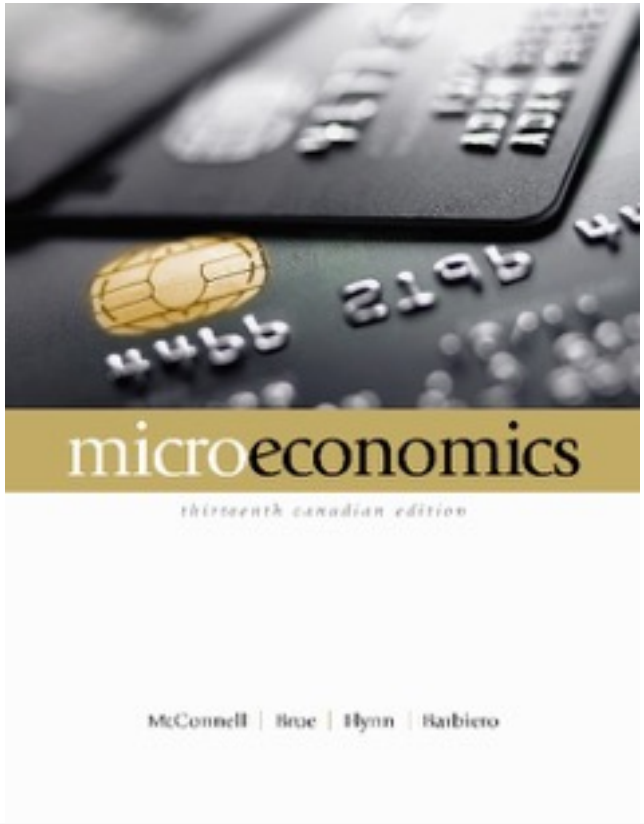
PART 1: AN INTRODUCTION
TO ECONOMICS
AND THE ECONOMY

Chapter 1
Limits, Alternatives and Choice



Xingfei Liu
Ryerson University

Learning Objectives

1. The Ten Key Concepts to benefit for a lifetime
2. The features of the economic way of thinking
3. The role of economic theory in economics
4. The distinction between microeconomics and macroeconomics
5. The nature of the economic problem and the categories of scarce resources
6. About production possibilities analysis and increasing opportunity costs
7. What economic growth is, and how present choices determine future production possibilities

Definition of Economics

- Economics studies
  1. The social science that studies how individuals, institutions, and society make optimal choices under conditions of scarcity.
  2. Human wants are unlimited, but the means to satisfy the wants are limited.

1.1 Ten Key Concepts

- The Individual
  1. Facing trade-offs
  2. Opportunity Costs
  3. Choosing a Little More or Less
  4. The Influence of Incentives

1.1 Ten Key Concepts

- Interaction Among Individuals
  5. Specialization and Trade
  6. The Effectiveness of Markets
  7. The Role of Governments

1.1 Ten Key Concepts

- The Economy as a Whole and the Standard of Living
  8. Production and the Standard of Living
  9. Money and Inflation
  10. Inflation-Unemployment

1.2 The Economic Way of Thinking

Scarcity and Choice

- Resources can only be used for one purpose at a time.
- Scarcity requires that choices be made.
- The cost of any good, service, or activity is the value of what must be given up to obtain it. (opportunity cost).

A. Are there really "free goods" ? Why?

1.2 The Economic Way of Thinking

- Rational Behaviour (purposeful)
  - Rational self-interest entails making decisions to achieve maximum utility.
  - Utility is the pleasure or satisfaction obtained from consuming a good or service.
  - Different preferences and circumstances (including errors) lead to different choices.
  - Rational self-interest is not the same as selfishness.

1.2 The Economic Way of Thinking

Marginal Analysis: Benefits and Costs

- Most decisions concern a change in current conditions; therefore the economic perspective is largely focused on marginal analysis.
- Each option considered weighs the marginal benefit against the marginal cost.
- Whether the decision is personal or one made by business or government, the principle is the same.
- The marginal cost of an action should not exceed its marginal benefits.
- There is "no free lunch"
- Conflicts between long and short-run objectives may result in decisions that appear to be irrational, when in fact they are not.
- Example, fast food line ups.

1.3 Theories, Principles and Models

- The scientific method:
  - Observe the world (real data, prices, quantities, GDP)
  - Formulate hypotheses

The formulations of explanations of cause and effect relationships (hypotheses) based upon the facts.

  - Test by comparing actual outcomes to the hypothesized predictions
  - Accept, reject, modify hypotheses as indicated
  - Continue testing against the facts

1.3 Theories, Principles and Models

Deriving Theories

Theories, principles, and models are "purposeful simplifications."

Principles are used to explain and/or predict the behaviour of individuals and institutions.

- Terminology (optimization; elasticity…)
- Generalizations (average consumer, representative firm/agent etc…)

1.3 Theories, Principles and Models

- ## Other-Things-Equal Assumption

ceteris paribus assumption—In order to judge the effect one variable has upon another it is necessary to hold other contributing factors constant. Natural scientists can test with much greater precision than can economists. They have the advantage of controlled laboratory experiment. Economists must test their theories using the real world as their laboratory.

- ## Graphical Expression

Many economic relationships are quantitative, and are demonstrated efficiently with graphs.

1.4 Microeconomics versus Macroeconomics

- Microeconomics examines
  - Individual units (household, firm or industry) and their decision making process
- Macroeconomics examines
  - The whole economy
  - The subdivisions or aggregates

Positive and Normative Economics

- Positive economics
  - The analysis of facts to establish cause-and-effect relationships. No value judgement. Only facts.
- Normative economics
  - The part of economics involving value judgments about what the economy should be like.

1.5 The Economic Problem

Individual economic problem

1. Individuals are confronted with the need to make choices because their wants exceed their means to satisfy them.
2. Limited income – everyone, even the most wealthy, has a finite amount of money to spend.
3. Unlimited wants – people's wants are virtually unlimited.
    1. Wants include both necessities and luxuries (although many economists don't worry about this distinction).
    2. Wants change, especially as new products are introduced.
    3. Both goods and services satisfy wants.
    4. Even the wealthiest have wants that extend beyond their means (e.g. Bill Gates' charitable efforts).

1.5 The Economic Problem

- Individual economic problem

The combination of limited income and unlimited wants force us to choose those goods and services that will maximize our utility.

1.5 The Economic Problem

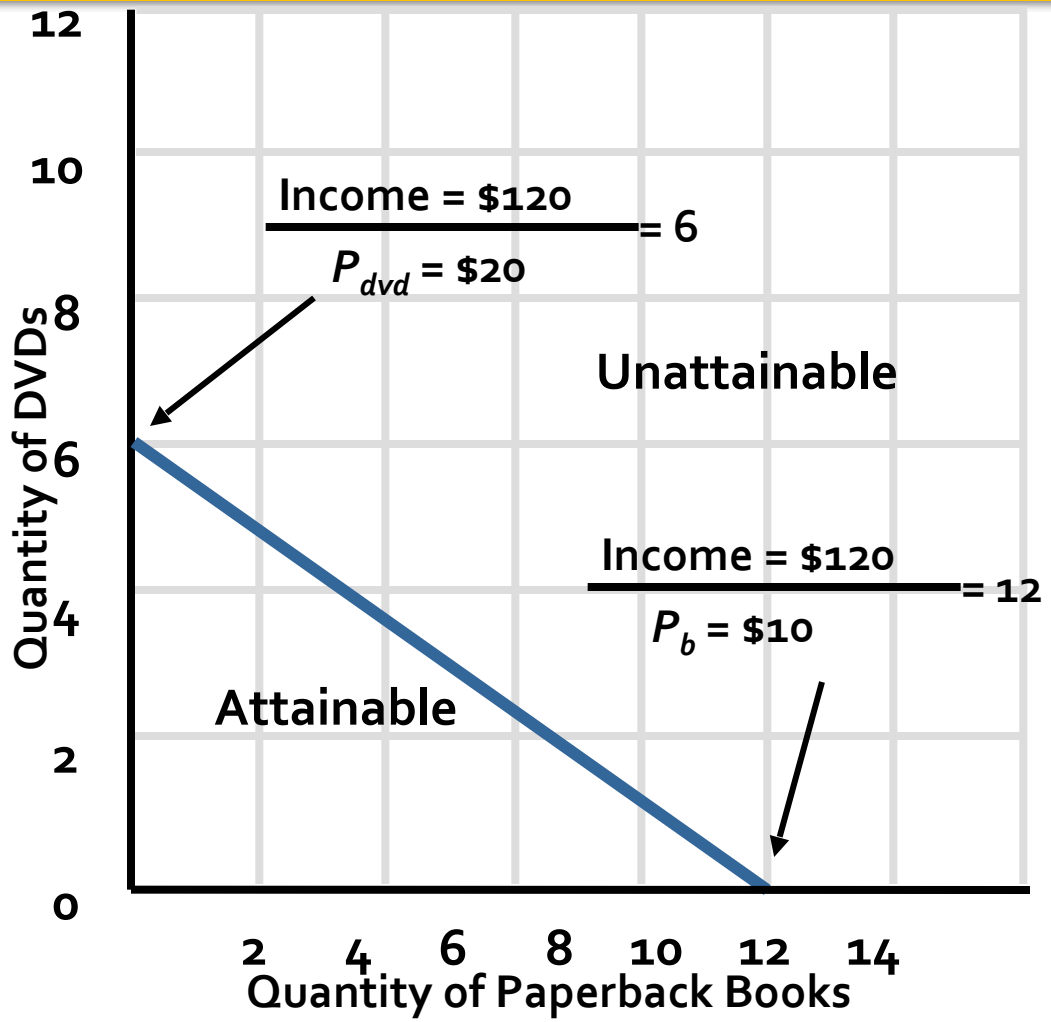
- Individual economic problem
- Budget constraint (Budget line)

1. Definition: A schedule or curve that shows the various combinations of two products a consumer can purchase with a specific money income.
2. The model assumes two goods, but the analysis generalizes to all goods available to consumers.
3. The location of a budget line depends on a consumer's money income, and the prices of the two products under analysis.

