



STUDY GUIDE TO ACCOMPANY

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PRINCIPLES OF  
**MICROECONOMICS**

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WILLIAM S. BROWN

Prepared By DANIEL Y. LEE

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WILLIAM S. BROWN

UNIVERSITY OF ALASKA

PREPARED BY

DANIEL Y. LEE

SHIPPENSBURG UNIVERSITY

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To  
Deborah, Daniel James, Sarah, and Esther

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# How to use this study guide

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This study guide has been prepared to help you learn the material presented in the textbook and test your understanding of the material using various practice questions and problems. When used properly, this study guide will help you to learn economics more effectively. Economics may appear challenging at first, but when you approach it with an inquiring mind, your experience will be both exciting and rewarding. Here is how this study guide can help you.

This study guide is not intended to be a substitute for the textbook; it should be used along with it. Therefore, you should read each chapter of the textbook before using this study guide. When you read a specific chapter, try to get the “big picture” by examining the chapter overview, major headings, and the chapter summary. It is important to see the basic framework of the chapter before you work on the details of the material.

This study guide is organized in the following order so that you may learn the material in each chapter effectively.

## **Chapter Overview**

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This is a very brief introduction to the chapter, providing you with its overall perspective. It tells you what the purpose of the chapter is. It also connects the current chapter with other chapters.

## **Key Concepts**

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This section, along with the following Key Graphs and Equations section, highlights the major concepts presented in the chapter. It is not a comprehensive

summary of the chapter, and shouldn't be considered a substitute for reading the entire chapter. You can use this section to determine your understanding of the major concepts presented.

## **Key Graphs and Equations**

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Most of the major diagrams and equations in the chapter are presented here, giving you additional insights and examples. Again, along with the Key Concepts section, this section is designed to help you clearly understand the major issues raised in the chapter.

After reading and digesting the material in the chapter, you can check your learning by testing yourself with the following types of questions.

## **Completion Questions**

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First, try these fill-in questions. If you have difficulty in answering some of the questions, you may not be clear on the meaning of the key words, concepts and facts in the chapter. Go back to the textbook and review the terms.

## **True/False Questions**

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The true/false questions can help you test your understanding of relatively simple concepts and facts presented in the chapter. Answers to some true/false questions include explanations.

## **Multiple Choice Questions**

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These questions can further help you test your knowledge of the material presented in the chapter. At the same time, they will assist you in preparing for this type of question in your course examinations.

## **Essay and Problems**

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There are at least ten essay/problem-type questions in each chapter. They can be used to reinforce your understanding of major concepts and to test your problem-solving skills. Using your knowledge of the material, graphs, and equations, prepare a brief outline of the answer in your mind. Only then should you put the complete answer down on paper.

You may not be able to answer all these questions and problems correctly the first time. Some of them are more difficult than others. You should go back to the textbook and reread the relevant section as often as necessary. You should also discuss some difficult problems with your classmates or your instructor.

## **Beyond Basics**

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Each chapter contains a few challenging problems, some of which deal with issues not directly discussed in the textbook. At least one of the problems is related to economic issues that appeared recently in a newspaper or a magazine. These problems are designed to help you see how the economic theory you learn in this class can be applied to the real-world situations. You should attempt to answer these problems only after you have thoroughly learned the material in the chapter. It may be necessary for you to employ your logical mind or imagination to answer these questions.

Finally, a word on the importance of critical thinking in economics. Merely memorizing the material is not the most effective way to learn economics; neither is it the easiest way. A better way is to learn to think with economic principles. You must, therefore, clearly understand each economic concept and principle. There is no doubt that studying economics requires hard work on your part, but the resulting sound study skills will not go without reward.

