

# Principles of Economics

Twelfth Edition (1 of 2)



CASE · FAIR · OSTER

## PART I INTRODUCTION TO ECONOMICS

# Principles of Economics

Twelfth Edition (2 of 2)



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## Chapter 1

### The Scope and Method of Economics

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# Chapter Outline and Learning Objectives

(1 of 2)

## 1.1 Why Study Economics?

- Identify three key reasons to study economics. Think of an example from your life in which understanding opportunity costs or the principle of efficient markets could make a difference in your decision making.

## 1.2 The Scope of Economics

- Describe microeconomics, macroeconomics, and the diverse fields of economics.

# Chapter Outline and Learning Objectives

*(2 of 2)*

## **1.3 The Method of Economics**

- Think about an example of bad causal inference leading to erroneous decision making. Identify the four main goals of economic policy.

## **Appendix: How to Read and Understand Graphs**

- Understand how data can be graphically represented.

# Chapter 1 The Scope and Method of Economics

- **economics** The study of how individuals and societies choose to use the scarce resources that nature and previous generations have provided.
- The key word in the definition is *choose*.
- Economics is a behavioral, or social, science.
- Economics is the study of how people make choices.

# Why Study Economics?

## To Learn a Way of Thinking

- Economics has three fundamental concepts:
  - Opportunity cost
  - Marginalism
  - Efficient markets

# To Learn a Way of Thinking *(1 of 3)*

## Opportunity Cost

- **opportunity cost** The best alternative that we forgo, or give up, when we make a choice or decision.
- **scarce** Limited.



# To Learn a Way of Thinking *(2 of 3)*

## **Marginalism**

- **marginalism** The process of analyzing the additional or incremental costs or benefits arising from a choice or decision.

# To Learn a Way of Thinking *(3 of 3)*

## Efficient Markets—No Free Lunch

- **efficient market** A market in which profit opportunities are eliminated almost instantaneously.
- The study of economics teaches us a way of thinking and helps us make decisions.

# To Understand Society

- **Industrial Revolution** The period in England during the late eighteenth and early nineteenth centuries in which new manufacturing technologies and improved transportation gave rise to the modern factory system and a massive movement of the population from the countryside to the cities.
- The study of economics is an essential part of the study of society.

# To Be an Informed Citizen

- To be an informed citizen requires a basic understanding of economics.

# ECONOMICS IN PRACTICE

## iPod and the World

A sticker that says “Made in China” can often be misleading.

The iPod is composed of many small parts, and it is almost impossible to accurately tell exactly where each piece was produced without pulling it apart.

From an economics point of view, one often has to dig deep to see what is really going on.



### THINKING PRACTICALLY

1. What do you think accounts for where components of the iPod and Barbie are made?

# The Scope of Economics *(1 of 2)*

## Microeconomics and Macroeconomics

- **microeconomics** The branch of economics that examines the functioning of individual industries and the behavior of individual decision-making units—that is, firms and households.
- **macroeconomics** The branch of economics that examines the economic behavior of aggregates—income, employment, output, and so on—on a national scale.

# The Scope of Economics *(2 of 2)*

## **Microeconomics and Macroeconomics**

- Microeconomics looks at the individual unit—the household, the firm, the industry. It sees and examines the “trees.”
- Macroeconomics looks at the whole, the aggregate. It sees and analyzes the “forest.”

**TABLE 1.1 Examples of Microeconomic and Macroeconomic Concerns**

<b>Division of Economics</b>	<b>Production</b>	<b>Prices</b>	<b>Income</b>	<b>Employment</b>
Microeconomics	Production/output in individual industries and businesses How much steel How much office space How many cars	Prices of individual goods and medical care Price of gasoline Food prices Apartment rents	Distribution of income and wealth Wages in the auto industry Minimum wage Executive salaries Poverty	Employment by individual businesses and industries jobs in the steel industry Number of employees in a firm Number of accountants
Macroeconomics	National production/output Total industrial output Gross domestic product Growth of output	Aggregate price level Consumer prices Producer prices Rate of inflation	National income Total wages and salaries Total corporate profits	Employment and unemployment in the economy Total number of jobs Unemployment rate



**TABLE 1.2 The Fields of Economics ( 1 of 3)**

Behavioral economics	Do aggregate household savings increase when we automatically enroll people in savings programs and let them opt out as opposed to requiring them to sign up?
Comparative economic systems	How does the resource allocation process differ in market versus command and control systems?
Econometrics	What inferences can we make based on conditional moment inequalities?
Economic development	Does increasing employment opportunities for girls in developing nations increase their educational achievements?
Economic history	How did the growth of railroads and improvement in transportation more generally change the U.S. banking systems in the nineteenth century?