Figure 1-1
A Consumer's Budget Line

$120 Budget

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



1.5 The Economic Problem

Budget constraint (continued)

- The slope of the graphed budget line is the ratio of the price of the good measured on the horizontal axis (P_{books}) to the price of the good measured on the vertical axis (P_{dvd}). A change in the price of one of the goods will change the slope of the budget line and change the purchasing power of the consumer.

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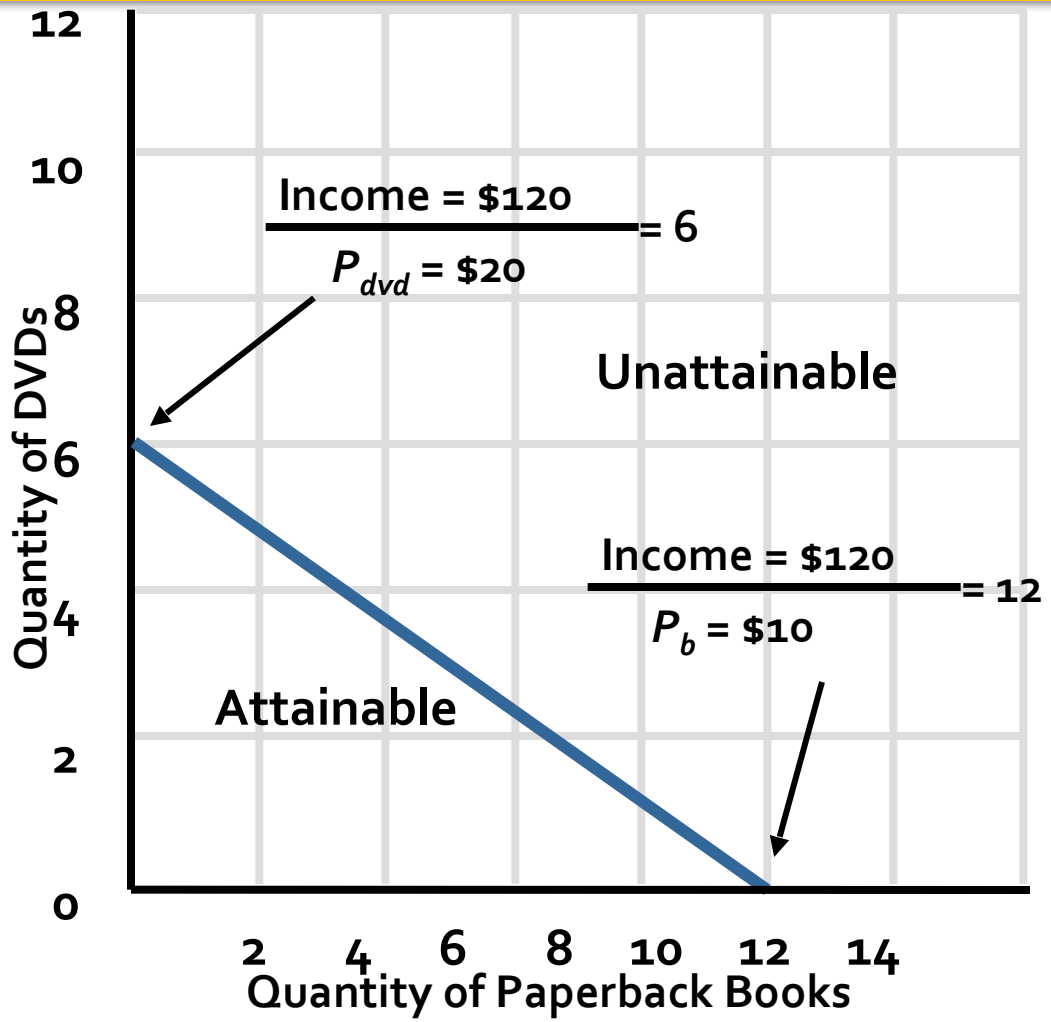

1.5 The Economic Problem

Budget constraint (continued)

- The budget line illustrates a number of important ideas:
  - Points on or inside the budget line represent points that are unattainable given the relevant income and prices. Points outside (up and to the right) the budget line are unattainable.
  - Tradeoffs and opportunity costs – the negative slope of the budget line represents that consumers must make tradeoffs in their consumption decisions; the value of the slope measures precisely the opportunity cost of one more unit of a good under analysis.

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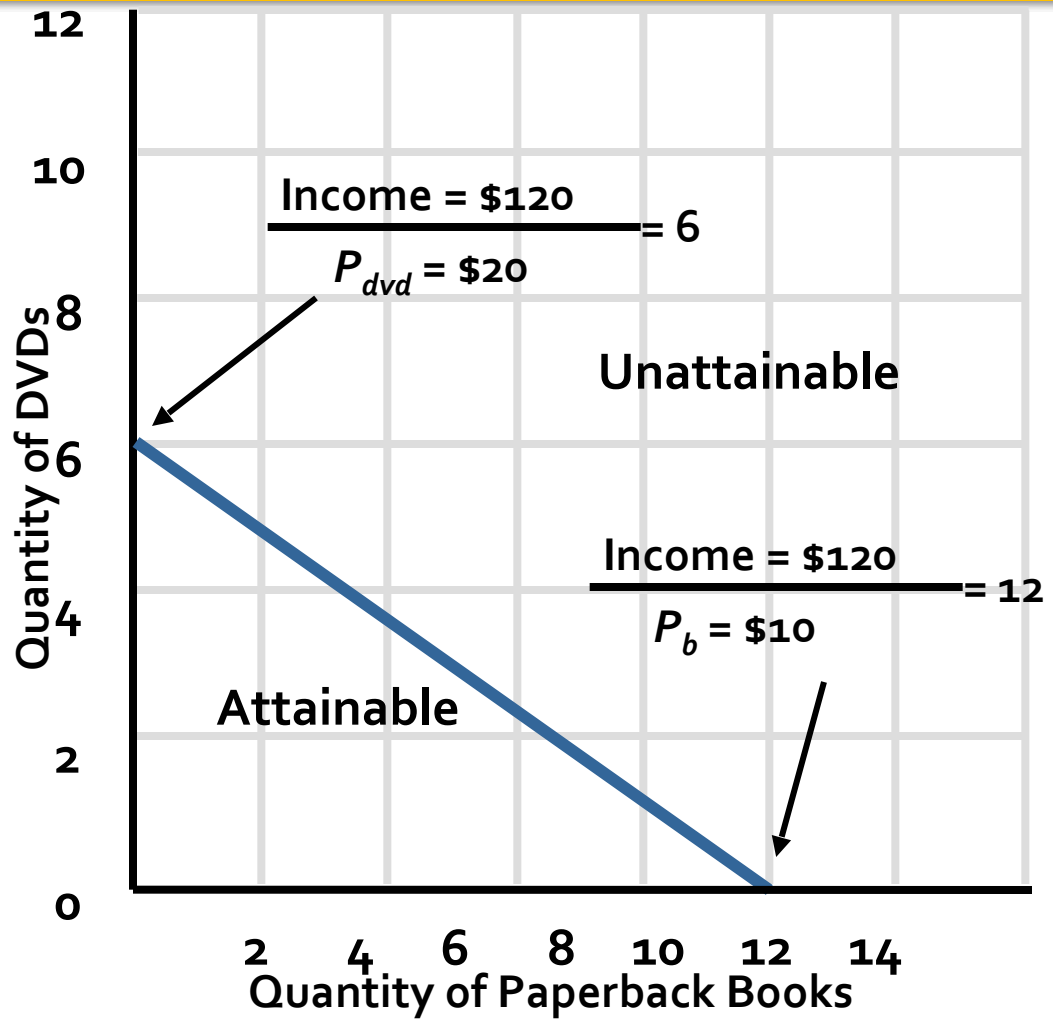


1.5 The Economic Problem

Budget constraint (continued)

- The budget line illustrates a number of important ideas:

  Limited income and positive prices force people to choose. Note that the budget line does not indicate what a consumer *will* choose, only what they *can* choose.