# Contents

## Part I—Introduction

Chapter 1:	What is Economics? .....	1
Chapter 2:	Cost, Choice, and a Review of Graphical Analysis.....	11
Chapter 3:	Supply, Demand, and the Role of Markets .....	25
Chapter 4:	Applications of Supply and Demand: Ceilings, Floors, Taxes, Externalities, and Elasticity .....	43
Appendix 4A:	The Algebra of Supply and Demand.....	59
Chapter 5:	The Institutional Framework I: The Private Sector.....	65
Chapter 6:	The Institutional Framework II: The Public Sector .....	77

## Part II—Microeconomics I: Consumer Behavior and the Production Process

Chapter 7:	The Theory of Consumer Behavior.....	87
Appendix 7A:	Indifference Curve Analysis .....	101
Chapter 8:	Elasticity.....	111
Chapter 9:	The Production Process .....	123
Appendix 9A:	Isoquant-Isocost Analysis.....	135
Chapter 10:	The Costs of Production .....	143

## Part III—Microeconomics II: Industrial Structure and Factor Markets

Chapter 11:	Pure Competition: The Competitive Ideal .....	155
Chapter 12:	Monopoly .....	167
Chapter 13:	Intermediate Competition: Monopolistic Competition and Oligopoly.....	179
Chapter 14:	The New Industrial Economics: Contestable Markets and Game Theory .....	191
Chapter 15:	Factor, Pricing, and Income Distribution: Marginal Productivity Theory.....	203
Chapter 16:	Labor Markets Under Imperfect Competition.....	217
Chapter 17:	The Markets For Capital and Natural Resources .....	231

## **Part IV–Microeconomic Policies**

Chapter 18:	Markets and Government .....	243
Chapter 19:	Regulation and Antitrust.....	257
Chapter 20:	Poverty and Income Inequality .....	271
Chapter 21:	Economics and the Environment .....	285

## **Part V–The International Economy**

Chapter 22:	Evolving Economic Systems .....	299
Chapter 23:	International Trade: Comparative Advantage and the Gains from Trade .....	311
Chapter 24:	International Finance: The Balance of Payments and Exchange Rates.....	325
Chapter 25:	Policy in the Open Economy.....	341

# CHAPTER 1

## What is Economics?

### Chapter Overview

---

This chapter introduces economics and the economic way of thinking. It is intended to introduce fundamental economic terminology and to lay the foundation for the rest of the text. Several of the concepts here will be discussed in detail later in the book. After reading this chapter you should feel comfortable with basic economic terms, and understand what economics is and why the study of economics is important.

### Key Concepts

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#### Scarcity

Scarcity is the problem which underlies the study of economics. People with unlimited wants have limited resources at their disposal. As a result, they must constantly make choices in order to try and satisfy their needs. These choices involve *tradeoffs*. In order to satisfy one need, another must go unsatisfied. *Opportunity cost* is a phrase used by economists to refer to the cost of a choice. It is measured as the highest valued alternative sacrificed in order for the choice to be made. One definition of *economics* is that it is the study of how scarce resources are allocated to alternative ends.

#### Economic Systems

An economic system is a method by which society answers the *three fundamental questions of economics*: what to produce, how to produce, and for whom to produce. There are four basic economic systems. Economic systems based on *tradition* answer the economic questions by following what has been done in the past. A feudal economy is an example of an economic system based on tradition. In *command* systems, a central authority dictates what will be produced and how, and also distributes the production. *Market* systems coordinate individual decisions with a system of flexible prices to answer the three questions. In reality, there are no countries which exactly fit these definitions. Real economic systems in the U.S., China, and other economies are good examples of *mixed* economies in which elements of each system is combined.

#### Adam Smith

Adam Smith is considered to be the father of modern economics. In *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776), Smith develops the concepts of *specialization of labor* and the invisible hand. Specialization of labor leads to progress in an economy, and it is the invisible hand which guides self-interested individuals in making decisions that will benefit society as a whole. Smith's ideas were further extended into the classical school of economic thought. The main tenet of the classical school is that the economy is best when government does not intervene. Thus, the classicals believe strongly in the policy of *laissez faire*. Karl Marx challenged Smith's ideas in *Das Kapital* (1867), in which he suggests that the market system is unstable and predisposed towards failure.

