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Study Guide to accompany  
**Macroeconomics** 15

WILLIAM B. WALSTAD

ROBERT C. BINGHAM

STUDY GUIDE  
to accompany  
McConnell and Brue  
MACROECONOMICS

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Fifteenth Edition

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**Study Guide to accompany McConnell and Brue Macroeconomics:  
Principles, Problems, and Policies**

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# How to Use the Study Guide to Learn Economics

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This *Study Guide* is designed to help you read and understand Campbell R. McConnell and Stanley L. Brue's textbook, *Macroeconomics*, fifteenth edition. If used properly, a study guide can be a great aid to you for what is probably your first course in economics.

No one pretends that the study of economics is easy, but it can be made easier. Of course, a study guide will not do your work for you, and its use is no substitute for reading the text. You must be willing to read the text, spend time on the subject, and work at learning if you wish to understand economics.

Many students do read their text and work hard on their economics course and still fail to learn the subject. This occurs because principles of economics is a new subject for these students, and they have had no previous experience in learning economics. They want to learn but do not know just how to go about it. Here is where the *Study Guide* can help. Let's first see what the *Study Guide* contains and then how to use it.

## ■ WHAT THE STUDY GUIDE IS

The *Study Guide* contains 22 chapters—one for each chapter in *Macroeconomics*—and a **glossary**. Each *Study Guide* chapter has 11 sections. The first 5 sections identify and explain the basic content and concepts in each chapter.

1. An **introduction** explains what is in the chapter of the text and how it is related to material in earlier and later chapters. It points out topics to which you should give special attention and reemphasizes difficult or important principles and facts.
2. A **checklist** tells you the things you should be able to do when you have finished the chapter.
3. A **chapter outline** shows how the chapter is organized and summarizes briefly the essential points made in the chapter.
4. Selected **hints and tips** for each chapter help you master the material and make connections with any previous discussion of a topic.
5. A list of the **important terms** in the chapter points out what you must be able to define in order to understand the material in the chapter. A definition of each term is in the glossary at the end of the *Study Guide*.

The next 6 sections of the *Study Guide* allow you to **self-test** your understanding of the chapter material.

**6. Fill-in questions** (short-answer and list questions) help you learn and remember the important generalizations and facts in the chapter.

**7. True–false questions** test your understanding of the material in the chapter.

**8. Multiple-choice questions** also give you a chance to check your knowledge of the chapter content and prepare for this type of course examination.

**9. Problems** help you learn and understand economic concepts by requiring different skills—drawing a graph, completing a table, or finding relationships—to solve the problems.

**10. Short answer and essay questions** can be used as a self-test, to identify important questions in the chapter, and to prepare for examinations.

**11. Answers** to fill-in questions, problems and projects, true–false questions, and multiple-choice questions are found at the end of each chapter. References to the specific pages in the textbook for each true–false, multiple-choice, and short answer or essay question are also provided.

## ■ HOW TO STUDY AND LEARN WITH THE HELP OF THE STUDY GUIDE

**1. Read and outline.** For best results, quickly read the introduction, outline, list of terms, and checklist in the *Study Guide* before you read the chapter in *Macroeconomics*. Then read the chapter in the text slowly, keeping one eye on the *Study Guide* outline and the list of terms. Highlight the chapter as you read it by identifying the *major and minor* points and by placing *Study Guide* outline numbers or letters (such as I or A or 1 or a) in the margins. When you have completed the chapter, you will have the chapter highlighted, and the *Study Guide* outline will serve as a handy set of notes on the chapter.

**2. Review and reread.** After you have read the chapter in the text once, return to the introduction, outline, and list of terms in the *Study Guide*. Reread the introduction and outline. Does everything there make sense? If not, go back to the text and reread the topics that you do not

remember well or that still confuse you. Look at the outline. Try to recall each of the minor topics or points that were contained in the text under each of the major points in the outline. When you come to the list of terms, go over them one by one. *Define or explain each to yourself and then look for the definition of the term either in the text chapter or in the glossary.* Compare your own definition or explanation with that in the *text or glossary*. The quick way to find the definition of a term in the text is to look in the text index for the page(s) in which that term or concept is mentioned. Make any necessary correction or change in your own definition or explanation.

**3. Test and check answers.** When you have done all this, you will have a general idea of what is in the text chapter. *Now look at the fill-in questions, true–false questions, multiple-choice questions, and problems.* Tackle each of these four sections one at a time, using the following procedure. (1) Answer as many questions as you can without looking in the text or in the answers section. (2) Check the text for whatever help you need. It is a good idea to do more than merely look for answers in the text. Reread any section for which you were not able to answer questions. (3) Consult the answers section at the end of the chapter for the correct answers and reread any section of the text for which you missed questions. (See the text page references given with the answer to each true–false or multiple-choice question.)

The questions in these four sections are not all equally difficult. Do not expect to get them all right the first time. Some are designed to pinpoint things of importance that you will probably miss the first time you read the text and to get you to read about them again. None of the questions are unimportant. Even those that have no definite answers will bring you to grips with many important economic questions and increase your understanding of economic principles and problems.

The *short answer and essay questions* cover the major points in the chapter. For some of the easier questions, all you may do is mentally outline your answer. For the more difficult questions, you may want to write out a brief outline of the answer or a full answer. Do not avoid the difficult questions just because they are more work. Answering these questions is often the most valuable work you can do toward acquiring an understanding of economic relationships and principles.

Although no answers are given in the *Study Guide* to the short answer and essay questions, the answer section does list text page references for each question. You are *strongly* encouraged to read those text pages for an explanation of the question or for better insight into the question content.