  Income changes will shift the budget line. Greater income will shift the line out and to the right, allowing consumers to purchase more of both goods. Increasing income lessens scarcity, but does not eliminate it.

Global Perspective

Average Income, Selected Nations

Country	Per Capita Income, 2010 (U.S. dollars, based on exchange rates)
Switzerland	70,350
United States	47,140
Canada	41,950
France	42,390
Japan	42,150
South Korea	19,890
Brazil	9,390
Mexico	9,330
China	7,560
Pakistan	2,780
Nigeria	2,160
Rwanda	1,180
Liberia	330

Society's Economic Problem

- Scarce Resources
  - Land or natural resources
  - Capital or investment goods, which are all manufactured aids to production like tools, equipment, factories, transportation, etc.
  - Labour or Human Resources, which include physical and mental abilities used in production.
  - Entrepreneurial Ability, a special kind of human resource that provides four important functions:

Society's Economic Problem

- Scarce Resources
  - Entrepreneurial Ability, a special kind of human resource that provides four important functions:

1. Combines resources needed for production.
2. Makes basic business policy decisions.
3. Is an innovator for new products, production techniques, and organizational forms.
4. Bears the risk of time, effort, and funds.

1.6 Production Possibilities Model and Increasing Opportunity Costs

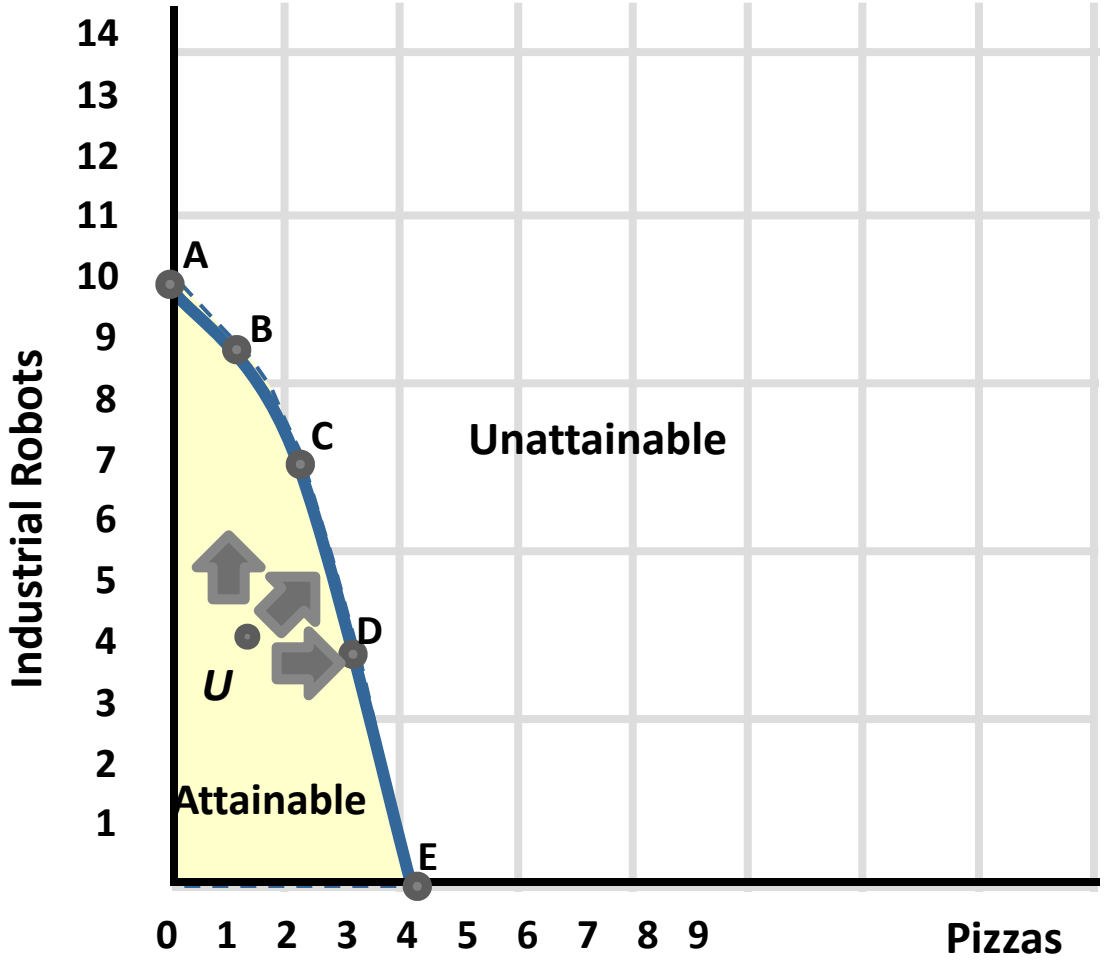
- Illustrates production choices
- Assumptions:
  - Full employment
  - Fixed resources
  - Fixed technology
  - Two goods

Production Possibility Table

	Production Alternatives				
Type of Product	**A**	**B**	**C**	**D**	**E**
Pizzas (in hundred thousands)	0	1	2	3	4
Industrial Robots (in thousands)	10	9	7	4	0

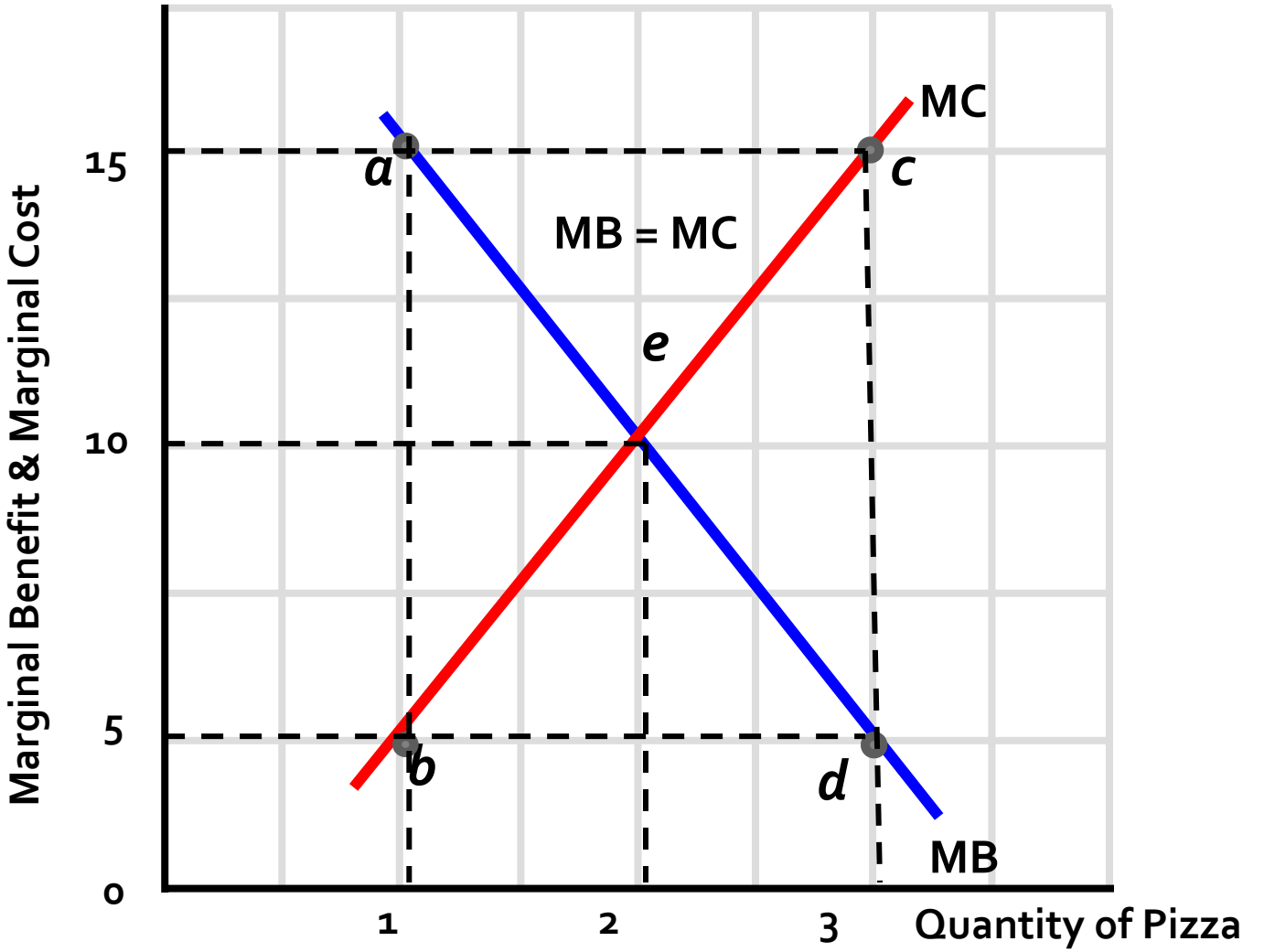
Plot the Points to Create the Graph…

Figure 1-2
The Production Possibility Curve



The law of increasing opportunity costs makes the PPC concave.

