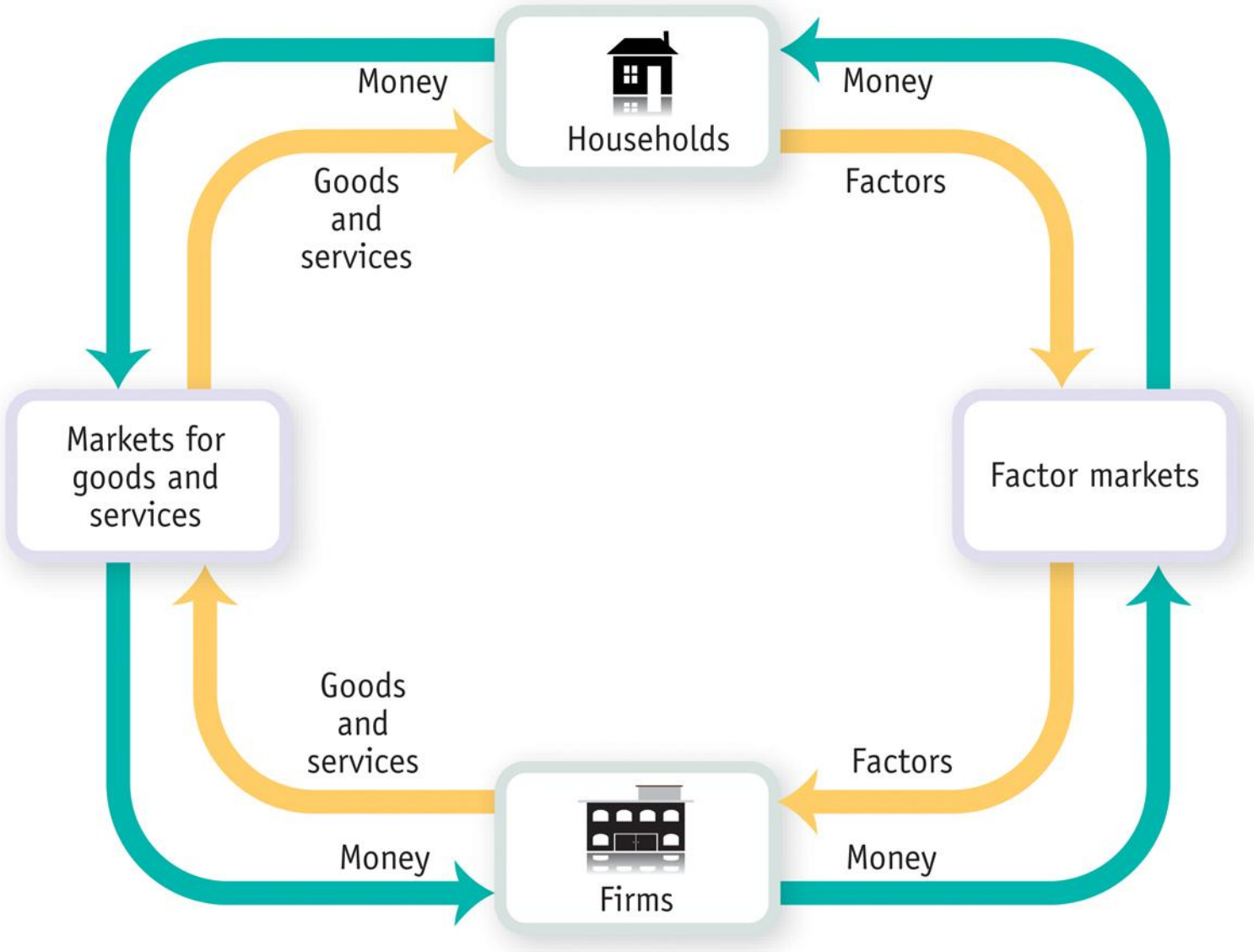
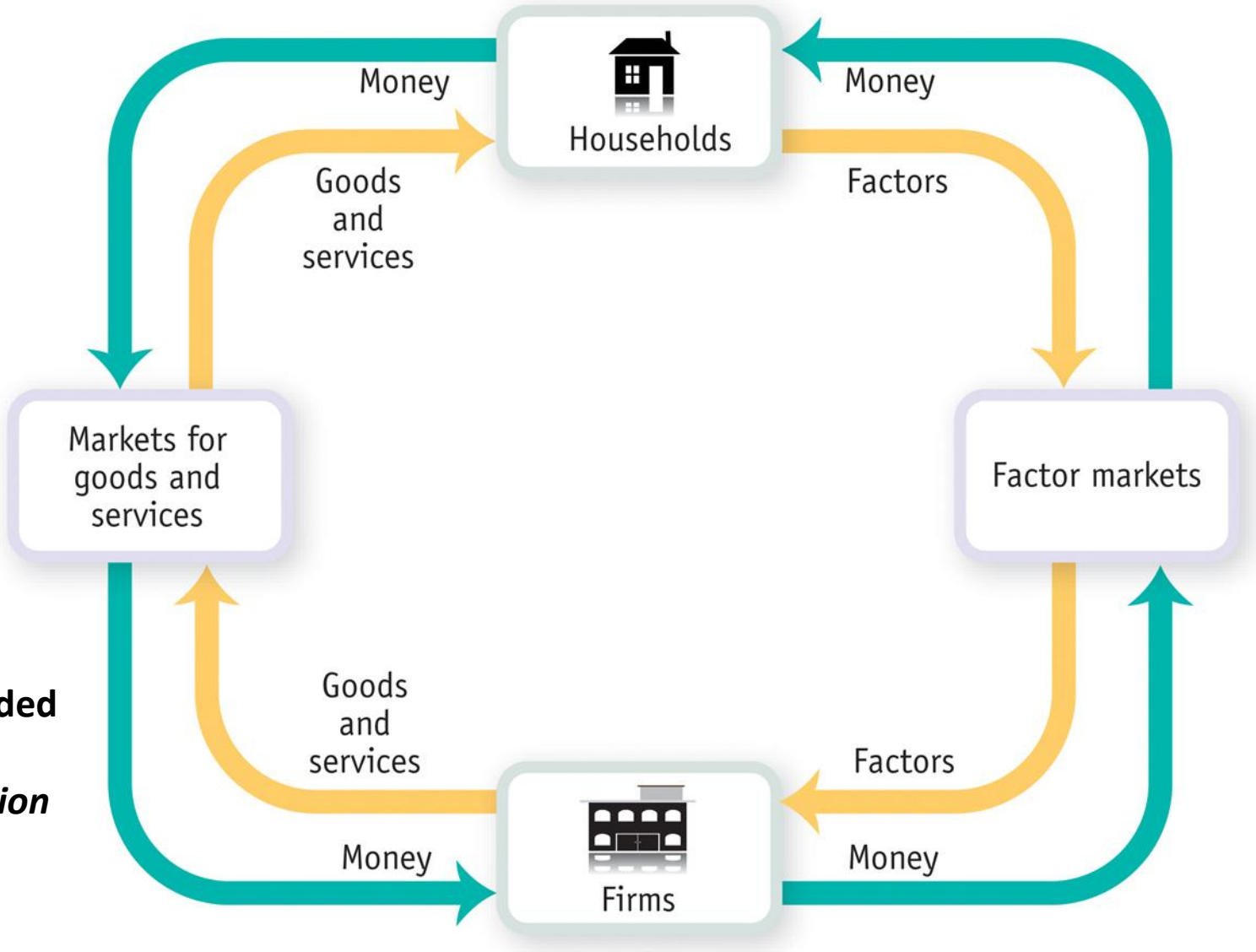


Source: Krugman and Wells (2015)

The Cir



An economy's **income distribution** is the way in which **total income is divided among the owners** of the various ***factors of production***

Source: Krugman and Wells (2015)

The Circular-Flow diagram

Limitations of the model with respect to real life:

- Distinction between home and firms is not always that clear-cut.
- Firms also sell to other firms.
- The diagram does not show the government.

Mandatory readings

- Krugman, P. and Wells, R. (2023). *Essentials of Economics*. MacMillan Learning. 6th edition.
  - Chapter 1: First principles.
  - Chapter 2: Economic models: trade-offs and trade.

Homework – Mandatory readings

- Krugman, P. and Wells, R. (2023). *Essentials of Economics*. MacMillan Learning. 6th edition.
  - Appendix to Chapter 2: Graphs in Economics.

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End of Topic 1

Economic problems

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