**4. Double check.** Before you turn to the next chapter in the text and *Study Guide*, return to the checklist. If you cannot honestly check off each item in the list, you have not learned what the authors of the text and of this *Study Guide* hoped you would learn.

#### ■ BONUS WEB CHAPTER FOR MACROECONOMICS

After Chapter 22 is a study guide for the bonus web chapter on Transition Economies: Russia and China. This chapter

is available for students at [www.mhhe.com/economics/mcconnell15](http://www.mhhe.com/economics/mcconnell15).

#### ■ ANSWERS TO KEY QUESTIONS IN MACROECONOMICS

In addition to the self-test in the *Study Guide*, there are end-of-chapter questions in *Macroeconomics* that you can answer to double check your understanding. Some of these questions are similar to the questions in the *Study Guide*, but none are identical. It is highly recommended that you try to answer the **key questions** at the end of each chapter in *Macroeconomics*. You can then check your work against the Answers sections in the *Study Guide*. These we located in a section at the end of the guide.

#### ■ SOME FINAL WORDS

Perhaps the method of using the *Study Guide* outlined above seems like a lot of work. It is! Study and learning necessarily entail work on your part. This is a fact you must accept if you are to learn economics.

After you have used the *Study Guide* to study three or four chapters, you will find that some sections are more valuable to you than others. Let your own experience determine how you will use it. But do not discontinue use of the *Study Guide* after three or four chapters merely because you are not sure whether it is helping you. **Stick with it.**

#### ■ ACKNOWLEDGMENTS

The late Professor Robert Bingham prepared the first 10 editions of the *Study Guide*. He worked with great care and wanted the *Study Guide* to be a valuable aid for students. Many past users of the *Study Guide* will attest to his success. Although Professor Bingham did not participate directly in this revision, his work remains a major contribution to this edition.

I also want to acknowledge the help I received from many others. Campbell McConnell and Stanley Brue offered many insightful comments on the *Study Guide* over the years and encouraged my work. I received valuable suggestions over the years from Loretta Fairchild, Joyce Gleason, Richard Harmstone, Ralph Lewis, Peter Kerr, Dave Rosenbaum, Mary Stevenson, and Joshua Stull. Ken Rebeck helped me proof and check the self-test questions. Casey Snyder identified text page numbers for answers. Students in my principles of economics classes at the University of Nebraska–Lincoln continue to give me feedback that has helped improve the *Study Guide* with each edition. Sharon Nemeth was of invaluable assistance in helping proof the manuscript. Finally, the team at McGraw-Hill, especially Lucille Sutton and Erin Strathmann, provided good editorial and production support. Despite the many contributions from others, all responsibility for any errors or omissions are mine. I encourage *Study Guide* users to send me comments or suggestions at any time.

William B. Walstad

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# The Nature and Method of Economics

Chapter 1 introduces you to economics—the study of how people decide how to use scarce productive resources to satisfy material wants. The purpose of this chapter is to explain the nature of the subject and to describe the methods that economists use to study economic questions.

The first section of the chapter describes the three key features of the **economic perspective**. This perspective first recognizes that all choices involve costs and that these costs must be involved in an economic decision. The economic perspective also incorporates the view that to achieve a goal, people make decisions that reflect their rational self-interest. The third feature considers that people compare marginal benefits against marginal costs when making decisions and will choose the situation where the marginal benefit is greater than the marginal cost. You will develop a better understanding of these features and the meaning of the economic perspective as you read about the economic issues in this book.

As you begin your study of economics, you might be wondering if the work you will do to learn the chapter material is worthwhile. It most certainly is. Knowledge of economics is important because it is essential for well-informed citizenship and has many practical applications to professional and personal decisions.

Economists use two different approaches in investigating economic topics—**theoretical economics** and **policy economics**. Theoretical economics is the gathering of facts, interpretation of them, and the use of them to draw generalizations. Policy economics is the formulation of recommended actions (policies) to be taken to address specific economic problems.

A central part of this discussion focuses on theories and principles in the economic methodology section. Economics relies heavily on the scientific method to develop theories and principles to explain the likely effects from different actions. In essence, these theories and principles (and related terms such as hypotheses, laws, and models) are generalizations. They are imprecise and subject to exceptions because economists cannot conduct controlled laboratory experiments to test the validity of the generalizations. Economics is a science, but not an exact science. Economic theories and principles are simplifications—approximations of a complex world—for analyzing problems in **microeconomics** and **macroeconomics** and for finding solutions to these problems.

The choice of an economic policy depends on economic principles and on the value judgments and weights given to economic goals. Here we move from **economic**

**theory** and **positive economics**, which investigates what is, to **normative economics**, which incorporates subjective or value-laden views of what ought to be. Many of the apparent disagreements among economists are over normative policy issues and involve deciding which economic goals for our economy are most important in making the case for a policy solution.

Clear thinking about economic questions requires that beginning students avoid many pitfalls. Errors of commission and omission can occur from bias, loaded terminology, imprecise definitions, fallacies of composition, and causation fallacies. Awareness of these pitfalls will help you think more objectively about the economic issues you will read about throughout this book.

## ■ CHECKLIST

When you have studied this chapter you should be able to

- Write a formal definition of economics.
- Describe the three key features of an economic perspective.
- Give examples of the application of an economic perspective.
- Give two good reasons for studying economics.
- Identify the elements of the scientific method.
- Describe theoretical economics.
- Distinguish among hypotheses, theories, principles, laws, and models.
- Explain what an economic principle is and how economic principles are obtained.
- Discuss how economic principles are generalizations and abstractions.
- Explain what the “other things equal” (*ceteris paribus*) assumption is and why this assumption is employed in economics.
- Define policy economics.
- List three steps in economic policymaking.
- Identify eight economic goals widely accepted in the United States and many other nations.
- Discuss the conflicting or complementary nature of economic goals.
- Distinguish between macroeconomics and microeconomics.
- Give examples of positive and normative economics.
- Identify the five pitfalls to objective thinking when given examples.

