Limits, Alternatives, and Choices

Chapter 1

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Learning Objectives

- Define economics and the features of the economic perspective
- Describe the role of economic theory in economics
- Distinguish microeconomics from macroeconomics

Learning Objectives (1)

- Distinguish positive economics from normative economics
- Explain the individual's economizing problem

Learning Objectives (2)

- List the categories of scarce resources
- Apply production possibilities analysis, increasing opportunity costs, and economic growth.

Introduction

- People are full of wants and needs
- Society possesses productive resources to satisfy many of our wants
- Needs exceed our productive capacity
  - Resources are limited
    - We have to make choices

Introduction (1)

- Economics is a social science concerned with making optimal choices under conditions of scarcity

The Economic Perspective

Scarcity and Choice

- The economic resources are in limited supply
  - Choices must be made
  - Opportunity costs
    - To obtain more of one thing, society forgoes the opportunity of getting the next best thing
- Core of economics: "There is no free lunch"
  - Someone bears the cost

Purposeful Behavior

- Human behavior reflects “rational self-interest”
  - Individuals look for to increase their utility
    - They aim to maximize their satisfaction
  - Firms are purposely acting to maximize their profit
- Purposeful behavior” means: people make decisions with some desired outcome in mind.

Marginal Analysis

- Comparisons of marginal benefits and marginal costs for decision making
- **Marginal**: extra, additional, or a change in
- Each option involves marginal benefits and, marginal costs

Theories, Principles, and Models

The Scientific Method

- Like other sciences, economics relies on the scientific method: elements
  - Observation of the real world
  - Hypothesis formulation
  - Testing the hypothesis
  - Accepting, rejecting, or modifying the hypothesis

The Scientific Method(1)

- Economists develop individuals and institutions behavior theories
- Theories, principles, and models are "purposeful simplifications."
- Economic principles and models are the tools for ascertaining cause and effect

The Scientific Method(2)

- Economic principles are
  - Generalizations relating to economic behavior
  - Using the *ceteris paribus* or *other things-equal* assumption
    - Factors other than those being considered do not change.
  - Graphical expression
    - Economic models are often expressed graphically

Microeconomics and Macroeconomics

Economists develop economic principles and models at two levels.

Microeconomics

- Decision making by individuals, households, or business firms
- Details of their behavior
- Examples:
  - Price of a specific product
  - Number of workers
  - Revenue or income of a particular firm or household
  - Expenditures of a specific firm, government entity, or family

Macroeconomics

- Examines the performance and behavior of the economy as a whole. It
- focuses its attention on
  - Economic growth
  - Business cycle
  - Interest rates
  - Inflation

Macroeconomics(1)

- Behavior of major economic aggregates such as
  - Government
  - Household
  - Business sectors.
- An aggregate is a collection of specific economic units treated as if they were one unit.
  - Seeks to obtain an overview, or general outline
- Micro–macro distinction does not mean that economics is so highly compartmentalized

Positive and Normative Economics

- They concern both Microeconomics and macroeconomics
- **Positive economics** focuses on facts and cause-and-effect relationships.
  - Includes description, theory development, and theory testing.
  - Avoids value judgments.
  - Establishes scientific statements about economic behavior
  - Deals with what the economy is actually like.
  - Critical to good policy analysis.
  - Examples: “The unemployment rate in France is higher than that in the United States.”

Positive and Normative Economics(1)

- **Normative economics**
  - Incorporates value judgments about what the economy should be like
  - Concerns particular policy actions recommended to achieve a desirable goal
  - Looks at the desirability of certain aspects of the economy
  - Underlies expressions of support for particular economic policies.
  - Example: “France ought to undertake policies to make its labor market more flexible to reduce unemployment rates

Individual's Economizing Problem

Economizing Problem

- The need to make choices
- Caused because by economic wants exceed economic means
- Implying
  - to take account of a budget constraint line
  - to distinguish between unattainable and unattainable options
  - to take account of trade-offs and opportunity costs
  - to make the best choice possible
  - According to change in income

Limited Income

- We all have a finite amount of income
- even the wealthiest among us must decide how to spend his money
- Income comes to us in the form of wages, interest, rent, and profit
- Some people don’t earn any income