**TABLE 1.2 The Fields of Economics (*cont'd 2 of 3*)**

Environmental economics	What effect would a tax on carbon have on emissions? Is a tax better or worse than rules?
Finance	Is high frequency trading socially beneficial?
Health economics	Do co-pays by patients change the choice and use of medicines by insured patients?
The history of economic thought	How did Aristotle think about just prices?
Industrial organization	How do we explain price wars in the airline industry

**TABLE 1.2 The Fields of Economics (*cont'd 3 of 3*)**

International economics	What are the benefits and costs of free trade? Does concern about the environment change our views of free trade?
Labor economics	Will increasing the minimum wage decrease employment opportunities?
Law and economics	Does the current U.S. patent law increase or decrease the rate of innovation?
Public economics	Why is corruption more widespread in some countries than in others?
Urban and regional economics	Do enterprise zones improve employment opportunities in central cities?

# The Method of Economics

- Economics deals with two kinds of questions: positive and normative.
- **positive economics** An approach to economics that seeks to understand behavior and the operation of systems without making judgments. It describes what exists and how it works.
- **normative economics** An approach to economics that analyzes outcomes of economic behavior, evaluates them as good or bad, and may prescribe courses of action. Also called *policy economics*.

# Theories and Models *(1 of 5)*

- **model** A formal statement of a theory, usually a mathematical statement of a presumed relationship between two or more variables.
- **variable** A measure that can change from time to time or from observation to observation.
- **Ockham's razor** The principle that irrelevant detail should be cut away.

# Theories and Models (2 of 5)

## All Else Equal

- ***ceteris paribus*, or all else equal** A device used to analyze the relationship between two variables while the values of other variables are held unchanged.
- Using the device of *ceteris paribus* is one part of the process of abstraction.
- In formulating economic theory, the concept helps us simplify reality to focus on the relationships that interest us.

# Theories and Models *(3 of 5)*

## **Expressing Models in Words, Graphs, and Equations**

- Graphs and equations capture the quantitative side of economic observations and predictions.

# Theories and Models (4 of 5)

## Cautions and Pitfalls

- Economists are interested in cause and effect, but sorting out causality from correlation is not always easy.
- ***post hoc, ergo propter hoc*** Literally, “after this (in time), therefore because of this.” A common error made in thinking about causation: If Event A happens before Event B, it is not necessarily true that A caused B.



# Theories and Models *(5 of 5)*

## Testing Theories and Models: Empirical Economics

- **empirical economics** The collection and use of data to test economic theories.

# ECONOMICS IN PRACTICE

## Does Your Roommate Matter for Your Grades?

Several studies of the effect of roommates on college grades help to sort out causality in peer effects.

One study looked at randomly assigned freshman roommates in one college to test the peer effects from different types of roommates.

The author found strong roommate effects on grade point average, effort in school, and fraternity membership.



### THINKING PRACTICALLY

1. Would you expect college seniors who choose their own roommates to have more or less similar grades than college freshmen who are assigned as roommates? Why or why not?

# Economic Policy *( 1 of 3 )*

- Four criteria are important in judging economic outcomes:
  1. Efficiency
  2. Equity
  3. Growth
  4. Stability

# Economic Policy *(2 of 3)*

## Efficiency

- **efficiency** In economics, allocative efficiency. An efficient economy is one that produces what people want at the least possible cost.

## Equity

- **equity** Fairness.

# Economic Policy *( 3 of 3 )*

## Growth

- **economic growth** An increase in the total output of an economy.

## Stability

- **stability** A condition in which national output is growing steadily, with low inflation and full employment of resources.