## ■ CHAPTER OUTLINE

1. Economics is concerned with the efficient use of limited productive resources to achieve the maximum satisfaction of economic wants.

2. The **economic perspective** has three interrelated features.

- a. It recognizes that scarcity requires choice and all choices entail a cost.
- b. It views people as rational decision makers who make choices based on their self-interest.
- c. It uses marginal analysis to assess how the marginal costs of a decision compare with the marginal benefits.

3. Citizens in a democracy must understand elementary economics to comprehend the present-day problems of their society and to make intelligent decisions when they vote. Economics is an academic rather than a vocational subject, but a knowledge of it is valuable to business executives, consumers, and workers.

4. Economic methodology relies on the scientific method and includes both theoretical economics and policy economics.

**a. Theoretical economics** is the gathering and analysis of relevant facts to derive economic principles.

(1) Hypotheses are propositions that are tested and used to develop economic theories. Highly reliable theories are called principles or laws. Theories, principles, and laws are meaningful statements about economic behavior or the economy that can be used to predict the likely outcome from an economic action or event. Models are created when several economic principles are used to explain or describe reality.

(2) Each principle or theory is a generalization that shows a tendency or average effect.

(3) The “other-things-equal” (*ceteris paribus*) assumption is used to limit the influence of other factors when making a generalization.

(4) Economic principles and theories are abstractions from reality.

(5) Many economic principles or models can be illustrated graphically.

**b. Policy economics** is the use of economic principles to develop a course of action to solve economic problems.

(1) The three steps in creating economic policy are stating the goal, considering the options, and evaluating the results.

(2) Eight major economic goals are considered important in the United States and many other nations: economic growth, full employment, economic efficiency, price-level stability, economic freedom, economic security, an equitable distribution of income, and a balance of trade. Economic goals can be complementary, or they can conflict and require tradeoffs. The interpretation of economic goals and the setting of priorities can be difficult and cause problems in economic policymaking.

5. Economic analysis is conducted at two levels, and might be positive or normative.

**a. Macroeconomics** looks at the entire economy or its major aggregates or sectors, such as households, businesses, or government.

**b. Microeconomics** studies the economic behavior of individuals, particular markets, firms, or industries.

**c. Positive economics** focuses on facts and is concerned with what is, or the scientific analysis of economic behavior.

**d. Normative economics** suggests what ought to be and answers policy questions based on value judgments. Most disagreements among economists involve normative economics.

6. Objective thinking in the study and use of economic principles requires strict application of the rules of logic, in which personal emotions are irrelevant, if not detrimental. The pitfalls beginning students encounter when studying and applying economic principles include the following:

**a.** Bias of preconceived beliefs not warranted by facts.

**b.** Loaded terminology or the use of terms in a way that appeals to emotion and leads to a nonobjective analysis of the issues.

**c.** The definition of terms by economists in ways that may not be the same as the ways in which these terms are more commonly used.

**d.** The fallacy of composition or the assumption that what is true of the part is necessarily true of the whole.

**e.** Two causation fallacies confuse cause and effect.  
(1) The “after this, therefore because of this fallacy” (*post hoc, ergo propter hoc*) is the mistaken belief that when one event precedes another, the first event is the cause of the second.

(2) The other fallacy is to confuse correlation with causation. Two factors may be related, but that does not mean that one factor caused the other.

## ■ HINTS AND TIPS

1. The economic perspective presented in the first section of the chapter has three features related to decision making: scarcity and the necessity of choice, rational self-interest in decision making, and marginal analysis of the costs and benefits of decisions. Although these features may seem strange to you at first, they are central to the economic thinking used to examine decisions and problems throughout the book.

2. The chapter introduces important pairs of terms: theoretical economics and policy economics; microeconomics and macroeconomics; and positive economics and normative economics. Make sure you understand what each pair means.

3. Objective thinking about economic problems is difficult and requires that you be able to recognize the major pitfalls—loaded terminology, inaccurate definitions, fallacy of composition, *post hoc* fallacy, and confusing correlation with causation. One way to remember these pitfalls is to associate each one with a practical example.

■ IMPORTANT TERMS

Note: See Glossary in the back of the book for definitions of terms.

economics	marginal analysis
economic perspective	macroeconomics
scientific method	aggregate
theoretical economics	microeconomics
principles	positive economics
generalizations	normative economics
"other-things-equal" assumption ( <i>ceteris paribus</i> )	fallacy of composition
policy economics	"after this, therefore because of this"
tradeoffs	fallacy ( <i>post hoc, ergo propter hoc</i> )

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SELF-TEST

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■ FILL-IN QUESTIONS

1. Economics is the study of the efficient use of (unlimited, limited) \_\_\_\_\_ resources to achieve (minimum, maximum) \_\_\_\_\_ satisfaction of economic wants.

2. The economic perspective recognizes that (resources, scarcity) \_\_\_\_\_ requires choice and that choice has an opportunity (benefit, cost) \_\_\_\_\_. "There is no such thing as a free lunch" in economics because scarce resources have (unlimited, alternative) \_\_\_\_\_ uses.

3. The economic perspective also assumes that people make choices based on their self-interest and that they are (irrational, rational) \_\_\_\_\_. It also is based on comparisons of the (extreme, marginal) \_\_\_\_\_ costs and benefits of an economic decision.

