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Instructor Manual

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Purpose and Perspective of the Chapter

This chapter has two purposes: to introduce students to some of the basic language of economics and to stimulate student interest in the subject. It conveys to students that economics not only is found on financial news websites, but also is very much a part of their everyday lives. Beginning with the economic problem of scarce resources but unlimited wants, this chapter provides an overview of the field and the analytical techniques used. Concepts introduced include *resources, goods and services*, the *economic decision makers* in the economy, and *marginal analysis*. Two models for analysis, the circular flow model and steps of the scientific method, are introduced. The appendix introduces the use of graphs.

Chapter Objectives

The following objectives are addressed in this chapter:

1.1 Explain how scarcity drives economic decision-making for individuals, businesses, and governments.

1.2 Contrast macroeconomic concepts versus microeconomic concepts.

1.3 Explain the importance of the other things constant (*ceteris paribus*) assumption in economic theory and models.

1.4 Distinguish between positive and normative economic analysis.

1.5 Using the circular flow model, illustrate how real-world economic transactions and interactions are represented within the model.

1.6 Identify pitfalls of economic analysis in real-life instances such as the fallacy of association-is-causation, the fallacy of composition, and the mistake of disregarding secondary effects.

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Key Terms

Scarcity: A condition that arises from the conflict between unlimited human wants and the limited resources available to fulfill those wants.

Economics: A social science that studies how individuals, businesses, governments, and societies allocate scarce resources to satisfy unlimited wants and needs.

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Microeconomics: The study of the economic behavior in individual markets, industries, or sectors, such as that for computers or unskilled labor.

Macroeconomics: The study of the economic behavior of entire economies, as measured, for example, by total production and employment.

Economic theory or economic model: A simplification of reality used to make conjectures about cause and effect in the real world.

Scientific method: A systematic approach scientists use to study and understand the world through observation, hypothesis formulation, experimentation, data analysis, and conclusion drawing.

Variable: A measure or a quantity that can take on different values or levels and is used to represent economic concepts or phenomena.

Other-things-constant assumption: The assumption, when focusing on the relation among key economic variables, that other variables remain unchanged; in Latin, *ceteris paribus*.

Behavioral assumptions: An assumption that describes the expected behavior of economic decision makers—what motivates them.

Hypothesis: A theory about how key variables relate.

Positive economic statement: A statement that can be proved or disproved by reference to facts.

Normative economic statement: A statement that reflects an opinion, which cannot be proved or disproved by reference to the facts.

Circular flow model: A diagram that traces the flow of resources, products, income, and revenue among economic decision makers.

Resources: The inputs, or factors of production, used to produce the goods and services that people want; consists of labor, capital, human capital, and material resources.

Labor: The physical and mental effort used to produce goods and services.

Capital: The buildings, equipment, tools, utensils, appliances, and machinery used to produce goods and services.

Human capital: The knowledge, skills, abilities, and other attributes that individuals possess, which can be used to produce goods and services and generate economic value.

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Entrepreneurial ability: The imagination required to develop a new product or process, the skill needed to organize production, and the willingness to take the risk of profit or loss.

Entrepreneur: A profit-seeking decision maker who starts with an idea, organizes an enterprise to bring that idea to life, and assumes the risk of the operation.

Natural resources: All gifts of nature used to produce goods and services; includes renewable and exhaustible resources.

Good: A tangible product used to satisfy human wants.

Service: An activity, or intangible product, used to satisfy human wants.

Wages: Payment to resource owners for their labor.

Interest: Payment to resource owners for the use of their capital.

Rent: Payment to resource owners for the use of their natural resources.

Profit: Reward for entrepreneurial ability; sales revenue minus resource cost.

Market: A set of arrangements by which buyers and sellers carry out exchange at mutually agreeable terms.

Product market: A market in which a good or service is bought and sold.

Resource market: A market in which a resource is bought and sold.

Rational self-interest: Each individual tries to maximize the expected benefit achieved with a given cost or to minimize the expected cost of achieving a given benefit.

Marginal: Incremental, additional, or extra; used to describe a change in an economic variable.

Association-is-causation fallacy: The incorrect idea that if two variables are associated or correlated in time, one must necessarily cause the other.

Fallacy of composition: The incorrect belief that what is true for the individual, or part, must necessarily be true for the group, or the whole.

Secondary effects: Unintended consequences of economic actions that may develop slowly over time as people react to events.

Origin: On a graph depicting two-dimensional space, the zero point.

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Horizontal axis: Line on a graph that begins at the origin and goes to the right and left; sometimes called the *x*-axis.

Vertical axis: Line on a graph that begins at the origin and goes up and down; sometimes called the *y*-axis.

Graph: A picture showing how variables relate in two-dimensional space; one variable is measured along the horizontal axis and the other along the vertical axis.