Unlimited Wants

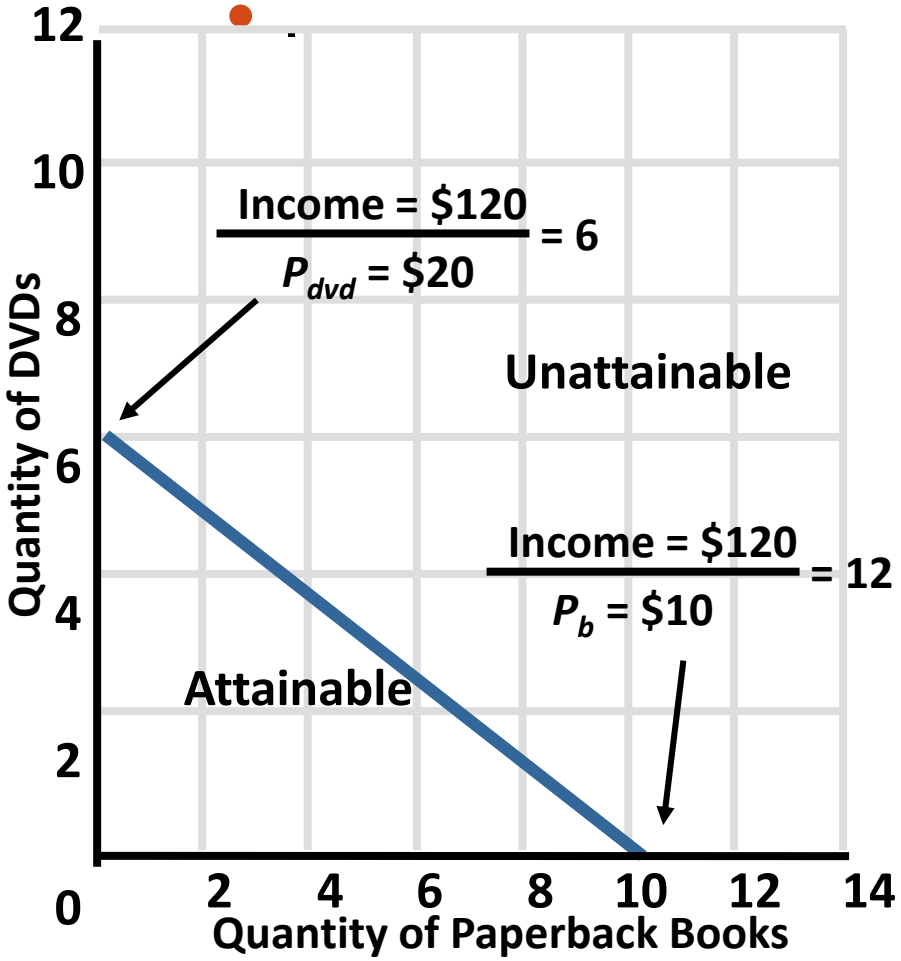
- Most people have virtually unlimited wants.
  - Biological
  - Or sociological
- We desire goods and services that provide utility
- Economic wants tend to change over time
- For most people, their needs cannot be fully satisfied.
- Because of limited income and insatiable wants, we need to economize

A Budget Line

- The economizing problem is visualized by a budget line
  - A budget constraint
- A schedule or curve of various combinations of products a consumer can afford with his income
- We assume two products
  - See next slide

A Budget Line(1)

$120 Budget	
DVDs $20	Books $10
6	0
5	2
4	4
3	6
2	8
1	10
0	12



A Budget Line(2)

- **Attainable and Unattainable Combinations**
- From the $120 of money income
  - All the combinations of DVDs and books on or inside the budget line are
  - What you can afford to buy with the $120
- The budget line shows all combinations that cost exactly the full $120
- All the combinations beyond the budget line are unattainable

A Budget Line

- **Trade-Offs and Opportunity Costs**
  - The budget line iillustrates the idea of trade-offs arising from limited income.
  - To obtain more DVDs, you have to give up some books
    - 2 books.
    - So the opportunity cost of the first DVD is 2 books
  - The constant slope of the line budget constraint is a constant opportunity cost

A Budget Line(3)

- **Choice**
  - Limited income forces people to choose what combination of goods to satisfy their needs
    - You will select the combination that you think is “best.”
  - You evaluate your marginal benefits and marginal costs to make choices
    - that maximize your satisfaction

A Budget Line(4)

- **Income Changes**
- The location of the budget line varies with money income
  - An increase in money income shifts the budget line to the right
  - A decrease in money income shifts it to the left.