4. An understanding of economics is essential if we are to be well-informed (citizens, technicians) \_\_\_\_\_, and such an understanding has many personal and professional applications even though it is (a vocational, an academic) \_\_\_\_\_ and not \_\_\_\_\_ subject.

5. Economics relies on the (model, scientific) \_\_\_\_\_ method. It involves the gathering of (facts, theories) \_\_\_\_\_, and the formulation of (data, hypotheses) \_\_\_\_\_. These are then tested to develop (facts, theories) \_\_\_\_\_.

6. The systematic arranging of facts, the interpretation of them, and the drawing of conclusions based on them is called (policy, theoretical) \_\_\_\_\_ economics.

7. Statements about economic behavior that enable the prediction of the likely effects of certain actions are economic (facts, theories) \_\_\_\_\_. The most reliable of these, those with strong predictive accuracy, are called (hypotheses, principles) \_\_\_\_\_.

Sometimes they are also called (policies, laws) \_\_\_\_\_. Simplified representations of how markets or the economy works based on combinations of economic principles are called (policies, models) \_\_\_\_\_.

8. Economic principles are often imprecise quantitative statements or (fallacies, generalizations) \_\_\_\_\_ about people's economic behavior, and they necessarily involve (abstractions, distractions) \_\_\_\_\_ from reality to simplify complex situations.

9. When economists assume that other factors are held constant and do not change when studying an economic relationship, they are using the (*post hoc*, other-things-equal) \_\_\_\_\_ assumption.

10. The formulation of recommended solutions or remedies for economic problems is referred to as (theoretical, policy) \_\_\_\_\_ economics.

11. The three steps in the formulation of economic policy are (1) stating the economic (theory, goal) \_\_\_\_\_, (2) determining the policy (results, options) \_\_\_\_\_, and (3) implementing and evaluating policy (assumptions, effectiveness) \_\_\_\_\_.

12. Eight widely accepted economic goals in the United States and many nations are

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_
- g. \_\_\_\_\_
- h. \_\_\_\_\_

13. Increases in economic growth that promote full employment would be an example of a set of (conflicting, complementary) \_\_\_\_\_ economic goals. Efforts to achieve an equitable distribution of income that at the same time reduce economic efficiency would be an example of a set of (conflicting, complementary) \_\_\_\_\_ economic goals, indicating that there are (tradeoffs, laws) \_\_\_\_\_ among economic goals.

14. The study of the total output of the economy or the general level of prices is the subject of (microeconomics, macroeconomics) \_\_\_\_\_, whereas the study of output in a particular industry or of a particular product is the subject of \_\_\_\_\_.

15. The collection of specific units that are being added and treated as if they were one unit is an (assumption, aggregate) \_\_\_\_\_.

16. Two different types of statements can be made about economic topics. A (positive, normative) \_\_\_\_\_ statement explains what is, by offering a scientific proposition about economic behavior that is based on economic theory and facts, but a \_\_\_\_\_ statement includes a value judgment about an economic policy or the economy that suggests what ought to be. Many of the reported disagreements among economists usually involve (positive, normative) \_\_\_\_\_ statements.

17. Holding a preconceived notion, such as thinking that corporate profits are always excessive, is an example of (an aggregate, a bias) \_\_\_\_\_ pitfall in economic thinking.

18. Pitfalls to economic thinking can also occur because terminology is (theoretical, loaded) \_\_\_\_\_ and definitions used by the public are based on (common, scientific) \_\_\_\_\_ usage.

19. The statement that "What is good for the individual is also good for the group" may not be correct because of the fallacy of (complexity, composition) \_\_\_\_\_.

20. The person who believes that "washing a car will cause it to rain tomorrow" is expressing an ("other-things-equal", "after this, therefore because of this") \_\_\_\_\_ fallacy.

#### ■ TRUE-FALSE QUESTIONS

Circle T if the statement is true, F if it is false.

- Economics is the social science concerned with the efficient use of scarce resources to achieve the maximum satisfaction of economic wants. T F
- From an economic perspective, "there is no such thing as a free lunch." T F
- Rational self-interest is the same thing as being selfish. T F
- The economic perspective views individuals or institutions as making rational choices based on the marginal analysis of the costs and benefits of decisions. T F
- Economics is academic and of little value because it does not teach the student how to earn a living. T F

6. The scientific method involves the observation of real-world data, the formulation of hypotheses based on the data, and the testing of those hypotheses to develop theories. T F

7. Systematically arranging facts, interpreting them, and using them to derive economic principles is called economic analysis. T F

8. Economic principles enable us to predict the economic consequences of many human actions. T F

9. The most reliable economic theories are often called economic principles or laws. T F

10. An economic model is simply an adding up of economic facts about an economic event. T F

11. The "other-things-equal" or *ceteris paribus* assumption is made to simplify the reasoning process. T F

12. Economic principles, or theories, are abstractions. T F

13. The first step in the formulation of an economic policy, the statement of goals, may be occasion for disagreement because different people may have different and conflicting goals to be achieved. T F

14. Determining the policy options requires a detailed assessment of the benefits, costs, and political feasibility of alternative policies. T F

15. One of the widely (although not universally) accepted economic goals of people in the United States is an equitable distribution of income. T F

16. A tradeoff is a situation in which some of one economic goal is sacrificed to obtain some of another economic goal. T F

17. Macroeconomic analysis is concerned with the economic activity of specific firms or industries. T F

18. Microeconomic analysis is concerned with the performance of the economy as a whole or its major aggregates. T F

19. The statement that "the legal minimum wage should be raised to give working people a decent income" is an example of a normative statement. T F

20. When value judgments are made about the economy or economic policy, this is called positive economics. T F

21. The belief that lending money is always superior to borrowing money is an example of a bias in objective thinking about economic issues. T F

22. The fallacy of composition would be calling profits "excessive" or an unemployed worker "lazy." T F

23. If you speak of "capital" to most people, they understand that you are referring to money. The economist, therefore, is obligated to use the term "capital" to mean money. T F

24. The *post hoc, ergo propter hoc* fallacy is the belief that "what is true for the individual or part of a group is necessarily true for the group or whole." T F

25. A person who concludes that more education increases income may be confusing correlation with causation.

T F

### ■ MULTIPLE-CHOICE QUESTIONS

Circle the letter that corresponds to the best answer.