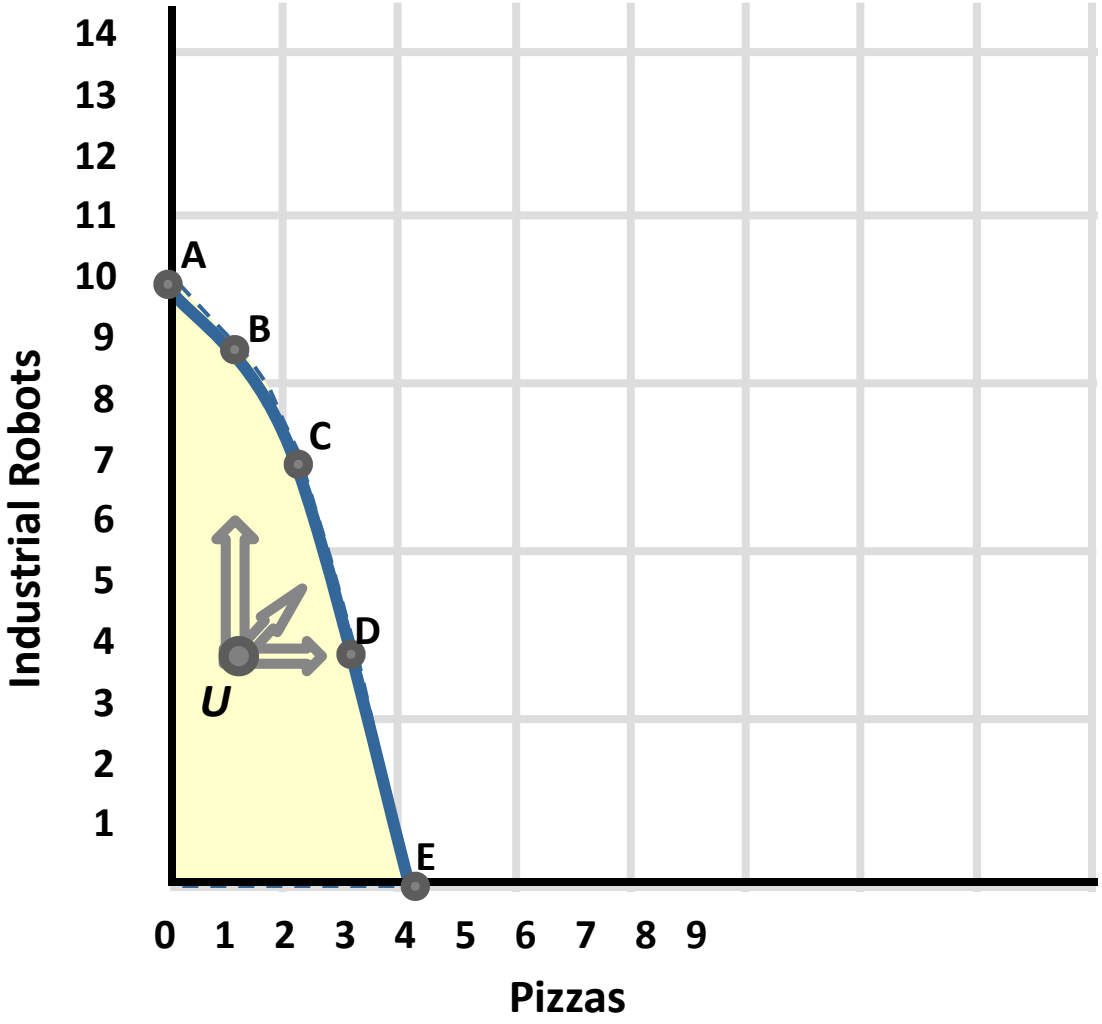
Figure 1-3
Optimal Location: MB = MC



1.7 Economic Growth, Present Choices, and Future Possibilities

- Economic Growth
  - More resources
  - Improved resource quality
  - Technological advances

Figure 1-4
Unemployment, Productive Inefficiency, and the Production Possibilities Curve



U, represents unemployment or a failure to achieve productive efficiency. The arrows indicate that, by realizing full employment and productive efficiency, the economy could operate on the curve.

Economic Growth and Production Possibility Curve

	Production Alternatives				
Type of Product	**A'**	**B'**	**C'**	**D'**	**E'**
Pizzas (in hundred thousands)	0	2	4	6	8
Industrial Robots (in thousands)	14	12	9	5	0

Figure 1-5
Economic Growth and Production Possibility Curve

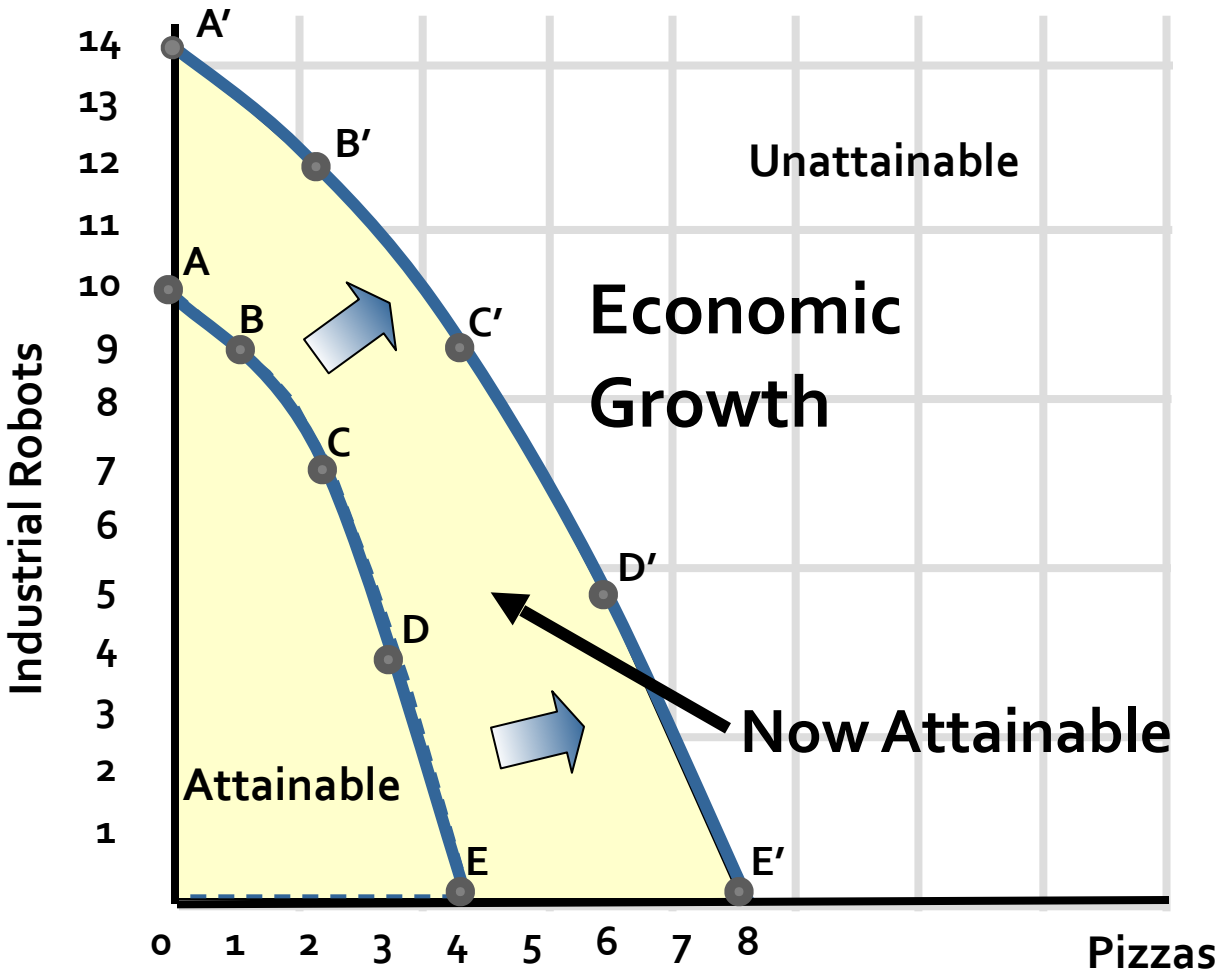
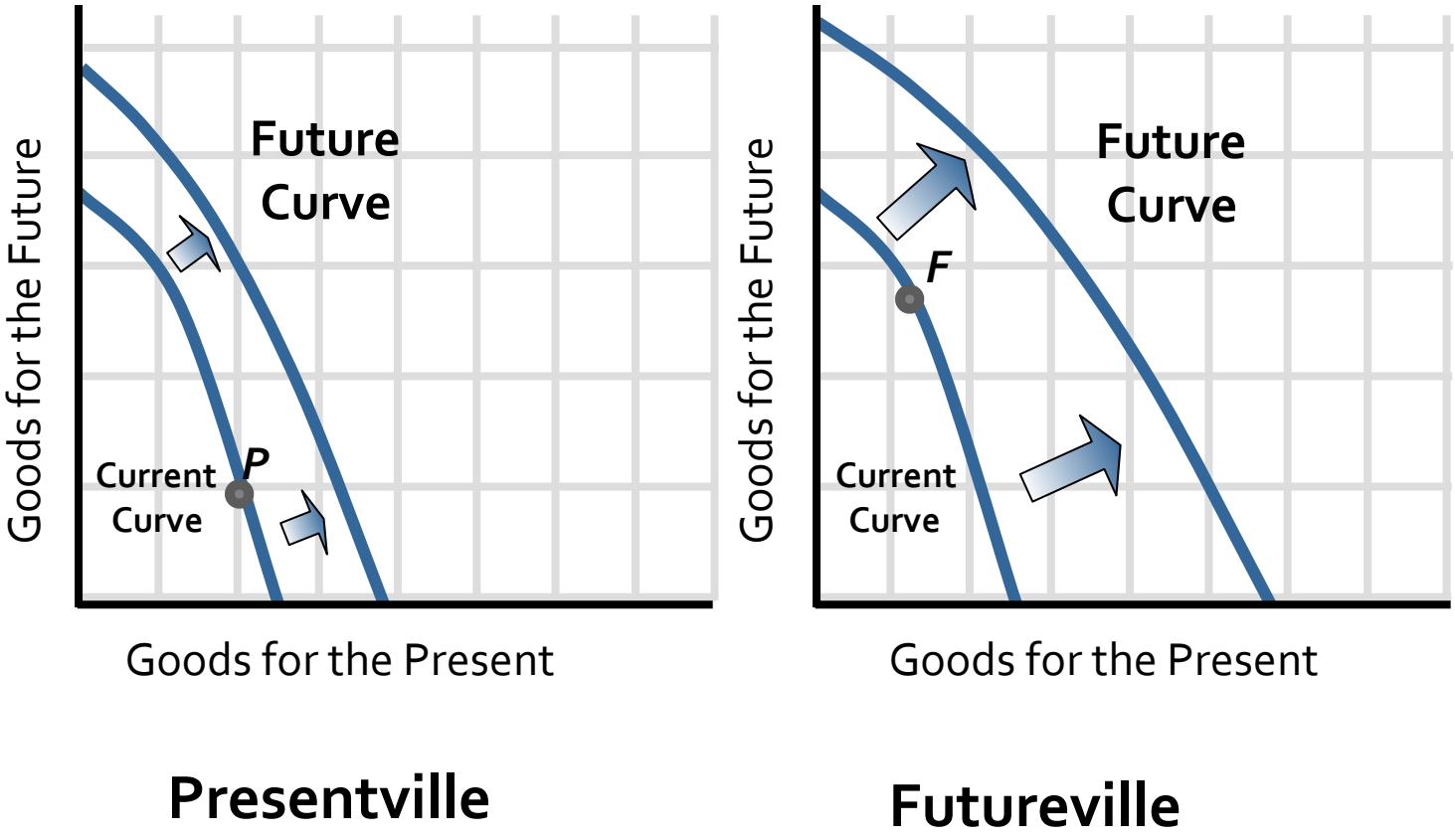