#### The Neoclassical School and the Keynesian Critique

Until the Great Depression, the *neoclassical school* formed the predominant school of economic thought. The neoclassicals believed in a self-correcting economy which moved quickly towards *general equilibrium*. However, when neoclassical economics failed to explain the severity of the Depression, the critique of neoclassicism offered by *John Maynard Keynes* was adopted. Today, most economists can be classified into primarily two main groups, those who criticize the Keynesian approach and tout the policy of *laissez faire*, and those who follow Keynes' view and believe that government intervention in the economy is a necessity.

## Economic Theory

Economic research is essentially a search for a *theory* to explain and predict economic phenomena. Certain *assumptions*, such as *ceteris paribus*, are necessary to simplify the real world before a theory can be formulated. Theories are expressed in terms of *variables* thought to explain the behavior. The relationship between the variables is stated in a *hypothesis*, which is essentially a simple cause and effect statement. When developing and testing theories, it is important to note the distinction between causation and correlation. Remember the common logic error of *post hoc, ergo propter hoc*; just because two variables occur together in time does not necessarily mean one variable causes the other.

## Testing Economic Theory

Testing theories involves examining them empirically, often by seeing how well they predict actual economic activity. Yet if the assumptions underlying a theory do not hold, the theory will fail to predict accurately. Thus, economists always clearly state what assumptions they are using in their models. Another method of testing economic theory is done by experimental economists who use computerized laboratories to simulate the real world. This is currently the only way economists can even attempt to perform controlled experiments in economics.

## Economic Policy

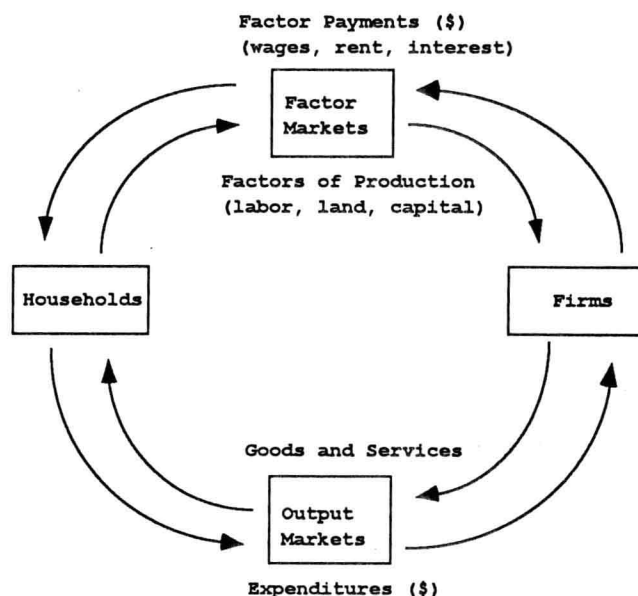
There are three kinds of economic policy which government can use to influence the economy. *Fiscal* policy involves using taxes or government expenditures to affect economic performance. *Monetary* policy, which is conducted by the Federal Reserve, impacts the economy through changes in the money supply. Another type of economic policy is governmental *regulation* of business and consumers. Regulation provides government with another tool to benefit society, although it is often unclear whether the costs of governmental regulation outweigh the benefits.

## Policy Objectives

With such tools at its disposal, the government must decide which goals it wishes to pursue. There are primarily four objectives of economic policy: *efficiency*, *equity*, *growth*, and *stability*. Often these goals conflict. Sometimes a policy which is economically efficient may not be equitable. Policies which lead to economic growth, measured by increasing *GDP*, may lead to inflation and an unstable economy. Because of these conflicting goals, a clear distinction must be made between *positive* economics, which deals with "what actually is," and *normative* economics, which deals with questions of "what should be."

## Key Graphs and Equations

Figure 1: The Circular Flow Diagram



The circular flow diagram shows that the economy is continually moving as economic transactions are made. In the simple circular flow diagram, households and firms are the decision makers, with markets coordinating the transactions. Households sell the *factors of production* (land, labor and capital) to the firms in *factor markets*. Each factor of production receives a *factor payment*: land is rented, labor is paid a wage, and capital earns interest. Firms then use the factors of production to produce

goods and services, which households buy from the firms in *goods markets*. Extensions to the circular flow diagram include adding government, financial institutions, and a foreign sector.