# An Invitation

- You cannot begin to understand how a society functions without knowing something about its economic history and its economic system.
- Learning to think in this very powerful way will help you better understand the world.
- This book proceeds step-by-step, each section building on the last.
- Make sure you understand where it all fits in the big picture.

# REVIEW TERMS AND CONCEPTS

- *ceteris paribus*, or all else equal
- economic growth
- economics
- efficiency
- efficient market
- empirical economics
- equity
- Industrial Revolution
- macroeconomics
- Marginalism
- microeconomics
- model
- normative economics
- Ockham's razor
- opportunity cost
- positive economics
- post hoc, ergo propter hoc
- scarce
- stability
- variable

# CHAPTER 1 APPENDIX:

## How to Read and Understand Graphs

- **graph** A two-dimensional representation of a set of numbers or data.

### Time Series Graphs

- **time series graph** A graph illustrating how a variable changes over time.

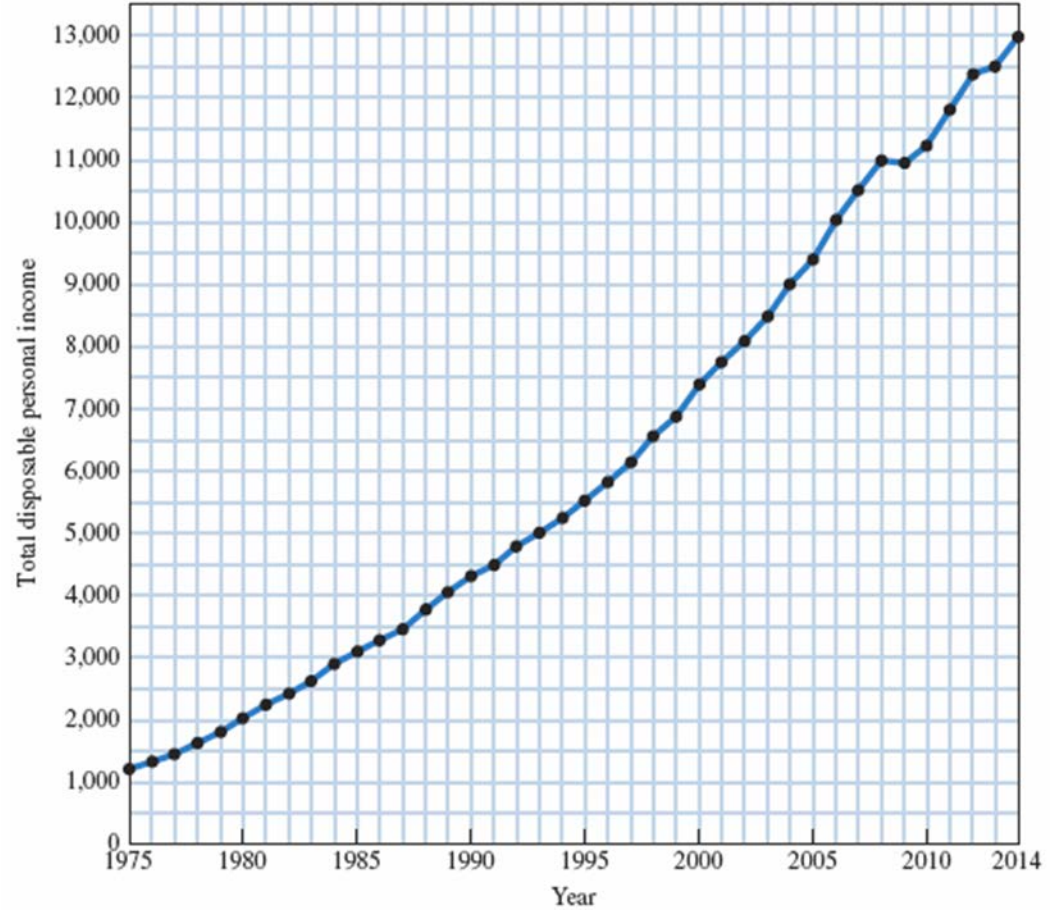


**TABLE 1A.1 Total Disposable Personal Income in the United States, 1975–2014 (in Billions of Dollars)**

Year	Total Disposable Personal Income	Year	Total Disposable Personal Income
1975	1,219	1995	5,533
1976	1,326	1996	5,830
1977	1,457	1997	6,149
1978	1,630	1998	6,561
1979	1,809	1999	6,876
1980	2,018	2000	7,401
1981	2,251	2001	7,752