Dependent variable: A variable whose value depends on that of the independent variable.

Independent variable: A variable whose value determines that of the dependent variable.

Positive relation (direct relation): It occurs when two variables increase or decrease together; the two variables move in the same direction.

Negative relation inverse (relation): It occurs when two variables move in opposite directions; when one increases, the other decreases.

Slope of a line: A measure of how much the vertical variable changes for a given change in the horizontal variable; the vertical change between two points divided by the horizontal change.

Tangent: a straight line that touches a curve at a point but does not cut or cross the curve; used to measure the slope of a curve at a point.

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CHAPTER OUTLINE

The following outline organizes content (including any activities in the PowerPoints) by topic and learning objective.

I. Chapter Objectives (PPT Slides 2–3)
II. What Is Economics? (LO 1.1, LO 1.2; PPT Slides 5–7)
    a. Economics Is a Social Science: Economics focuses on the interactions between individuals, groups, and institutions in the economy, and how these interactions influence economic outcomes.
    b. Economics Is About Scarcity: Economics is about making choices. The problem is that wants or desires are virtually unlimited, while the resources available to satisfy these wants are scarce. A resource is scarce when it is not freely available, when its price exceeds zero.

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Economics studies how people use their scarce resources in an attempt to satisfy their unlimited wants.

c. Microeconomics and Macroeconomics
   - Microeconomics: The study of the economic behavior in individual markets, industries, or sectors, such as that for computers or unskilled labor.
   - Macroeconomics: The study of the performance of the economy as a whole (e.g., total production and employment).

III. The Science of Economic Analysis (LO 1.3, LO 1.4; PPT Slides 9–16)

a. Economic Theory and Economic Model: An economic theory, or economic model, is a simplification of economic reality that is used to make predictions about the real world. An economic theory captures the important elements of the problem under study.

b. The Scientific Method: This is a four-step process of theoretical investigation:
   - Step One: Identify the question and define relevant variables. A variable is a measure that can take on different values at different times.
   - Step Two: Specify assumptions:
     - Other-things-constant assumption: This focuses on the relationships between the variables of interest, assuming that nothing else important changes (i.e., ceteris paribus).
     - Behavioral assumptions: These focus on how people will behave (i.e., in their rational self-interest).
   - Step Three: Formulate a hypothesis, a theory about how key variables relate to each other. The purpose of this hypothesis, like that of any theory, is to help make predictions about cause and effect in the real world.
   - Step Four: Test the hypothesis. Compare its predictions with the evidence. The theory is then either rejected, accepted, or modified and retested.

c. Normative versus Positive
   - A positive economic statement concerns what is; it can be supported or rejected by reference to facts.
   - A normative economic statement concerns what should be; it reflects an opinion and cannot be shown to be true or false by reference to the facts.

d. Predicting Average Behavior: The task of an economic theory is to predict the impact of an economic event on economic choices and, in turn, the effect of these choices on particular markets or on the

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economy as a whole. Economists focus on the average, or typical, behavior of people in groups.

IV. How the Economy Works (LO 1.5; PPT Slides 18–30)
   a. Resources: The inputs, or factors of production, used to produce the goods and services that people want. Resources are divided into four categories:
      - Labor: Human effort, both physical and mental
      - Capital (physical capital): Manufactured items (tools, buildings) used to produce goods and services
      - Human capital: Knowledge and skills people acquire to increase their productivity
        - Entrepreneurial ability: The imagination required to develop a new product or process, the skill needed to organize production, and the willingness to take the risk of profit or loss
      - Natural resources: Gifts of nature, bodies of water, trees, oil reserves, minerals, and animals, which can be renewable or exhaustible
   b. Goods and Services: Resources are combined to produce goods and services.
      - A good is something we can see, feel, and touch (i.e., corn). It requires scarce resources to produce and is used to satisfy human wants.
      - A service is not tangible but requires scarce resources to produce, and it satisfies human wants (i.e., haircut).
      - A good or service is scarce if the amount people desire exceeds the amount available at a price of zero. Goods and services that are truly free are not the subject matter of economics. Without scarcity, there would be no economic problem and no need for prices.

V. Economic Decision Makers and Markets (LO 1.5; PPT Slides 25–30)
   a. There are four types of decision makers:
      - Households, which demand goods and services produced as consumers and supply resources to the resource market as resource owners.
      - Firms, which use resources that households supply and produce goods and services that households demand.
      - Governments, which use resources that households supply and produce goods and services that households demand.