- What statement would best complete a short definition of economics? "Economics is the study of
  - how businesses produce goods and services"
  - the efficient use of scarce productive resources"
  - the equitable distribution of society's income and wealth"
  - the printing and circulation of money throughout the economy"
- The idea in economics that "there is no such thing as a free lunch" means that
  - the marginal benefit of such a lunch is greater than its marginal cost
  - businesses cannot increase their market share by offering free lunches
  - scarce resources have alternative uses or opportunity costs
  - consumers are irrational when they ask for a free lunch
- A major feature of the economic perspective is
  - equating rational self-interest with selfishness
  - comparing marginal benefits with marginal costs
  - the validity of normative economics for decision making
  - the recognition of the abundance of economic resources
- From an economic perspective, when a business decides to employ more workers, the business decision maker has most likely concluded that the marginal
  - costs of employing more workers have decreased
  - benefits of employing more workers have increased
  - benefits of employing more workers are greater than the marginal costs
  - costs of employing more workers are not opportunity costs for the business because more workers are needed to increase production
- Economic analysis that derives economic principles about how individuals behave or institutions act is called
  - policy economics
  - macroeconomics
  - normative economics
  - theoretical economics
- The combination of economic theories or principles into a simplified representation of reality is referred to as an economic
  - fact
  - law
  - model
  - hypothesis
- From the perspective of economists, which of the following would offer the highest degree of confidence for explaining economic behavior:
  - an assumption
  - a speculation
  - a correlation
  - a principle
- When economists state that "consumer spending rises when personal income increases," this is an example of
  - a generalization
  - loaded terminology
  - a normative statement
  - a fallacy of composition
- Another term for the assumption that "other things equal" is
  - ceteris paribus*
  - the correlation fallacy
  - the fallacy of composition
  - post hoc, ergo propter hoc*
- An economic principle states that the lower the price of a product, the greater the quantity consumers will wish to purchase. This principle is based on the critical assumption that
  - the whole is not greater than the sum of the parts
  - economic goals are complementary and not conflicting
  - economic analysis is normative
  - there are no other important changes affecting the demand for the product
- The three basic steps in economic policymaking are
  - gather facts, make abstractions, show findings
  - state the goal, determine the options, evaluate results
  - create the theory, analyze assumptions, derive conclusions
  - form hypotheses, simplify the model, assume other things are equal
- The production of more goods and services and the development of a higher standard of living would be associated with what economic goal?
  - economic security
  - economic freedom
  - economic growth
  - full employment
- Which economic goal is associated with the idea that we want to get the maximum benefit at the minimum cost from the limited productive resources available?
  - economic security
  - economic freedom
  - economic growth
  - economic efficiency
- Which economic goal would be most abstract and difficult to measure?
  - full employment
  - economic efficiency
  - economic freedom
  - price-level stability

15. To say that two economic goals are conflicting means  
 (a) it is impossible to quantify both goals  
 (b) there is a tradeoff in the achievement of the two goals  
 (c) the two goals are not fully accepted as important economic goals  
 (d) the attainment of one goal also results in the attainment of the other goal
16. If economic growth tends to produce a more equitable distribution of income among people in a nation, this relationship between the two economic goals appears to be  
 (a) deductive  
 (b) conflicting  
 (c) complementary  
 (d) mutually exclusive
17. When we look at the whole economy or its major aggregates, our analysis would be at the level of  
 (a) microeconomics  
 (b) macroeconomics  
 (c) positive economics  
 (d) normative economics
18. Which would be studied in microeconomics?  
 (a) the output of the entire economy  
 (b) the total number of workers employed in the United States  
 (c) the general level of prices in the U.S. economy  
 (d) the output and price of wheat in the United States
19. Which is a normative economic statement?  
 (a) The consumer price index rose 5.6% last month.  
 (b) The unemployment rate of 6.8% is too high.  
 (c) The average rate of interest on loans is 8.6%.  
 (d) The economy grew at an annual rate of 2.6%.
20. Sandra states that "there is a high correlation between consumption and income." Arthur replies that the correlation occurs because "people consume too much of their income and don't save enough."  
 (a) Both Sandra's and Arthur's statements are positive.  
 (b) Both Sandra's and Arthur's statements are normative.  
 (c) Sandra's statement is positive and Arthur's statement is normative.  
 (d) Sandra's statement is normative and Arthur's statement is positive.
21. What pitfall to objective thinking is reflected in a person's view that corporate profits are always excessive?  
 (a) bias  
 (b) definition  
 (c) the fallacy of composition  
 (d) confusing correlation and causation
22. During World War II, the United States used price controls to prevent inflation; some people said this was "a fascist and arbitrary restriction of economic freedom," while others said it was "a necessary and democratic means of preventing ruinous inflation." Both labels are examples of  
 (a) economic bias  
 (b) the fallacy of composition  
 (c) the misuse of commonsense definitions  
 (d) loaded terminology
23. If a farmer grows a larger crop one year, he or she will likely receive more income. Therefore, to reason that if all farmers grew larger crops one year they will likely receive more income is an example of  
 (a) the after this, therefore because of this fallacy  
 (b) the fallacy of composition  
 (c) economic bias  
 (d) using loaded terminology
24. The government increases its expenditures for road construction equipment, and later the average price of this equipment falls. The belief that the lowered price was the result of the increase in government expenditures is an example of:  
 (a) the after this, therefore because of this fallacy  
 (b) the fallacy of composition  
 (c) imprecise definition  
 (d) using loaded terminology
25. You observe that more education is associated with more income and conclude that more income leads to more education. This would be an example of  
 (a) the fallacy of composition  
 (b) confusing correlation and causation  
 (c) using the other-things-equal assumption  
 (d) the after this, therefore because of this fallacy