1982	2,425	2002	8,099
1983	2,617	2003	8,466
1984	2,904	2004	9,002
1985	3,099	2005	9,401
1986	3,288	2006	10,037
1987	3,466	2007	10,507
1988	3,770	2008	10,994
1989	4,052	2009	10,943
1990	4,312	2010	11,238
1991	4,485	2011	11,801
1992	4,800	2012	12,384
1993	5,000	2013	12,508
1994	5,244	2014	12,981

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

**FIGURE 1A.1 Total Disposable Personal Income in the United States: 1975–2014 (in Billions of Dollars)**



Source: See Table 1A.1.

# Graphing Two Variables

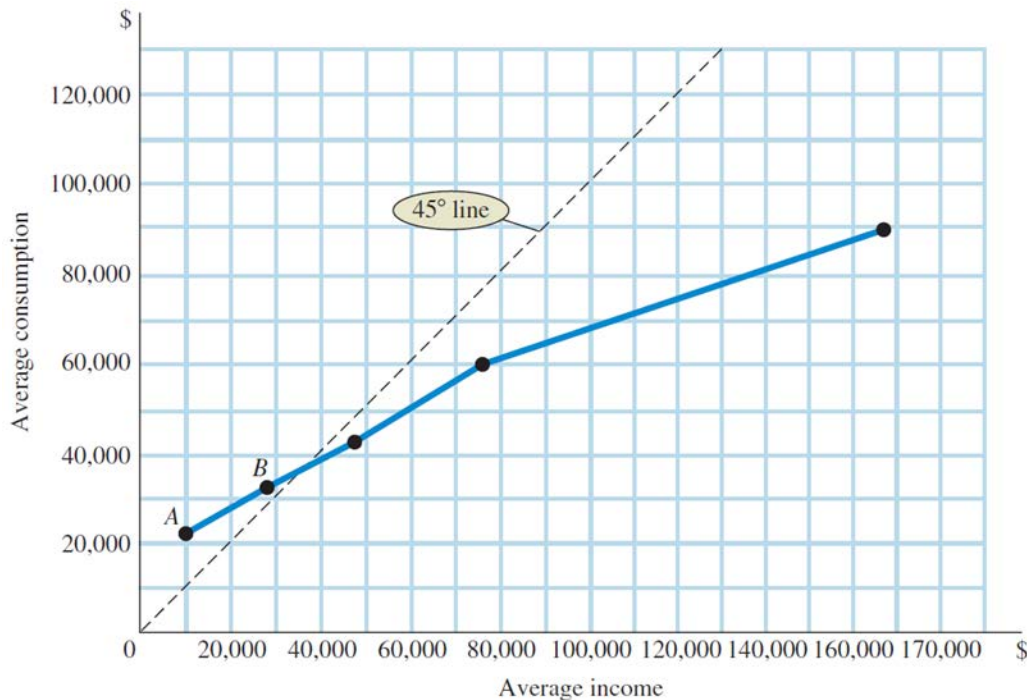
- **X-axis** The horizontal line against which a variable is plotted.
- **Y-axis** The vertical line against which a variable is plotted.
- **origin** The point at which the horizontal and vertical axes intersect.
- **Y-intercept** The point at which a graph intersects the Y-axis.
- **X-intercept** The point at which a graph intersects the X-axis.

# Plotting Income and Consumption Data for Households

- positive relationship A relationship between two variables,  $X$  and  $Y$ , in which a decrease in  $X$  is associated with a decrease in  $Y$  and an increase in  $X$  is associated with an increase in  $Y$ .
- negative relationship A relationship between two variables,  $X$  and  $Y$ , in which a decrease in  $X$  is associated with an increase in  $Y$  and an increase in  $X$  is associated with a decrease in  $Y$ .