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- The rest of the world, which uses resources that households supply and produces goods and services that households demand.

b. Their interaction determines how an economy's resources are allocated.
c. Payments for resources: Labor–wage; capital–interest; natural resources–rent; entrepreneurial ability–profit.
d. Markets: Buyers and sellers carry out exchanges in markets.
   - Goods and services are exchanged in product markets.
   - Labor, capital, natural resources, and entrepreneurial ability are exchanged in resource markets.
e. A Simple Circular Flow Model: A simple circular flow model describes the flow of resources, products, income, and revenue among economic decision makers.

VI. The Art of Economic Analysis (LO 1.1, LO 1.3; PPT Slides 32–34)
a. Rational Self-Interest: Economics assumes that individuals, in making choices, rationally select alternatives they perceive to be in their best interests. Rational refers to people trying to make the best choices they can, given the available information.
   - People try to minimize the expected cost of achieving a given benefit or to maximize the expected benefit achieved with a given cost.
b. Choice Requires Time and Information: Time and information are scarce and therefore valuable. Rational decision makers acquire information as long as the expected additional benefit from the information is greater than its expected additional cost.
c. Economic Analysis Is Marginal Analysis: Economic choice is based on a comparison of the expected marginal cost and the expected marginal benefit of the action under consideration.
   - Marginal means incremental, additional, or extra.
   - A rational decision maker changes the status quo if the expected marginal benefit is greater than the expected marginal cost.

VII. Some Pitfalls of Faulty Economic Analysis (LO 1.6; PPT Slides 36–37)
a. The Fallacy That Association Is Causation: The fact that one event precedes another or that two events occur simultaneously does not mean that one caused the other.
b. The Fallacy of Composition: The incorrect belief that what is true for the individual, or the part, is true for the group, or the whole.
c. The Mistake of Ignoring Secondary Effects: The mistake of ignoring the unintended consequences of policy.

VIII. If Economist Are So Smart, Why Aren't They Rich? (PPT Slides 39–40)

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a. Economists have been appointed to federal cabinet posts as secretaries of commerce, defense, labor, state, and treasury, and they have been appointed to head the U.S. Federal Reserve System.
b. Economics is the only social science and the only business discipline for which the prestigious Nobel Prize is awarded, and pronouncements by economists are reported in the media daily.

IX. **Self-Assessment 30 minutes total.** (PPT Slide 41) Present the activity slides or distribute these as handouts. Have students complete the questions individually. Share and discuss their answers with other students.
X. Summary (PPT Slide 42)

Appendix A1-1 (PPT Slides 44–60)

I. Understanding Graphs
   a. Graph: A picture showing how variables relate.
      - Origin: The point of departure, the point from which all variables are measured.
      - Horizontal axis: The value of the *x*-variable increases as you move along this axis to the right of the origin; a straight line to the right of the origin.
      - Vertical axis: The value of the *y*-variable increases as you move upward and away from the origin; a straight line extending above the origin.

II. Drawing Graphs
   a. Within the space framed by the axes, you can plot possible combinations of the variables measured along each axis.
   b. Time-series graph: Shows the value of one or more variables over time.
   c. Types of relationships between variables:
      - Positive, or direct, relation: As one variable increases, the other variable increases.
      - Negative, or inverse, relation: As one variable increases, the other variable decreases.
      - Independent, or unrelated, relation: As one variable increases, the other variable remains unchanged or unrelated.

III. The Slope of a Straight Line: The slope of a line measures how much the vertical variable (*y*) changes for each one-unit change in the horizontal variable (*x*).
   a. Slope = (Change in the vertical distance)/(Change in the horizontal distance) = $\Delta y/\Delta x$ = rise/run
      - The slope of a line does not imply causality but indicates a relation between the variables.

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b. If the slope is:
    - Positive: There is a positive or direct relation between the variables.
    - Negative: There is a negative or inverse relation between the variables.
    - Zero or infinite: There is no relation between the variables; they are independent or unrelated.

IV. The Slope, Units of Measurement, and Marginal Analysis
    a. The slope depends in part on the units of measurement.
    b. The slope is a convenient device for measuring marginal effects.

V. The Slopes of Curved Lines: To find the slope of a curved line at a particular point, draw a straight line that just touches the curve at that point but does not cut or cross the curve. Such a line is called a tangent to the curve at that point.

VI. Line Shifts: A change in an underlying assumption is expressed by a shift in the curve.

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ANSWERS TO END OF CHAPTER QUESTIONS

Review Questions

1. A resource is scarce when the amount people desire exceeds the amount available at a price of zero. The concept of scarcity is important to the definition of economics because scarcity forces people to choose how they will use their resources in an attempt to satisfy their unlimited wants and desires. Economics is about making choices. Without scarcity, there would be no economic problem and, therefore, no need to choose between competing wants and desires.