Figure 1-6
Present Choices and Future Possibilities



A Qualification: International Trade

- Specialization
- Increased production possibilities
  1. A nation can avoid the output limits of its domestic production possibilities through international specialization and trade.
  2. Specialization and trade have the same effect as having more and better resources of improved technology.

Chapter Summary

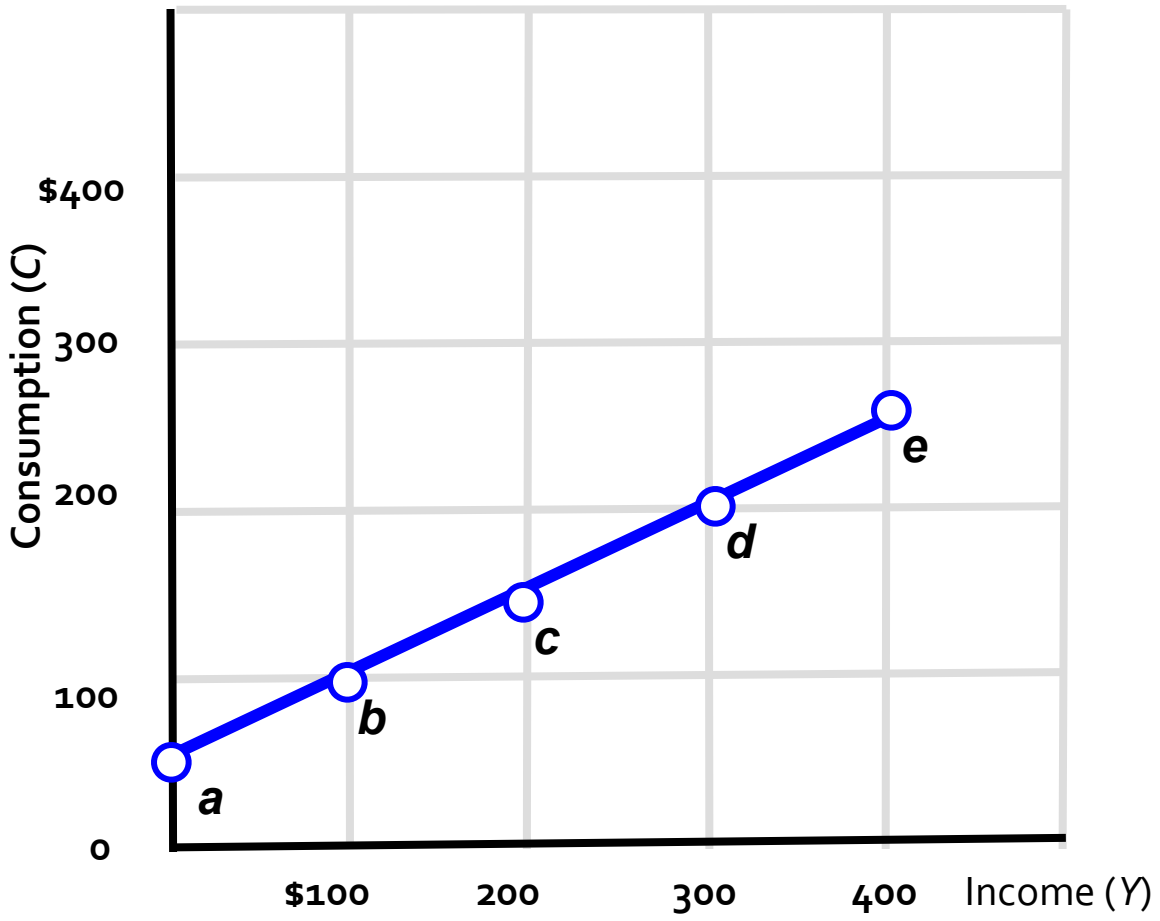
1.1 Ten Key Concepts to Retain for a Lifetime
1.2 The Economic Way of Thinking
1.3 Theories, Principles and Models
1.4 Macroeconomics and Microeconomics
1.5 The Economic Problem
1.6 The Production Possibilities Model and Increasing Opportunity Costs
1.7 Economic Growth, Present Choices, and Future Possibilities