#### ■ PROBLEMS

1. Use the appropriate number to match the terms with the phrase.

- |                                 |                               |
|---------------------------------|-------------------------------|
| 1. <b>economics</b>             | 5. <b>microeconomics</b>      |
| 2. <b>theoretical economics</b> | 6. <b>positive economics</b>  |
| 3. <b>policy economics</b>      | 7. <b>normative economics</b> |
| 4. <b>macroeconomics</b>        | 8. <b>marginal analysis</b>   |

a. The formulation of courses of action to bring about desired economic outcomes or to prevent undesired occurrences. \_\_\_\_\_

b. The attempt to establish scientific statements about economic behavior; a concern with "what is" rather than "what ought to be." \_\_\_\_\_

c. Part of economics that involves value judgments about what the economy should be like or the way the economic world should be. \_\_\_\_\_

d. Social science concerned with the efficient use of scarce resources to achieve maximum satisfaction of human material wants. \_\_\_\_\_

e. Part of economics concerned with the whole economy or its major sectors. \_\_\_\_\_

f. The comparison of additional benefits and additional costs. \_\_\_\_\_

g. Deriving economic principles from relevant economic facts. \_\_\_\_\_

h. Part of economics concerned with the economic behavior of individual units such as households, firms, and industries (particular markets). \_\_\_\_\_

2. **News report:** "The worldwide demand for wheat from the United States increased and caused the price of wheat in the United States to rise." This is a *specific* instance of a more *general* economic principle. Of which economic *generalization* is this a particular example? \_\_\_\_\_

3. Following are four statements. Each is an example of one of the pitfalls frequently encountered in the study of economics. Indicate in the space following each statement the type of pitfall involved.

a. "Investment in stocks and bonds is the only way to build real capital assets." \_\_\_\_\_

b. "An unemployed worker can find a job if the worker looks diligently and conscientiously for employment; therefore, all unemployed workers can find employment if they are diligent and conscientious in looking for a job." \_\_\_\_\_

c. **McConnell:** "Regulation of public utilities in the United States is an immoral and unconscionable interference with the divine right of private property and, as you know, there is no private property in the socialist nations." **Brue:** "It is far from that. You know perfectly well that it is an attempt to limit the unmitigated avarice of mammoth corporations in order, as the Constitution commands, to promote the general welfare of a democratic America." \_\_\_\_\_

d. "The stock market crash of 1929 was followed by and resulted in 10 years of depression." \_\_\_\_\_

4. Following is a list of economic statements. Indicate in the space to the right of each statement whether it is positive (P) or normative (N). Then, in the last four lines below, write two of your own examples of positive economic statements and two examples of normative economic statements.

a. New York City should control the rental price of apartments. \_\_\_\_\_

b. Consumer prices rose at an annual rate of 5% last year. \_\_\_\_\_

c. Most people who are unemployed are just too lazy to work. \_\_\_\_\_

d. Generally, if you lower the price of a product, people will buy more of that product. \_\_\_\_\_

e. The profits of drug companies are too large and ought to be used to conduct research on new medicines. \_\_\_\_\_

f. Government should do more to help the poor. \_\_\_\_\_

g. \_\_\_\_\_ P

h. \_\_\_\_\_ P

i. \_\_\_\_\_ N

j. \_\_\_\_\_ N

■ SHORT ANSWER AND ESSAY QUESTIONS

1. Define economics in both a less and a more sophisticated way. In your latter definition, explain the meaning of "resources" and "wants."

2. What are the three interrelated features of the economic perspective?

3. What is the economic meaning of the statement "there is no such thing as a free lunch"?

4. What is the difference between rational self-interest and selfishness?

5. How do economists use marginal analysis?

6. What are the principal reasons for studying economics?

7. What are the elements of the scientific method?

8. Define and explain the relationships between economic theory and policy economics.

9. What are the differences and similarities between hypotheses, theories, principles, laws, and models?

10. What is a "laboratory experiment under controlled conditions"? Does the science of economics have any kind of laboratory? Why do economists use the "other-things-equal" assumption?

11. Why are economic principles and models necessarily generalized and abstract?

12. What does it mean to say that economic principles can be used for prediction?

13. What procedure should be followed in formulating sound economic policies?

14. Of the eight economic goals listed in the text, which one would you rank first, second, third, and so on? Would you add any other goals to this list? If the goals of full employment and price-level stability were conflicting, which goal would you prefer? Why? If goals of economic growth and an equitable distribution of income were conflicting, which would you prefer? Why?