Society's Economizing Problem

Society must also make choices under conditions of scarcity

Society's Economizing Problem

- Society must also make choices under conditions of scarcity.
- It faces an economizing problem.
- Limited resources:
  - Land.
  - Labor
  - Capital
  - Entrepreneurial Ability

Society's Economizing Problem(1)

- **Scarce Resources**
  - Society has limited or scarce economic resources
  - All natural, human, and manufactured resources used in the production of goods and services
  - Four general categories.
  - Combined to produce goods and services
  - Called **factors of production**, or **"inputs."**

Society's Economizing Problem(2)

- **Resource Categories**:
- **Land** : all natural resources ("gifts of nature") used in the production process.
  - These include forests
  - Mineral and oil deposits
  - Water resources
  - Wind power
  - Sunlight,
  - Arable land.

Society's Economizing Problem(3)

- **Resource Categories:**
- **Labor**: people's physical actions and mental activities to produce goods and services.
  - The work-related activities of a logger,
  - Retail clerk,
  - Machinist,
  - Teacher
  - Professional football player
  - Nuclear physicist

Society's Economizing Problem(4)

- **Resource Categories**
- **Capital (or capital goods):**
  - Manufactured aids used in producing goods and services.
    - Factory, storage, transportation, and distribution facilities, tools and machinery.
  - Investment is spending for the production and accumulation of capital goods.

Society's Economizing Problem(5)

- Consumer goods satisfy wants directly, whereas capital goods do so indirectly
- The term "capital" refers to productive equipment
- Money (financial capital): a means for purchasing consumer goods and capital goods

Society's Economizing Problem(6)

- **Resource Categories**
- **Entrepreneurial Ability**
- Resources supplied by entrepreneurs, who perform important economic functions
- The entrepreneur takes the initiative to produce a good or a service.
  - He is the driving force behind production
  - the agent who combines the other resources
  - The agent who makes the strategic business decisions

Society's Economizing Problem(7)

- The entrepreneur innovates
- The entrepreneur bears risk
  - Innovation is risky