**Table 1A.2 Consumption Expenditures and Income, 2012**

**FIGURE 1A.2 Household Consumption and Income**



Source: See Table 1A.2.

	Average Income Before Taxes	Average Consumption Expenditures
Bottom fifth	\$ 9,988	\$ 22,154
2 <sup>nd</sup> fifth	27,585	32,632
3 <sup>rd</sup> fifth	47,265	43,004
4 <sup>th</sup> fifth	75,952	59,980
Top fifth	167,010	99,368

Source: *Consumer Expenditures in 2012*, U.S. Bureau of Labor Statistics.

A graph is a simple two-dimensional geometric representation of data. The graph in Figure 1A.2 displays the data from Table 1A.2.

Along the horizontal scale (X-axis), we measure household income. Along the vertical scale (Y-axis), we measure household consumption.

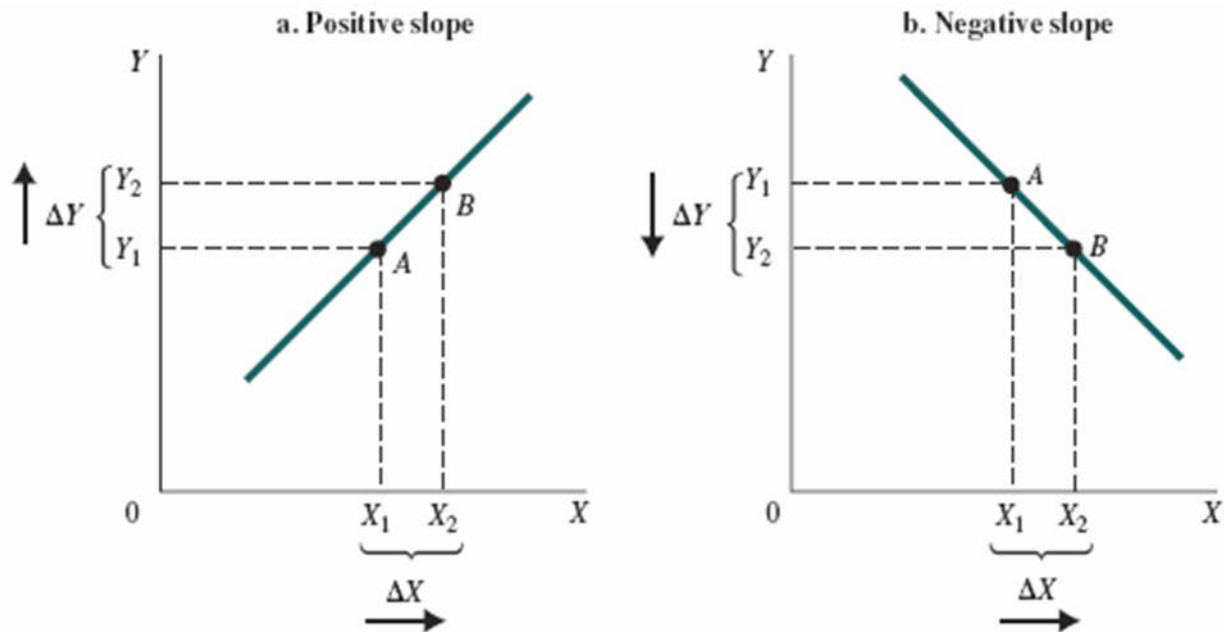
*Note:* At point A, consumption equals \$22,154 and income equals \$9,988. At point B, consumption equals \$32,632 and income equals \$27,585.

# Slope

- **slope** A measurement that indicates whether the relationship between variables is positive or negative and how much of a response there is in Y (the variable on the vertical axis) when X (the variable on the horizontal axis) changes.