15. How can the concept "tradeoffs" be applied to the discussion of economic goals? Give an example.

16. Explain the difference between macroeconomics and microeconomics.

17. Why do economists disagree?

18. What are some current examples of positive economic statements and normative economic statements?

19. Explain each of the following terms:

(a) fallacy of composition

(b) loaded terminology

(c) the *post hoc, ergo propter hoc* fallacy

20. Use an example to describe how correlation differs from causation.

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### ANSWERS

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#### Chapter 1 The Nature and Method of Economics

#### FILL-IN QUESTIONS

1. limited, maximum
2. scarcity, cost, alternative
3. rational, marginal
4. citizens, an academic, a vocational
5. scientific, facts, hypotheses, theories
6. theoretical
7. theories, principles, laws, models
8. generalizations, abstractions
9. other-things-equal (or *ceteris paribus*)
10. policy
11. goal, options, effectiveness
12. a. economic growth; b. full employment; c. economic efficiency; d. price stability; e. economic freedom; f. equitable distribution of income; g. economic security; h. balance of trade (*any order for a-h*)
13. complementary, conflicting, tradeoffs
14. macroeconomics, microeconomics
15. aggregate
16. positive, normative, normative
17. bias
18. loaded, common
19. composition
20. "after this, therefore because of this"

#### TRUE-FALSE QUESTIONS

- |               |                |                 |              |
|---------------|----------------|-----------------|--------------|
| 1. T, p. 3    | 8. T, pp. 6-7  | 15. T, p. 9     | 22. F, p. 11 |
| 2. T, p. 3    | 9. T, p. 6     | 16. T, p. 9     | 23. F, p. 11 |
| 3. F, p. 4    | 10. F, p. 6    | 17. F, pp. 9-10 | 24. F, p. 11 |
| 4. T, p. 4    | 11. T, pp. 7-8 | 18. F, p. 10    | 25. T, p. 12 |
| 5. F, pp. 5-6 | 12. T, p. 8    | 19. T, p. 10    |              |
| 6. T, p. 6    | 13. T, pp. 8-9 | 20. F, p. 10    |              |
| 7. F, p. 6    | 14. T, p. 8    | 21. T, p. 11    |              |

#### MULTIPLE-CHOICE QUESTIONS

- |            |                |                  |              |
|------------|----------------|------------------|--------------|
| 1. b, p. 3 | 8. a, p. 7     | 15. b, p. 9      | 22. d, p. 11 |
| 2. c, p. 4 | 9. a, pp. 7-8  | 16. c, p. 9      | 23. b, p. 11 |
| 3. b, p. 4 | 10. d, pp. 7-8 | 17. b, p. 9      | 24. a, p. 11 |
| 4. c, p. 4 | 11. b, pp. 8-9 | 18. d, p. 10     | 25. b, p. 12 |
| 5. d, p. 6 | 12. c, p. 9    | 19. b, p. 10     |              |
| 6. c, p. 7 | 13. d, p. 9    | 20. c, p. 10     |              |
| 7. d, p. 7 | 14. c, p. 9    | 21. a, pp. 10-11 |              |

#### PROBLEMS

1. a. 3; b. 6; c. 7; d. 1; e. 4; f. 8; g. 2; h. 5
2. An increase in the demand for an economic good will cause the price of that good to rise.
3. a. definitions; b. the fallacy of composition; c. loaded terminology; d. the after this, therefore because of this fallacy
4. a. N; b. P; c. N; d. P; e. N; f. N

#### SHORT ANSWER AND ESSAY QUESTIONS

- |            |             |             |               |
|------------|-------------|-------------|---------------|
| 1. p. 3    | 6. pp. 5-6  | 11. pp. 7-8 | 16. pp. 9-10  |
| 2. pp. 3-4 | 7. p. 6     | 12. pp. 7-8 | 17. p. 10     |
| 3. pp. 3-4 | 8. pp. 6-9  | 13. pp. 8-9 | 18. p. 10     |
| 4. p. 4    | 9. pp. 6-8  | 14. p. 9    | 19. p. 11     |
| 5. p. 4    | 10. pp. 7-8 | 15. p. 9    | 20. pp. 11-12 |

# Graphs and Their Meaning

This appendix introduces graphing in economics. Graphs help illustrate and simplify the economic theories and models presented throughout this book. The old saying that “a picture is worth 1000 words” applies to economics; graphs are the way that economists “picture” relationships between economic variables.

You must master the basics of graphing if these “pictures” are to be of any help to you. This appendix explains how to achieve that mastery. It shows you how to construct a graph from a table with data of two variables, such as income and consumption.

Economists usually, but not always, place the **independent variable** (income) on the horizontal axis and the **dependent variable** (consumption) on the vertical axis of the graph. Once the data points are plotted and a line drawn to connect the plotted points, you can determine whether there is a **direct** or an **inverse relationship** between the variables. Identifying direct and inverse relationships between variables is an essential skill used repeatedly in this book.

Information from data in graphs and tables can be written in an equation. This work involves determining the **slope** and **intercept** from a straight line in a graph or data in a table. Using values for the slope and intercept, you can write a **linear equation** that will enable you to calculate what the dependent variable would be for a given level of the independent variable.

Some graphs used in the book are **nonlinear**. With **nonlinear curves**, the slope of the line is no longer constant throughout but varies as one moves along the curve. This slope can be estimated at a point by determining the slope of a straight line that is drawn tangent to the curve at that point. Similar calculations can be made for other points to see how the slope changes along the curve.

## ■ APPENDIX CHECKLIST

After you have studied this appendix you should be able to

- Explain why economists use graphs.
- Construct a graph of two variables using the numerical data from a table.
- Make a table with two variables from data on a graph.
- Distinguish between a direct and an inverse relationship when given data on two variables.
- Identify dependent and independent variables in economic examples and graphs.
- Describe how economists use the other-things-equal (*ceteris paribus*) assumption in graphing two variables.