Construction of a Graph

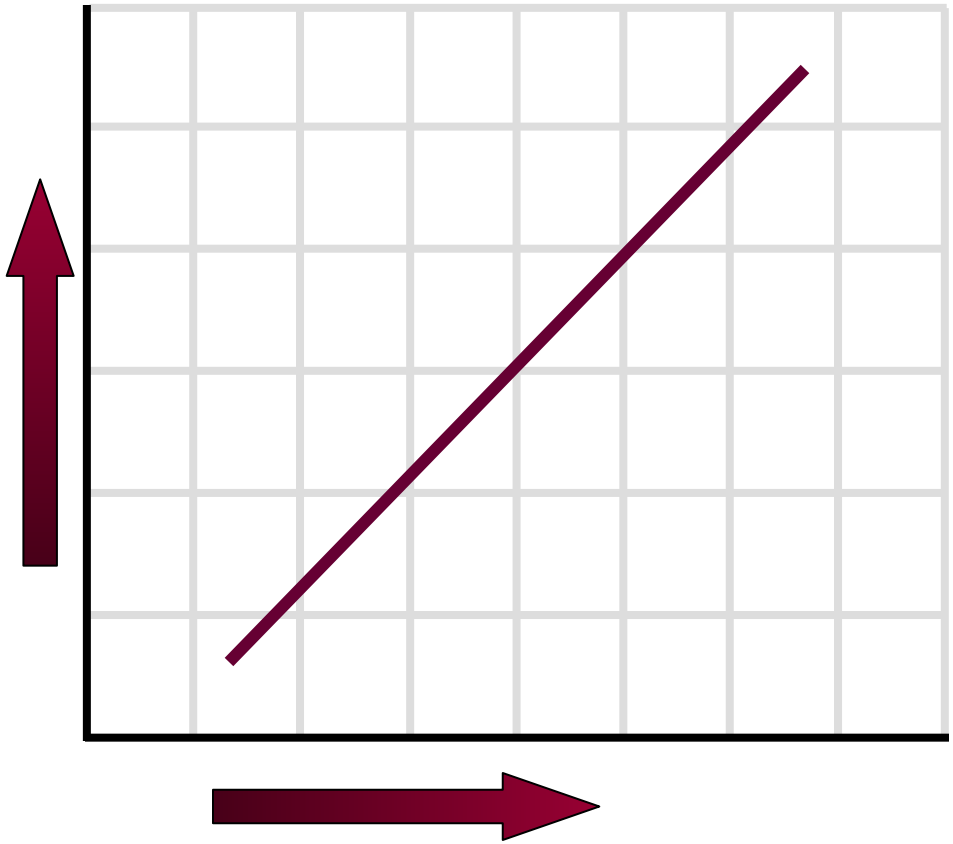
Table

Income	Consumption	Point
$ 0	$ 50	*a*
100	100	*b*
200	150	*c*
300	200	*d*
400	250	*e*

Graph

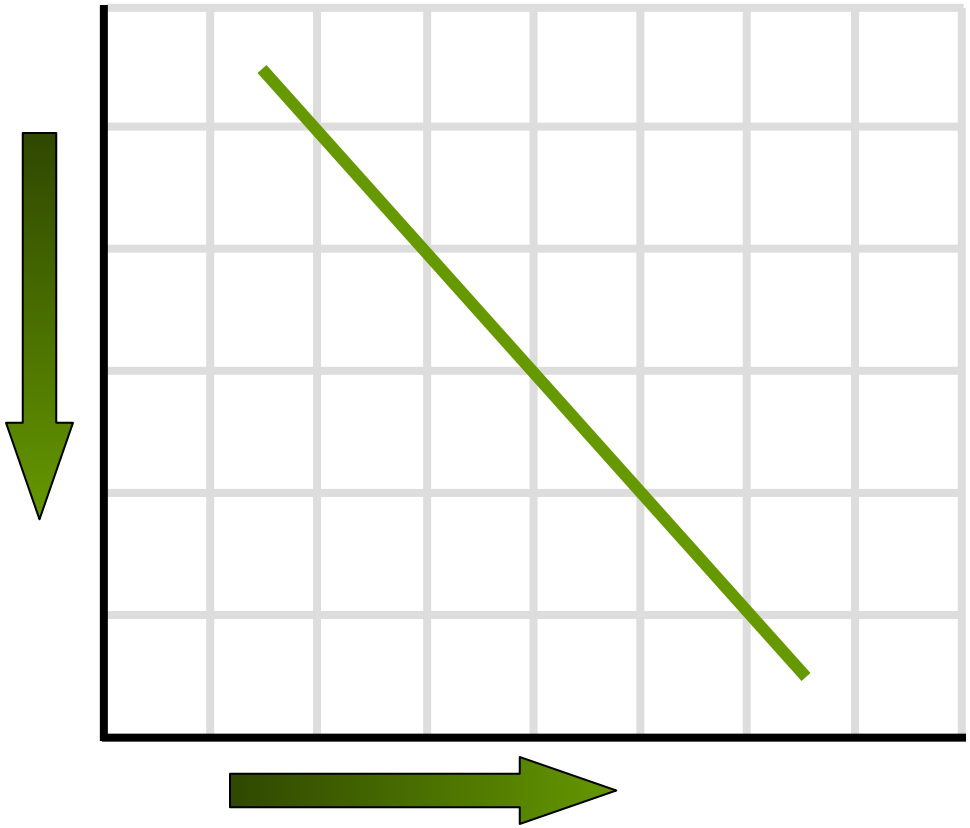


Direct and Inverse Relationships



Direct Relationship

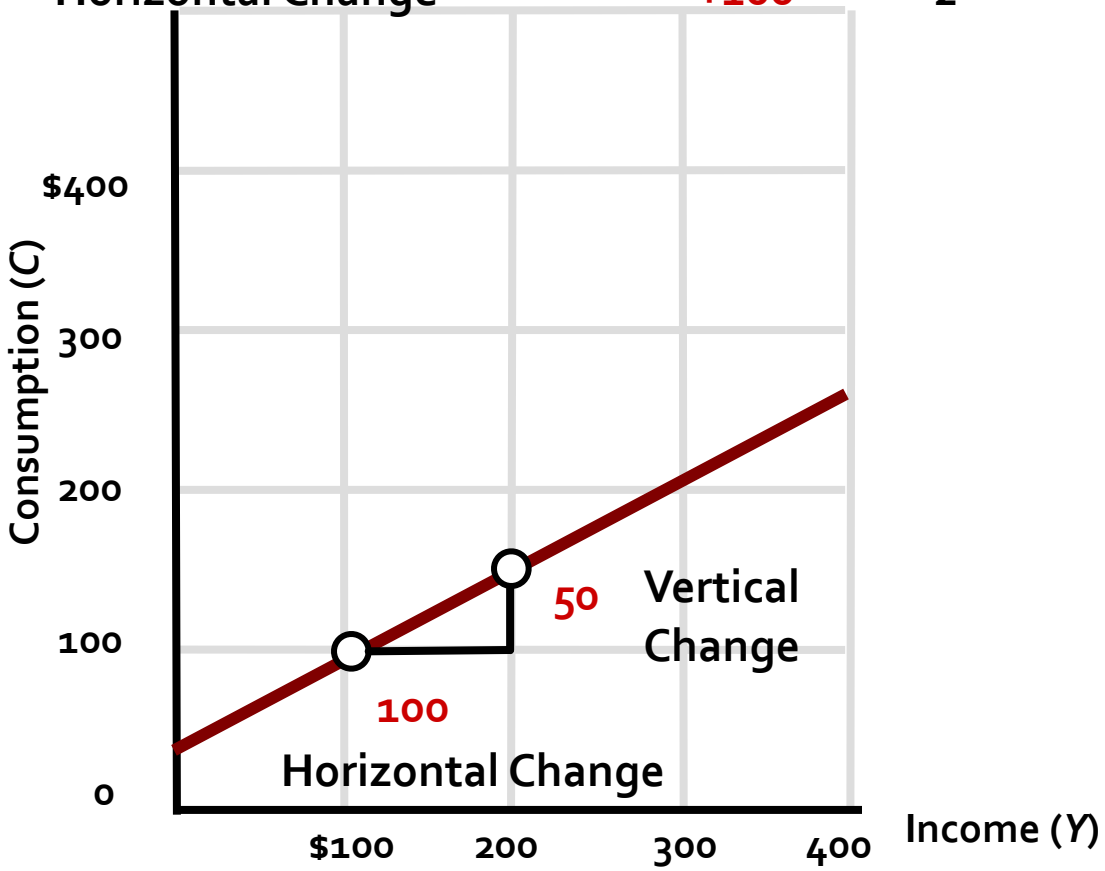
Direct and Inverse Relationships



Inverse Relationship

Figure A1-1
The Relationship between Income and Consumption

$$\text{Slope} = \frac{\text{Vertical Change}}{\text{Horizontal Change}} = \frac{+50}{+100} = \frac{1}{2} = 0.5$$