$$\frac{\Delta Y}{\Delta X} = \frac{Y_2 - Y_1}{X_2 - X_1}$$

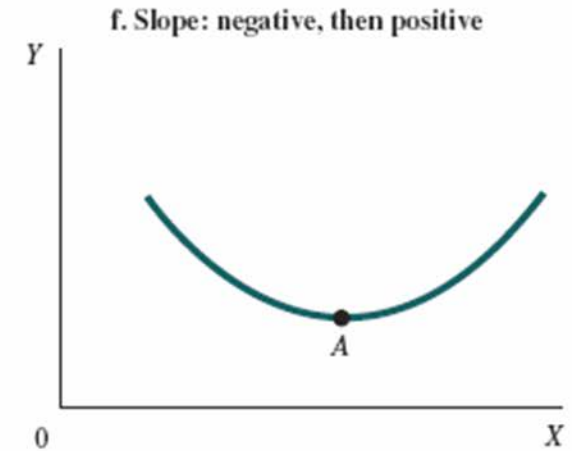
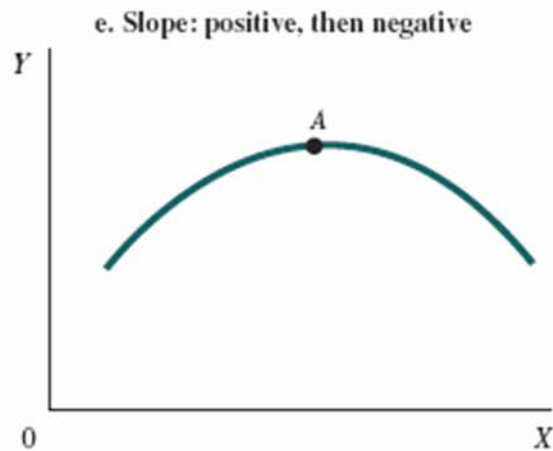
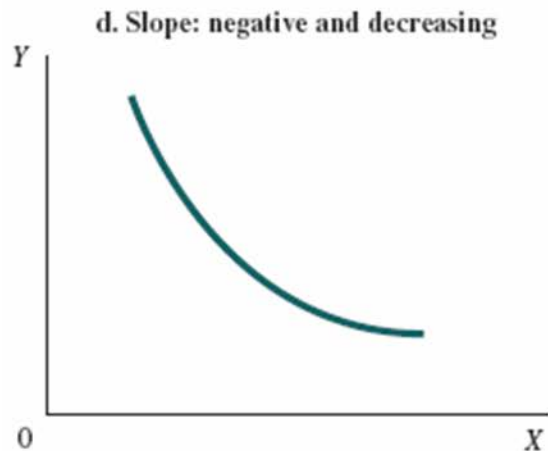
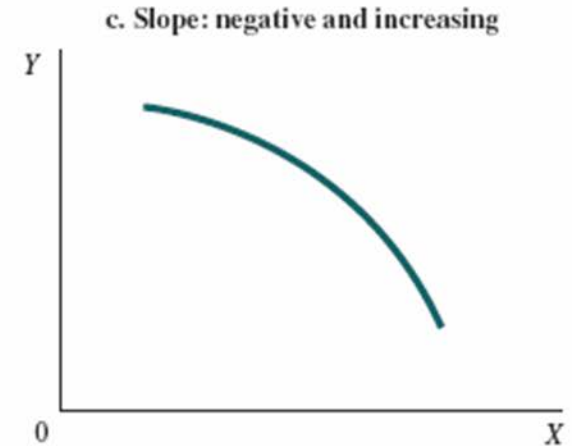
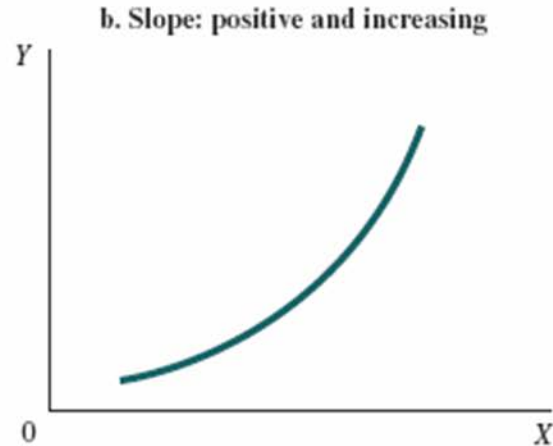
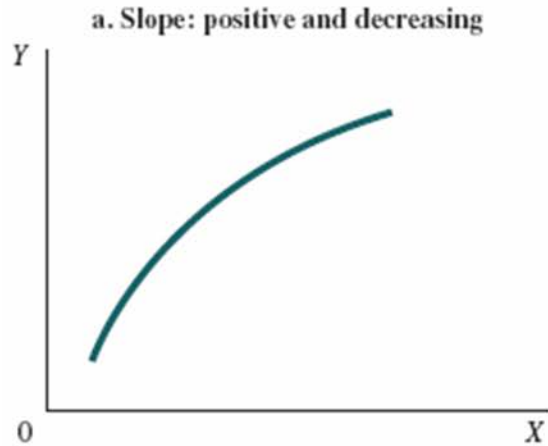
FIGURE 1A.3 A Curve with (a) Positive Slope and (b) Negative Slope