## Completion Questions

---

1. Because resources are \_\_\_\_\_, we must choose between alternatives.
2. A \_\_\_\_\_ is a cause and effect statement.
3. \_\_\_\_\_ policy usually entails changing taxes or government spending to influence the economy.
4. Firms buy resources in \_\_\_\_\_ markets.
5. In a \_\_\_\_\_ economy, the government decides what to produce.
6. Adam Smith is considered to be the father of the \_\_\_\_\_ school of economic thought.
7. \_\_\_\_\_ is a Latin phrase meaning "everything else held constant."
8. The Keynesian critique was a response to the \_\_\_\_\_.
9. The value of the best foregone alternative sacrificed in making a choice is referred to as \_\_\_\_\_.
10. A \_\_\_\_\_ statement is one that tells what should be, not what is.
11. If a policy is \_\_\_\_\_, then a reallocation of resources cannot make someone better off without making someone else worse off.
12. \_\_\_\_\_ are processes where producers and consumers transact business.
13. Payments by government intended to increase various kinds of activities are known as \_\_\_\_\_.
14. The branch of economics which studies individual decisions made by households and firms is known as \_\_\_\_\_.

15. Testing a theory empirically often involves seeing how well the theory can \_\_\_\_\_.

## True/False Questions

---

1. \_\_\_\_\_ Neoclassical economists adhere to the labor theory of value as a means of determining how much an object is worth.
2. \_\_\_\_\_ The fallacy of composition refers to the fact that the whole is not always the sum of its parts.
3. \_\_\_\_\_ If two events are correlated, then one must cause the other.
4. \_\_\_\_\_ An economist who believes in the policy of *laissez faire* does not advocate government intervention.
5. \_\_\_\_\_ The value of a dependent variable determines what the value of an independent variable will be.
6. \_\_\_\_\_ If something is equitable, then it must be efficient.
7. \_\_\_\_\_ A tax hike is an example of fiscal policy by government.
8. \_\_\_\_\_ The statement, "Congress should lower taxes" is an example of a normative economic statement.
9. \_\_\_\_\_ Alfred Marshall is considered to be the father of modern economics.
10. \_\_\_\_\_ The effects of a decline in interest rates are something that a macroeconomist would study.
11. \_\_\_\_\_ Households buy products from firms in factor markets.
12. \_\_\_\_\_ Opportunity cost refers to the actual monetary cost incurred when an action is taken.
13. \_\_\_\_\_ A hypothesis is a theory which has been tested and found to be true.

14. \_\_\_\_\_ Wages, rent, and interest are examples of factor payments.
15. \_\_\_\_\_ Voluntary exchange is one attribute of a market system.