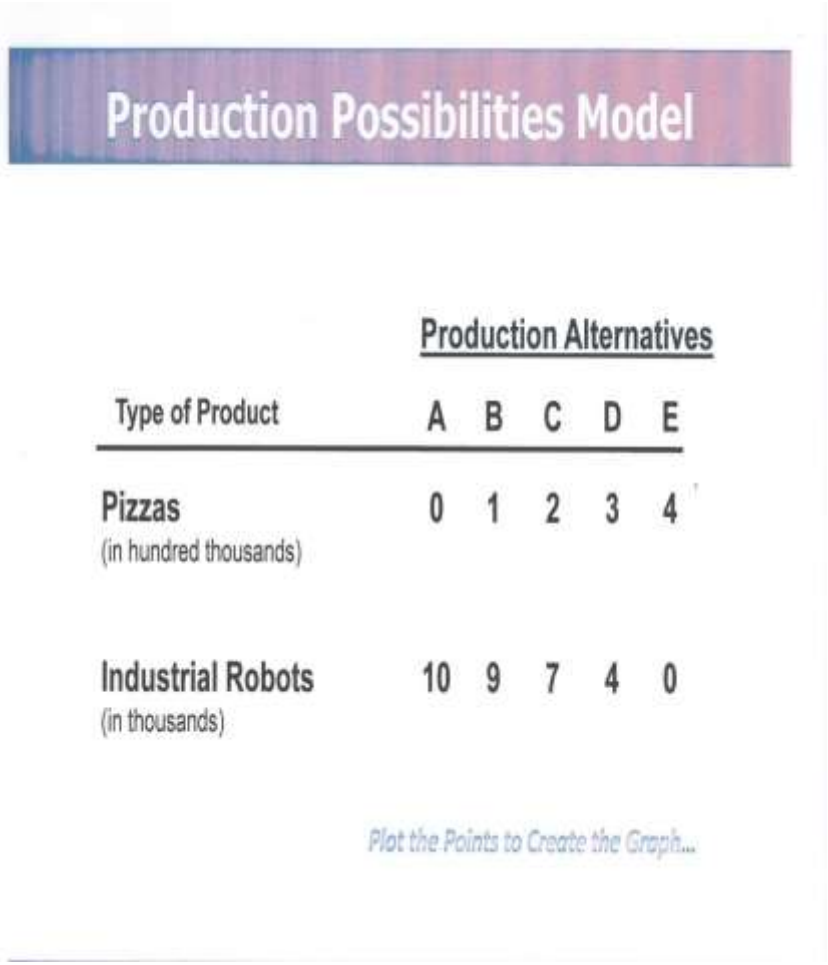
Production Possibilities Model

Society uses its scarce resources to produce goods and services

Production Possibilities Model

- The macroeconomic model of production possibilities
- It shows alternatives and choices it faces
- Assumptions:
  - **Full employment**
    - The economy employs all its available resources.
  - **Fixed resources**
    - The quantity and quality of the factors of production are fixed.
  - **Fixed technology**
    - The state of technology is constant.
  - **Two goods**
    - The economy is producing only two goods: pizzas and industrial robots

Production Possibilities Table



- A production possibilities table lists the different combinations of two products that can be produced with a specific set of resources
- Table 1.1 presents a simple, hypothetical economy that is producing pizzas and industrial robots.
- At alternative A, this economy uses all its available resources to produce industrial robots
- at alternative E, all resources would go to pizza production
- An economy typically produces both capital goods and consumer goods, as in B, C, and D.

Production Possibilities Table(1)

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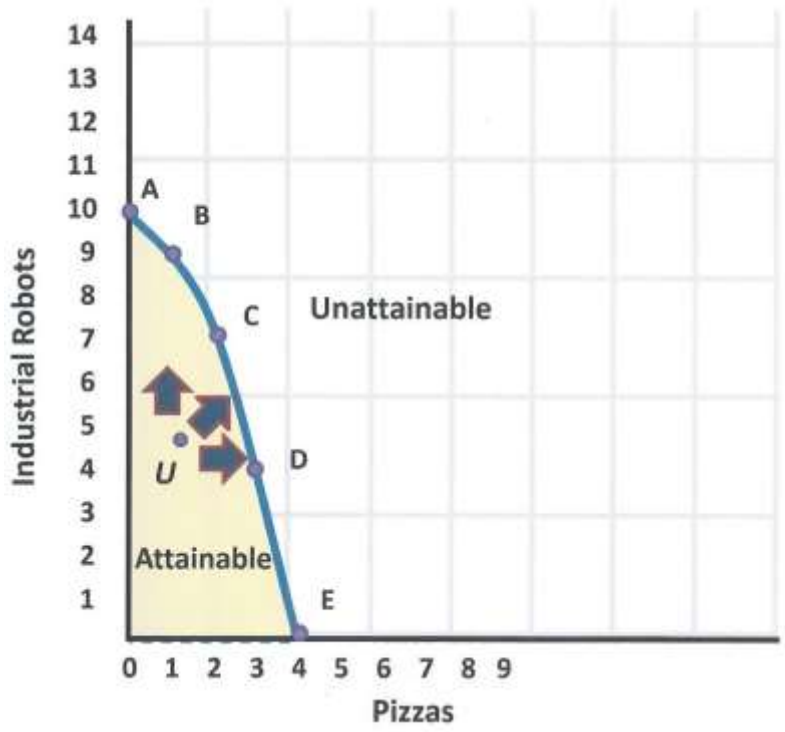
Production Possibilities Table(2)

- Moving from alternative A to E, we increase the production of pizzas at the expense of the production of industrial robots.
- But there is a cost: More pizzas mean fewer industrial robots.
  - Thereby reducing potential future production.