A *positive* slope indicates that increases in  $X$  are associated with increases in  $Y$  and that decreases in  $X$  are associated with decreases in  $Y$ .

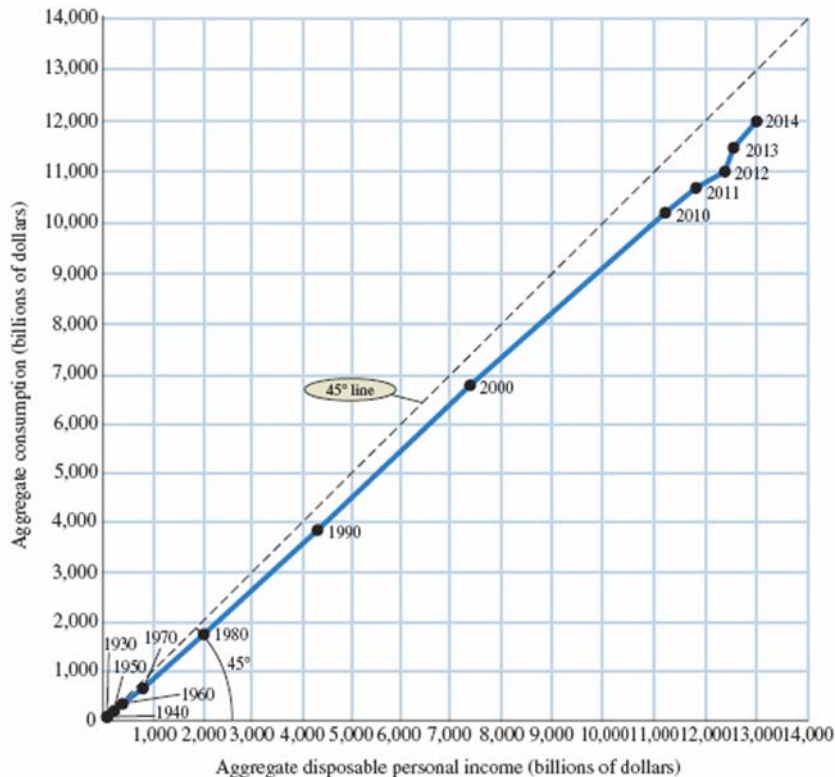
A *negative* slope indicates the opposite—when  $X$  increases,  $Y$  decreases; and when  $X$  decreases,  $Y$  increases.

# FIGURE 1A.4 Changing Slopes along Curves



# Some Precautions

**FIGURE 1A.5 National Income and Consumption**



Source: See Table 1A.3.

**Table 1A.3 Aggregate National Income and Consumption for the United States, 1930–2014 (in Billions of Dollars)**

	Aggregate National Income	Aggregate Consumption
1930	75	70
1940	78	71
1950	215	192
1960	377	332
1970	762	648
1980	2,018	1,755
1990	4,312	3,826
2000	7,401	6,792
2010	11,238	10,202
2011	11,801	10,689
2012	12,384	11,083
2013	12,505	11,484
2014	12,981	11,928

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

It is important to think carefully about what is represented by points in the space defined by the axes of a graph. In Figure 1A.5 we have graphed income with consumption, as in Figure 1A.2, but here each observation point is national income and aggregate consumption in different years, measured in billions of dollars.



# APPENDIX REVIEW TERMS AND CONCEPTS

- graph
- negative relationship
- origin
- positive relationship
- Slope
- time series graph
- X-axis
- X-intercept
- Y-axis
- Y-intercept