## Multiple Choice Questions

1. Which of the following statements most appropriately describes macroeconomics?
  - a. the study of how prices of individual goods are determined
  - b. the study of how each producer in the economy makes production decisions
  - c. the study of overall economic performance
  - d. the study of how consumers decide whether to purchase goods or not
2. Economic scarcity
  - a. does not occur in an efficient market
  - b. will always exist because wants are unlimited while resources are limited
  - c. will eventually be eliminated in a command economic system
  - d. occurs only when there is high unemployment
3. Adam Smith believed that progress in an economy would eventually result from
  - a. the workings of the invisible hand
  - b. workers being paid a just wage
  - c. specialization of labor
  - d. a return to traditional economic system
4. An economic policy is said to be efficient if
  - a. it is fair to all persons involved
  - b. it stimulates economic growth
  - c. the policy regulates how much pollution firms produce
  - d. a reallocation of resources can make no one better off without making someone worse off
5. Which of the following is not a characteristic of a market system?
  - a. a central planning authority
  - b. flexible prices
  - c. voluntary exchange
  - d. the interaction of producers and consumers to determine how much is produced
6. Opportunity cost is best defined as
  - a. how much money something costs
  - b. the dollar value of all the alternatives that are sacrificed in making a choice
  - c. the highest valued alternative that is sacrificed when making a choice
  - d. the inflation-adjusted cost of a good
7. In a *laissez faire* economy
  - a. the role of government is limited
  - b. income is distributed equally
  - c. the central planning authority dictates what will be produced
  - d. government regulates virtually everything
8. Economics is best described as
  - a. the study of how to fully satisfy our unlimited wants
  - b. the study of how limited resources are used to satisfy our unlimited wants
  - c. the study of consumer decisions
  - d. the study of resources and factor markets
9. Economic theories can be hard to test because
  - a. economic data is difficult to find
  - b. assumptions may not hold in the real world
  - c. most economic events take place in controlled environments
  - d. *post hoc, ergo propter hoc* isn't always true
10. The three fundamental questions of economics are
  - a. what to produce, how to produce, and for whom to produce
  - b. what to produce, how much to produce, and for whom to produce
  - c. what to produce, how much to produce, and how much to charge for it
  - d. none of the above

11. In a command economic system, the question of how much to produce is determined by
  - a. the market
  - b. the interaction of producers and consumers
  - c. tradition
  - d. a central planning agency
12. Which of the following is a problem with a traditional economic system?
  - a. employment is based on heritage
  - b. progress and advancement is difficult
  - c. it gives people an unearned sense of identity
  - d. it is only found in less developed countries
13. *Ceteris paribus* is a common assumption used in economics to
  - a. avoid the fallacy of composition
  - b. distinguish between correlation and causation
  - c. help isolate important variables in a theory which is being studied
  - d. make economic models more applicable to the real world
14. Which of the following is an example of an inverse relationship?
  - a. an increase in hours studied leads to a student scoring higher on the exam
  - b. an increase in the temperature has no effect on ice cream consumption
  - c. a decrease in speed leads to an increase in gas mileage
  - d. a decrease in hours worked leads to a smaller paycheck
15. The paradox of thrift refers to
  - a. the fact that if everyone in the economy saved more, the total amount of saving could actually fall
  - b. the fact that by saving more, an individual's total spending will decrease
  - c. the relationship between actual and predicted levels of saving
  - d. none of the above
16. Which of the following is a positive economic statement?
  - a. government should act to reduce unemployment
  - b. the economy is experiencing inflation, so the Federal Reserve should restrict money supply growth
  - c. the rich should pay higher taxes
  - d. unemployment is increasing
17. Neoclassicals believe in each of the following except
  - a. the economy moves quickly to general equilibrium
  - b. self-correcting forces in the economy prevent recession
  - c. government should intervene regularly in the economy
  - d. *laissez faire*
18. In economics, the term capital is best defined to be
  - a. the money necessary to start up a new business
  - b. the plant, machines, and equipment necessary for production
  - c. both a and b
  - d. none of the above
19. Keynesian economics believes that
  - a. the market has strong self-correcting forces
  - b. the economy is inherently stable
  - c. government intervention is rarely necessary
  - d. the economy cannot necessarily establish full-employment by itself
20. Economists disagree about the role of government in the economy because
  - a. they have differing economic goals
  - b. they have differing beliefs about how the economy functions
  - c. both a and b
  - d. none of the above

## Essays and Problems

---

1. The U.S. is said to have a mixed economic system. What features of the U.S. economy are like those of a market system? Of a

command system? Of a traditional economic system?

2. There is a common saying that the reason economists have two hands is so they can always say, "On the other hand..." when they are predicting economic activity. Explain why this joke applies to economists.
3. Write your own definition of economics. Compare it to the definitions listed in the text. How are the definitions similar? How do they differ? Do they essentially say the same thing?
4. Monetary policy is conducted by the Federal Reserve, not the government. Why is it considered advantageous to have a largely independent body like the Fed control monetary policy?
5. An economist comes up with a theory that new cars undergo less repairs than old cars, *ceteris paribus*, so she trades in her 1981 model for a 1994 model. Within one year, the 1994 has had more repairs than the 1981 had in ten years. Should she throw out her theory?
6. You spend the summers as a lifeguard. You collect the following data on how long it takes you to burn without wearing sunscreen.