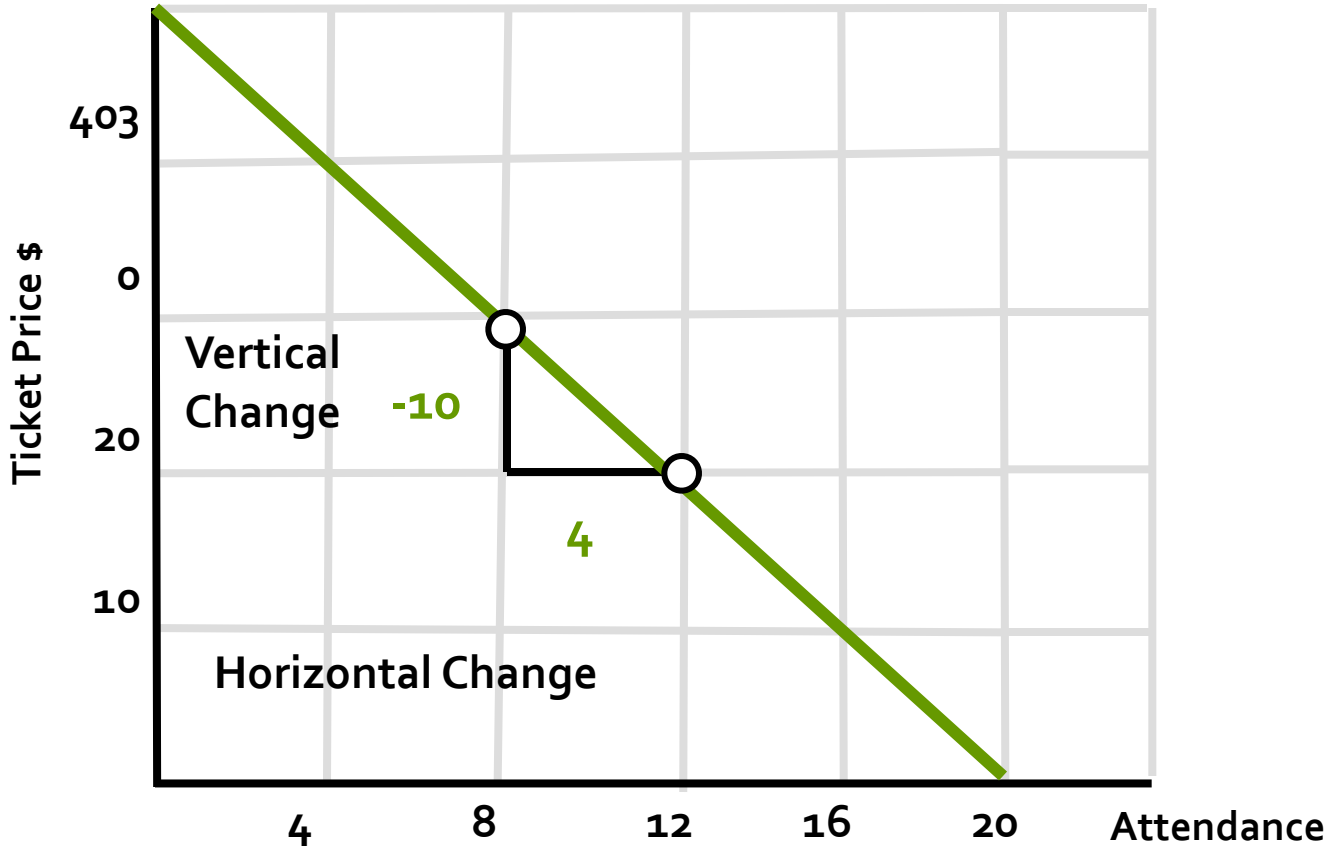
The Relationship between Ticket Prices and Attendance

Ticket Price	Attendance, thousands
$50	0
40	4
30	8
20	12
10	16
0	20

Figure A2-2

The Relationship between Ticket Prices and Attendance

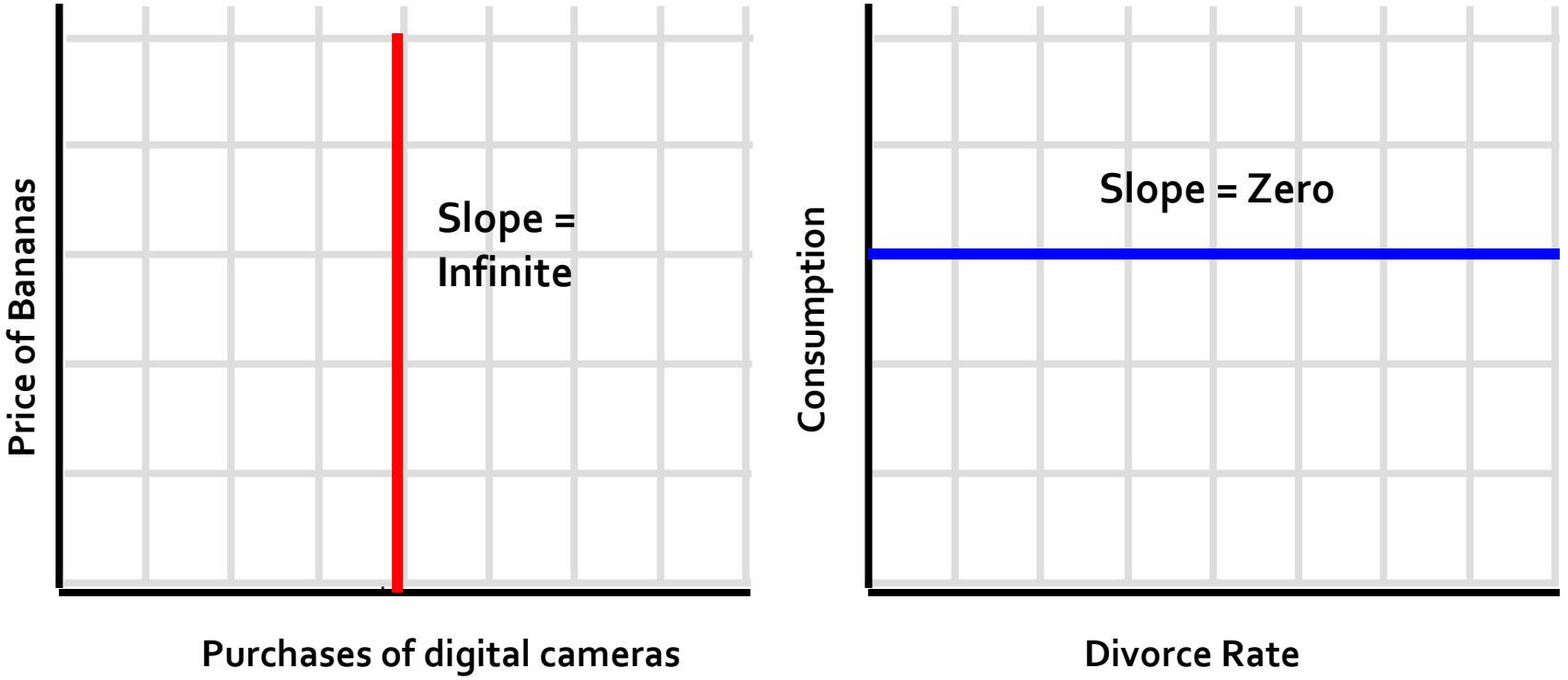
$$\text{Slope} = \frac{\text{Vertical Change}}{\text{Horizontal Change}} = \frac{-10}{+4} = -2\frac{1}{2} = -2.5$$



Slope of a Line

- Slopes and measurement units
- Slopes and marginal analysis
- Infinite and zero slopes

Figure A1-3
Infinite and Zero Slopes

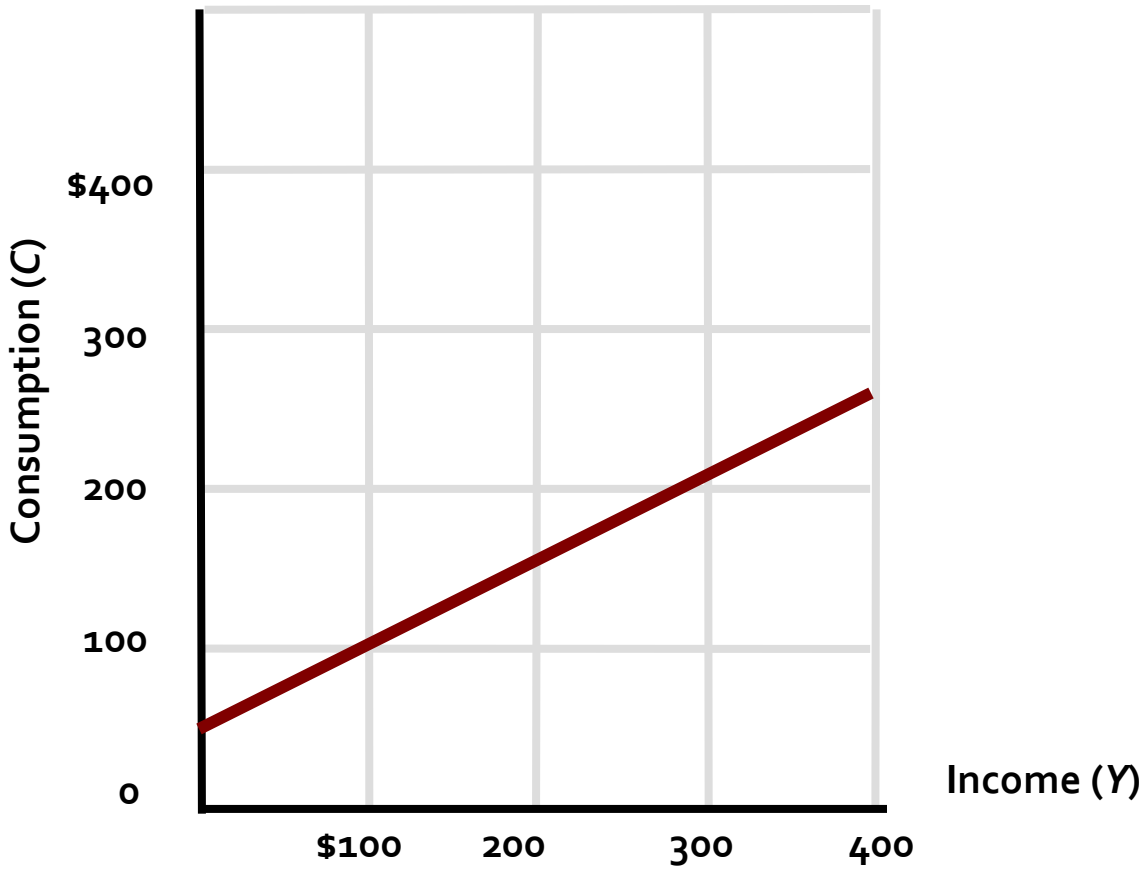


Equation of a Linear Relationship

- $y = a + bx$
  - y is the dependent variable
  - a is the vertical intercept
  - b is the slope of the line
  - x is the independent variable