Production Possibilities Table(3)

- By moving toward A, society chooses to forgo current consumption
  - Thereby freeing up resources that can be used to increase the production of capital goods.
- By building up its stock of capital this way, society will have greater future production
  - Greater future consumption

Production Possibilities Curve



- The production possibilities table is shown graphically as a production possibilities curve
- It displays the different combinations of goods and services that society can produce in
  - A full employment economy
  - Assuming a fixed availability of supplies of resources and fixed technology

Production Possibilities Curve(1)

- Each point on the curve represents the two goods maximum production
- The curve is a "constraint" because it shows the limit of attainable outputs.
  - Points on the curve are attainable with its available resources.
  - Points inside the curve are attainable, but they are not as desirable as points on the curve.
  - Points lying beyond the curve are unattainable with the current availability of resources and technology.

Law of Increasing Opportunity Costs

- The opportunity cost of pizzas: the number of industrial robots units that must be given up to obtain another unit of pizzas
- In moving from alternative A to alternative E: the opportunity cost of each additional unit of pizzas is greater than the opportunity cost of the preceding one.
  - To get an additional pizza we sacrifice 1, 2, 3, 4 robots

Law of Increasing Opportunity Costs(1)

- Conversely, moving from E to A, the cost of an additional unit of industrial robots is 1/4, 1/3, 1/2, and 1 unit of pizzas,
- Our example illustrates the law of increasing opportunity costs reflected in the shape of the curve

Economic Rationale

- The law of increasing opportunity costs: economic resources are not completely adaptable to alternative uses.
  - Many resources are better at producing one type of good than at others.
- By increasing resources to produce one good, we are making them increasingly scarce.
- The resources lack of perfect interchangeability causes the increasing opportunity costs

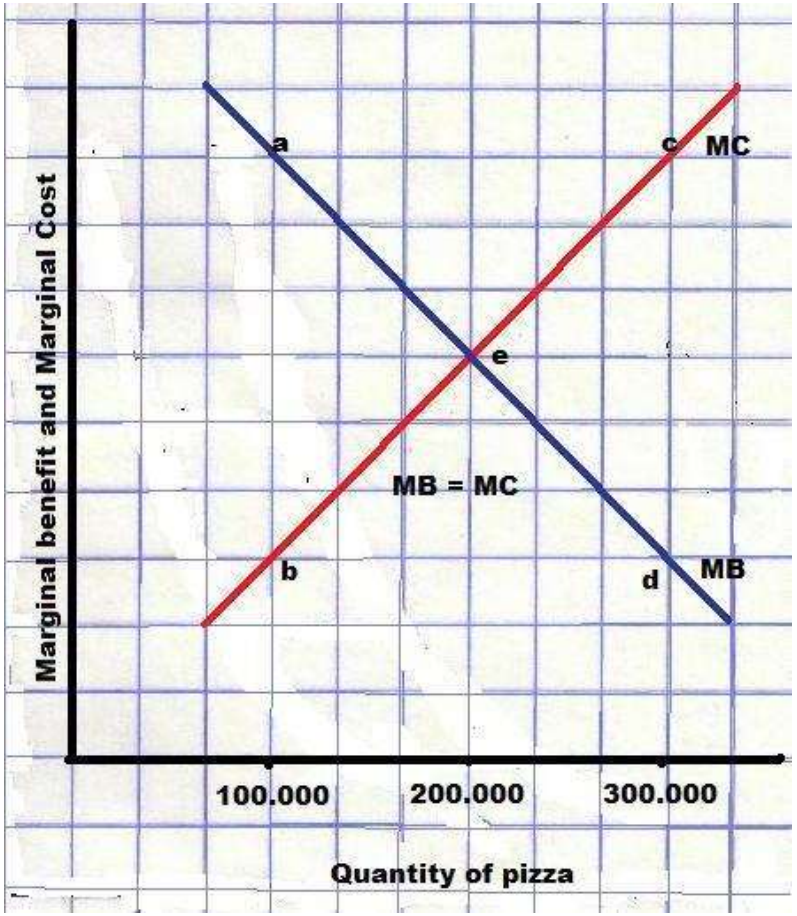
Optimal Allocation

- Which of the attainable combinations of pizzas and industrial robots is optimal (best)?
  - That is to maximize satisfaction?
- Any economic decision is based s on comparisons of marginal benefit (MB) and marginal cost (MC).