2. a. Individuals will compare the expected benefits of attending college full time with the expected costs. One benefit might be that the individual's stock of knowledge and productivity will grow, and so will their wage. Costs include not only tuition but also the forgone wages, wages that could have been earned by working instead of attending college full time. If the expected benefits outweigh the costs, then the rational person will choose to go to college full time.
   b. Individuals will compare the expected benefits of a new textbook with the higher costs of purchasing a new textbook. The benefits include not being confused by other students' markings in the book and a higher resale value. However, the out-of-pocket cost of a new book will be higher than the cost of a

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used book. If the expected benefits outweigh the costs, then a rational person will purchase the new textbook.
c. Individuals will compare the expected benefits and costs associated with both colleges under consideration and will choose the college at which the difference between benefits and costs is greater. The costs of attending an out-of-town college may include greater travel costs and phone bills, while the benefits may include learning about a different region.

3. Rational self-interest is not blind materialism, pure selfishness, or greed. Rational self-interest means we choose the option that maximizes expected benefits with a given cost. People will give more to charities when the contribution is tax deductible. The lower the personal cost of helping others, the more we are willing to help and contribute.

4. By increasing its delivery radius, the store will have greater sales. However, these marginal revenues must be balanced against the additional costs incurred, such as a greater consumption of pizza ingredients, more gasoline for the delivery truck, and possibly the need to hire additional labor and increase advertising.

5. Rational decision makers will continue to acquire information as long as the benefit of the additional information exceeds the additional costs. Oftentimes, we are willing to pay others to gather and digest the information for us.

6. Answers may vary. Students select college majors for a variety of reasons, and the expected pay is only one of them. Some students have the aptitude necessary to successfully study economics.

Problems and Applications

1.1

a. macro
b. micro
c. macro
d. micro
e. macro
f. micro
g. macro

1.2

a. positive

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b. positive
c. normative
d. normative
e. normative
f. positive
g. normative
h. normative

1.3

a. Owen, stove, utensils, other kitchen appliances, building where the pizza place is located – capital, pizza chef, delivery person – labor, skills and experience of pizza chef and driving skills and driving licence of the delivery person – human capital, ingredients, electricity, water, land – natural resources
b. Lecture hall, classroom building, chairs, desks, projector – capital, faculty, administrators, genitors – labor, education and skills of faculty, administrators, and genitors – human capital, electricity, water, land – natural resources
c. Scissors, brushes, mirrors, hairclips – capital, hairstylist, receptionist – labor, skills and education of hairstylist and receptionist – human capital, electricity, water, land – natural resources

1.4 The things that influence how well corn grows are: amount of water, soil quality, amount of sun exposure, temperature, type of seeds, etc. These are the things to be hold constant, the same for the control and treatment group. The only thing that should be different between the two groups is the fertilizer – if it is added or not.

1.5

a. The professor, classroom, classroom size, the textbook, other material used for teaching, the students should be also the same or as similar as possible (based on socioeconomic status – race/ethnicity, sex, income, parental education) and their major, full-time vs part-time students, working or not, on campus resident or not, year in college, etc. The amount and effort put into studying.
b. If there is a national recession or expansion, other major macroeconomic events that impact the economy and employment like the Covid-19 pandemic. These are the things that should be held constant and anything else that can impact the employment/unemployment. The only thing that should change is the minimum wage. This is a very hard and unlikely to achieve.
c. One of the most important effect on the wage are personal characteristics of a person – work habit, perseverance, health, motivation, talent and ability. In addition, the type of the major and which college you go to also matter.

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Finally, there are a number of life events that might prevent you from completing the college. So, these thing should be held constant among individuals that we are comparing. The only difference should be if the person completed college or not – everything else should be identical or near identical (very difficult to achieve).

d. How many people are in a country (population size), how wealthy is the country (GDP or GDP per capita), how much money they are investing in health, or education, or sports as a share of GDP. All of these characteristics should be held constant. They only difference should be income inequality.

1.6

- Add the government (with taxes, subsidies and government expenditure) as well as government employment of people and production of goods and services.
- Financial sector with financial intermediaries such as banks, so that households and firms can also save or borrow.
- International trade – imports and exports.

1.7

a. This assertion is a mistake because the secondary effects of taxes on production and the labor supply are ignored. If the tax rate were raised to 100 percent, for example, no one would want to work or produce, so government revenues would decline.
b. This is the fallacy that association implies causation. It is more likely that recession causes a change in imports than the other way around.
c. This is a fallacy of composition. True, the tariff may help the steel industry. But it hurts purchasers of steel, including the automobile and construction industries. The overall effect on the economy is unclear.
d. This is the fallacy of composition, since attempts to sell so much gold at once would push down the price of gold.
e. You are committing the fallacy that association is causation. The causality is undoubtedly in the other direction; that is, doctors will tend to locate where there is a lot of disease and, therefore, a greater need for medical care.

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