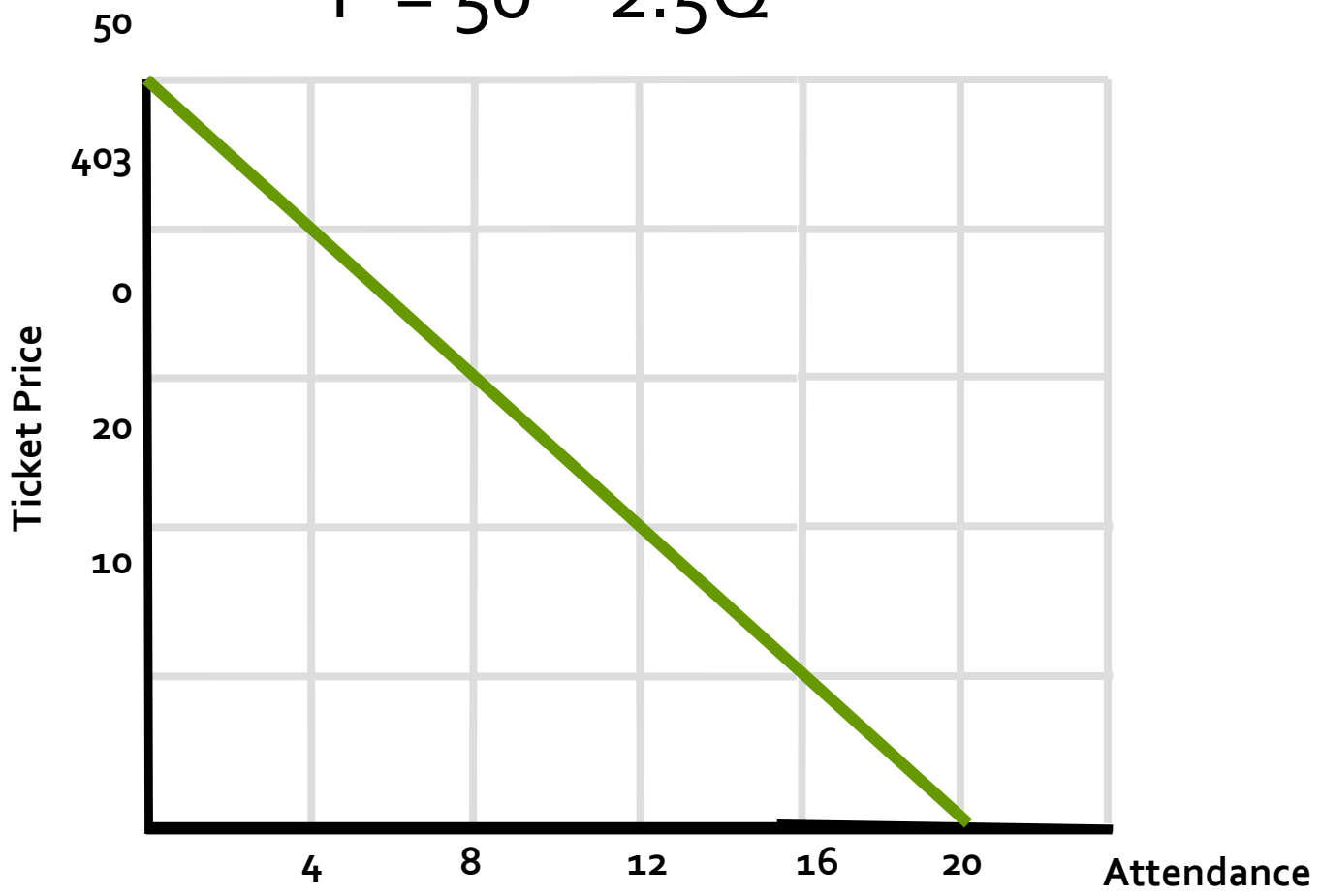
Equation of a Linear Relationship

$$Y = 50 + .5C$$



Equation of a Linear Relationship

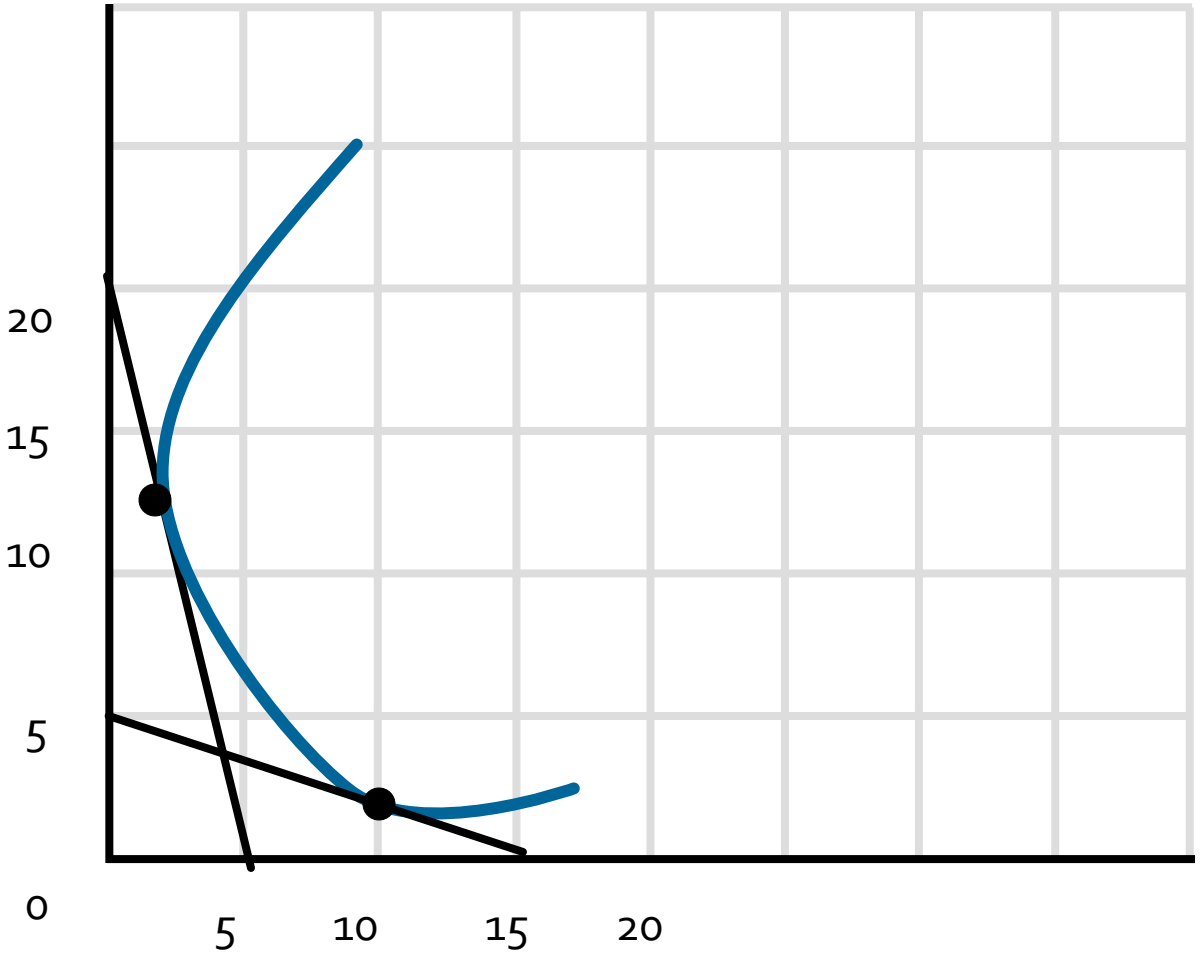
$$P = 50 - 2.5Q$$



Slope of a Nonlinear Curve

- Slope always changes
- Must use a line tangent to the curve to find slope at that point

FIGURE A1-4
Determining the Slopes of Curves



Summary

- Graphs represent economic relationship
- Positive/directly related variables and positive sloped line
- Negative/inversely related variables and negative sloped line
- The slope of a straight line is the ratio of the vertical change to the horizontal change between any two points.
- The slope of a curve at any point is determined by calculating The slope of a straight line tangent to the curve at that point.