Optimal Allocation(1)

- The optimal amount of the activity occurs where MB = MC.
  - Society needs to make a similar assessment about its production decision
- Each successive unit of pizza brings with it both increasing marginal costs and decreasing marginal benefits.

Optimal Allocation(2)

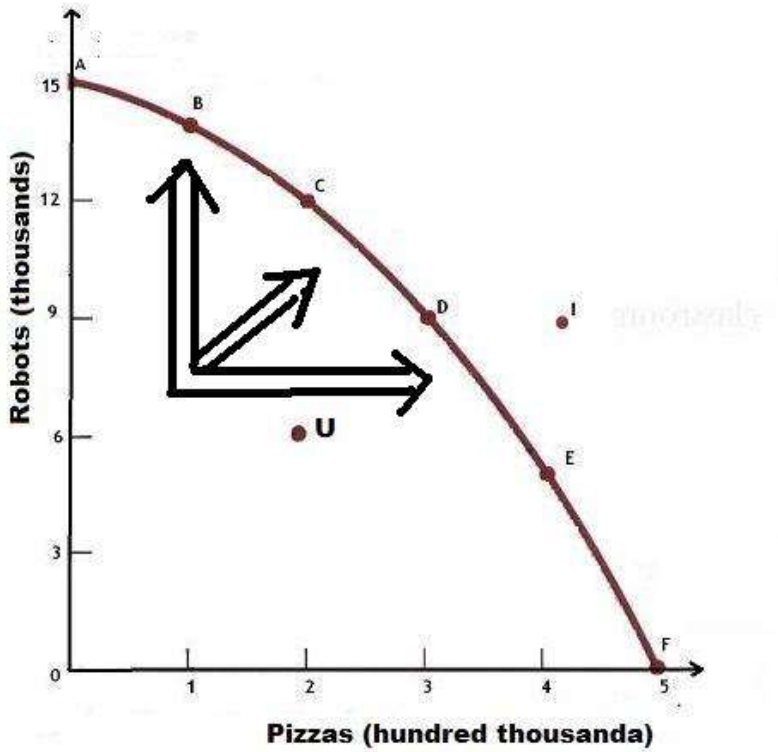


- In Figure 1.3, net gains can continue to be realized until pizza production has been increased to 200,000.
- So resources are efficiently allocated when the marginal benefit and marginal cost of its output are equal (MB = MC)

Unemployment, Growth, and the Future

Economic growth and international trade increase consumption possibilities

Unemployment and the PP Curve



- Any point inside the production possibilities curve U represents unemployment or a failure to full employment. The arrows
- indicate that by realizing full employment, the economy could operate on the curve.
- This means it could produce more of one or both products than it is producing at point U.

A Growing Economy

- When we drop the assumptions, the production possibilities curve shifts positions