Month	May	Jun.	Jul.	Aug.
Min.	37	30	24	26

Formulate a hypothesis about how why you sunburn less easily in May than in August, but more easily in July than in August. What assumptions are you making?

7. One morning, you are the first caller to identify a song in a contest hosted by a local radio station. As a prize, you win two free concert tickets worth \$25 each. Unfortunately, the concert is the same night that you have to work at your \$5/hour job. If you went to the concert, you'd miss at least 4 hours of work. What is your opportunity cost of attending the concert? What is the

opportunity cost of skipping the concert and working instead?

8. What is the tragedy of the commons? List some examples where the tragedy of the commons is occurring. Can you think of any way to prevent this? Should we try to prevent this?
9. List each of the expenses associated with your education. What costs are opportunity costs? Estimate the gain you will receive from a college education over a high school diploma. Can all the costs and benefits be accounted for? Should you attend college? Explain.
10. Adam Smith appeared to sometimes espouse the labor theory of value as a means of determining price and value. Today, the labor theory of value is largely disregarded by traditional economists, but some Marxist economists still advocate the theory. Why might the theory not appeal to a neoclassical economist?

## Beyond Basics

1. The circular flow diagram shown in the text is a simplified version. The author notes that a more complete circular flow diagram would also include government, the foreign sector, and financial institutions. Draw a more complete version of the circular flow model which includes financial institutions. Explain why you drew your diagram as you did.
2. Economists often debate whether the benefits of governmental regulation are worth the cost. In the Pacific Northwest, loggers are worried about losing their jobs if the government decides to further restrict logging in old-growth forests. Proponents of the move to limit environmental regulation believe that strict environmental laws deter economic growth, raise production costs and result in lost jobs. While logging is now being allowed to resume on public lands under the Clinton administration's new plan, there is far less logging than in the

1980s. Federal judge William L. Dwyer says that "this order does not constitute a ruling one way or the other," but allows both environmentalists and the timber industry to challenge the plan and to seek injunctions against it.<sup>1</sup> The logging debate is far from over as both sides continue to argue for the merits of their own plans.

- a. List some of the benefits and costs that are associated with environmental regulation.
  - b. Should environmental conservation be pursued regardless of cost? Why or why not?
3. If you were an economist, how would you decide whether or not the benefits outweigh the costs?

## ANSWERS

### Completion

1. scarce.
2. hypothesis.
3. fiscal.
4. factor.
5. command.
6. classical.
7. *ceteris paribus*.
8. Great Depression.
9. opportunity cost.
10. normative.
11. efficient.
12. markets.
13. subsidies.
14. microeconomics.
15. predict.

### True/False

1. False. Neoclassicals believe markets determine valuation.

2. False. The fallacy of composition is that what is good for the individual may not be good for the group.
3. False. Correlation is a statistical relationship and does not imply any causality.
4. True. *Laissez faire* literally means "leave us alone."
5. False. The value of an independent variable determines what the value of a dependent variable will be.
6. False. Equity and efficiency can be conflicting goals.
7. True. Another example is government expenditures.
8. True. Normative statements deal with what "should" be.
9. False. Adam Smith holds this title.
10. True. Macroeconomists study economy-wide phenomena.
11. False. Households buy from firms in output markets.
12. False. It is the highest valued alternative that is sacrificed.
13. False. A hypothesis is simply a possible cause and effect relationship which has not been tested.
14. True. They are factor payments to labor, land, and capital, respectively.
15. True. Other attributes include price flexibility and profit incentives to innovate and produce.