- Calculate the slope of a straight line between two points when given the tabular data, and indicate whether the slope is positive or negative.
- Describe how slopes are affected by the choice of the units of measurement for either variable.
- Explain how slopes are related to marginal analysis.
- Graph infinite or zero slopes and explain their meaning.
- Determine the vertical intercept for a straight line in a graph with two variables.
- Write a linear equation using the slope of a line and the vertical intercept; when given a value for the independent variable, determine a value for the dependent variable.
- Estimate the slope of a nonlinear curve at a point using a line that is tangent to the curve at that point.

## ■ APPENDIX OUTLINE

1. Graphs illustrate the relationship between variables and give economists and students another way, in addition to verbal explanation, of understanding economic phenomena. Graphs are aids in describing economic theories and models.
2. The construction of a simple graph involves plotting the numerical data of two variables from a table.
  - a. Each graph has a **horizontal axis** and a **vertical axis** that can be labeled for each variable and then scaled for the range of the data point that will be measured on the axis.
  - b. Data points are plotted on the graph by drawing perpendiculars from the scaled points on the two axes to the place on the graph where the perpendiculars intersect.
  - c. A line or curve can then be drawn to connect the points plotted on the graph. If the graph is a straight line, it is **linear**.
3. A graph provides information about relationships between variables.
  - a. An upward-sloping line to the right on a graph indicates that there is a positive or **direct relationship** between two variables: an increase in one is associated with an increase in the other; a decrease in one is associated with a decrease in the other.
  - b. A downward-sloping line to the right means that there is a negative or **inverse relationship** between the two variables: an increase in one is associated with a decrease in the other; a decrease in one is associated with an increase in the other.

4. Economists are often concerned with determining cause and effect in economic events.

a. A **dependent variable** changes (increases or decreases) because of a change in another variable.

b. An **independent variable** produces or “causes” the change in the dependent variable.

c. In a graph, mathematicians place an independent variable on the horizontal axis and a dependent variable on the vertical axis; economists are more arbitrary about which variable is placed on an axis.

5. Economic graphs are simplifications of economic relationships. When graphs are plotted, usually an implicit assumption is made that all other factors are being held constant. This “other-things-equal” or *ceteris paribus* assumption is used to simplify the analysis so the study can focus on the two variables of interest.

6. The **slope** of a straight line in a two-variable graph is the ratio of the vertical change to the horizontal change between two points.

a. A **positive** slope indicates that the relationship between the two variables is *direct*.

b. A **negative** slope indicates that there is an *inverse* relationship between the two variables.

c. Slopes are affected by the *measurement units* for either variable.

d. Slopes measure *marginal* changes.

e. Slopes can be *infinite* (line parallel to vertical axis) or *zero* (line parallel to horizontal axis).

7. The vertical **intercept** of a straight line in a two-variable graph is the point where the line intersects the vertical axis of the graph.

8. The slope and intercept of a straight line can be expressed in the form of a *linear equation*, which is written as  $y = a + bx$ . Once the values for the intercept (**a**) and the slope (**b**) are calculated, then given any value of the independent variable (**x**), the value of the dependent variable (**y**) can be determined.

9. The slope of a straight line is constant, but the slope of a **nonlinear curve** changes throughout. To estimate the slope of a nonlinear curve at a point, the slope of a line tangent to the curve at that point is calculated.

#### ■ HINTS AND TIPS

1. This appendix will help you understand the graphs and problems presented throughout the book. Do not skip reading the appendix or working on the self-test questions and problems in this *Study Guide*. The time you invest now will pay off in improved understanding in later chapters. Graphing is a basic skill for economic analysis.

2. Positive and negative relationships in graphs often confuse students. To overcome this confusion, draw a two-variable graph with a positive slope and another two-variable graph with a negative slope. In each graph, show what happens to the value of one variable when there is a change in the value of the other variable.

3. A straight line in a two-variable graph can be expressed in an equation. Make sure you know how to interpret each part of the linear equation.

#### ■ IMPORTANT TERMS

vertical axes

horizontal axes

direct (positive) relationship

inverse (negative) relationship

dependent variable

independent variable

slope of a straight line

vertical intercept

linear equation

nonlinear curve

tangent

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#### SELF-TEST

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#### ■ FILL-IN QUESTIONS

1. The relationship between two economic variables can be visualized with the aid of a two-dimensional (graph, matrix) \_\_\_\_\_, which has (a horizontal, an inverse) \_\_\_\_\_ axis and a (vertical, direct) \_\_\_\_\_ axis.

2. Customarily, the (dependent, independent) \_\_\_\_\_ variable is placed on the horizontal axis and the \_\_\_\_\_ is placed on the vertical axis. The \_\_\_\_\_ variable is said to change because of a change in the \_\_\_\_\_ variables.

3. The vertical and horizontal (scales, ranges) \_\_\_\_\_ of the graph are calibrated to reflect the \_\_\_\_\_ of values in the table of data points on which the graph is based.

4. The graph of a straight line that slopes downward to the right indicates that there is (a direct, an inverse) \_\_\_\_\_ relationship between the two variables. A graph of a straight line that slopes upward to the right tells us that the relationship is (direct, inverse) \_\_\_\_\_. When the value of one variable increases and the value of the other variable increases, then the relationship is \_\_\_\_\_; when the value of one increases, while the other decreases, the relationship is \_\_\_\_\_.

5. When interpreting an economic graph, the “cause” or the “source” is the (dependent, independent) \_\_\_\_\_ variable and the “effect” or “outcome” is the \_\_\_\_\_ variable.

6. Other variables, beyond the two in a two-dimensional graph, that might affect the economic relationship are assumed to be (changing, held constant) \_\_\_\_\_. This assumption is also referred to as the “other-things-equal” assumption or as (*post hoc*, *ceteris paribus*) \_\_\_\_\_.