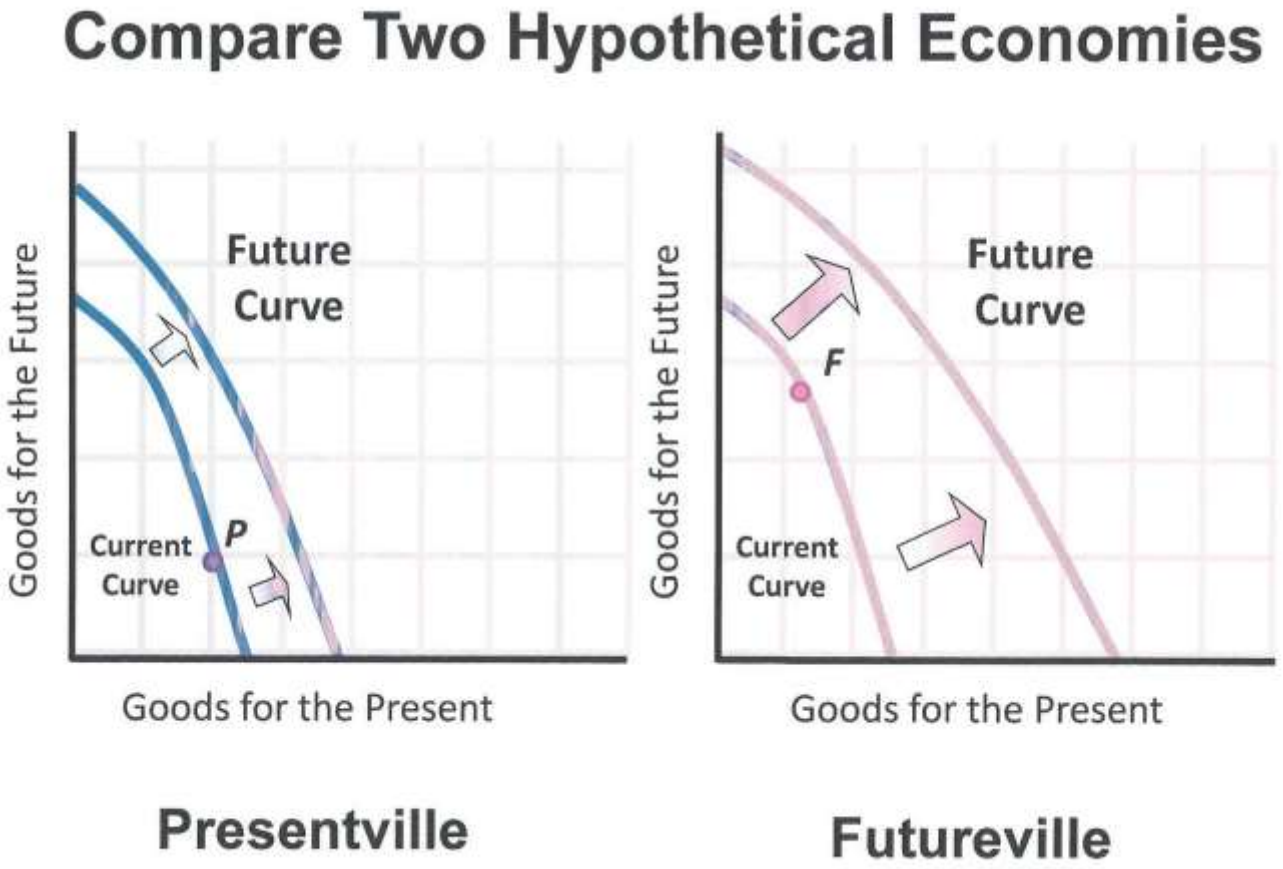
A Growing Economy: Increases in Resource Supplies

- Resource supplies are fixed at any specific moment, but they change over time.
  - Growing population increases in the labor supplies and entrepreneurial ability.
  - More education improves labor quality
- Increased supplies of the factors of production equals the ability to produce more
- The production possibilities curve shifts outward and to the right

A Growing Economy: Advances in Technology

- An advancing technology brings both new and better goods and improved ways of producing them
- It allows society to produce more goods with available resources
- It causes outward shifts of the nation's production possibilities curve

Present Choices and Future Possibilities



Present Choices and Future Possibilities (1)

- An economy's current choice of positions on its production possibilities curve helps determine the future location of that curve.
  - Goods for the future such as capital goods
  - Goods for the present are consumer goods

A Qualification: International Trade

- In this analysis an individual nation is limited to the combinations of output indicated by its production possibilities curve
- International specialization and trade allow a nation to get more of a desired good at less sacrifice of some other good
- Expansion of domestic production possibilities and international trade are two separate routes for obtaining greater output

Pitfalls to Sound Economic Reasoning

Some common pitfalls to avoid in successfully applying the economic perspective

Biases

- Biases and preconceptions to the field of economics
- Biases cloud thinking and interfere with objective analysis
- All of us must be willing to shed biases and preconceptions that are not supported by facts

Loaded Terminology

- The economic terminology used is sometimes emotionally biased, or loaded
- Reject or discount such terminology

Fallacy of Composition

- Thinking that the assumption that what is true for one individual is necessarily true for a group of individuals
- A statement that is valid for an individual or part is not necessarily valid for the larger group or whole

Post Hoc Fallacy

- Because event A precedes event B, don't assume that A is the cause of B.
- This kind of faulty reasoning is known as the post hoc, ergo propter hoc, or "after this, therefore because of this," fallacy

Correlation but Not Causation

- Correlation between two sets of data indicates an association in some systematic and dependable way
  - The relationship could be purely coincidental or dependent on some other factor not included in the analysis.
- Causation: cause and effect