### Multiple Choice

- |        |        |        |        |        |
|--------|--------|--------|--------|--------|
| 1. C.  | 2. B.  | 3. C.  | 4. D.  | 5. A.  |
| 6. C.  | 7. A.  | 8. B.  | 9. B.  | 10. A. |
| 11. D. | 12. B. | 13. C. | 14. C. | 15. A. |
| 16. D. | 17. C. | 18. B. | 19. D. | 20. C. |

### Essays and Problems

1. It is like a market system in that markets determine prices and wages in the U.S. It is similar to a command system in that government subsidies and special tax treatments have created whole industries that the private sector never would have.

<sup>1</sup>Source: "U.S. judge allows limited logging in public forests of Northwest." *Arizona Daily Star*, June 7, 1994, p. A10.

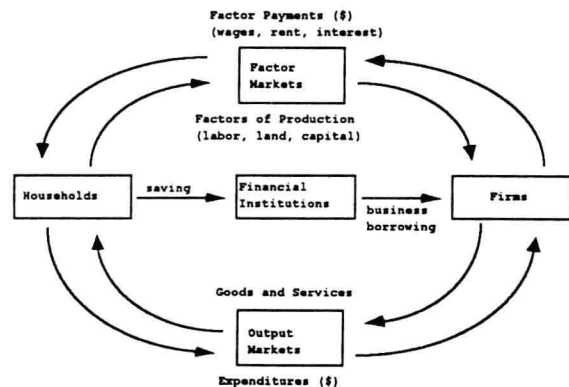
Government also redistributes income among groups. One way in which the U.S. economy is traditional is in the labor market.

2. This is applicable because of the use of assumptions in economics. Predictions may change if the assumptions used in the model change. Thus, "on the other hand" refers to the fact that the outcome may be different if different assumptions are used.
4. Other countries have one national central bank. However, some of the founders of the Federal Reserve feared that such a central bank would be subject to control by Wall Street interests or by the federal government. Since monetary policy is very powerful, it was thought to be important to have the Federal Reserve be as free as possible from political pressures without eliminating the role of government completely. The current system is one of checks and balances between the seven politically appointed Board of Governors (appointed to 14 year terms to ensure that they be free from political influence) and thousands of privately owned member banks.
5. The answer to this question lies in an understanding of what assumptions the economist has made in formulating her theory. She has implicitly assumed that all cars are equal. However, it could be the case that the 1994 model is a cheaper car than the 1981 (perhaps the 1981 is a luxury car, while the 1994 is an economy model). Or the 1994 may be a lemon while the 1981 was the best car of the year. She should not throw out her theory, but she should examine what assumptions she has made.
6. One hypothesis could be that the sun is more intense in July than in May, but by August you have such a great tan that the intensity of the sun is no longer a factor. The assumption here is that the sun becomes more intense as the summer progresses. There are other possibilities as well.

7. If your job is your highest valued alternative, then \$20 is the opportunity cost of attending the concert. If you work and the concert is your highest valued alternative, then \$25 is the opportunity cost of working.
8. The tragedy of the commons refers to the problem which arises when everyone has use of a natural resource and the resource is overused as a result. Part of the reason the government charges fees to enter national parks is to prevent such overuse. Should we prevent this is a normative issue open for debate.
9. In addition to tuition, room and board, and books and fees, you should be sure to list the opportunity cost of your education - the pay you would have received if you had decided to enter the work force instead of college.
10. The labor theory of value does not appeal to neoclassical economists because it removes the role of the market from wage determination.

## Beyond Basics

1. The financial sector is easily added to the circular flow diagram. It channels funds in the form of household saving to business who borrow funds to invest in capital



2.
  - a. Benefits include greater environmental quality, better health due to cleaner air and water. To the extent that this causes greater labor productivity and

more natural resources, it could lead to economic growth. Costs include lower output by firms. To the extent that this lower output affects capital goods, it could lead to slower economic growth.

- b. An economist would answer that the tradeoffs should be analyzed and that environmental regulation should be pursued only to the extent that benefits outweigh costs.
3. List all possible benefits and try to attach a value to each. The difficulty arises in the valuation of the benefits; for example, it is difficult to measure how much cleaner air is worth. List all possible costs, and then compare benefits and costs.

