Part I

Lecture Notes

Chapter 1

**What Is Economics?**

Chapter 1 introduces students to the subject of economics in two principal ways—by presenting several “ideas for beyond the final exam,” and by discussing the concepts of abstraction and modeling. The appendix introduces some of the techniques of graphic analysis—tools students will use throughout the book and, more important, very likely throughout their careers.

Chapter Outline

Ideas for Beyond the Final Exam

These are the most important ideas in the book, all of which will be picked up and discussed in greater detail in later chapters. All of the ideas are in the combined text, and several are excluded in each of the micro and macro texts.

1. How Much Does it Really Cost?

2. Attempts to Repeal the Laws of Supply and Demand—The Market Strikes Back

3. The Surprising Principle of Comparative Advantage

4. Trade Is a Win-Win Situation

5. The Importance of Thinking at the Margin

6. Externalities—A Shortcoming of the Market Cured by Market Methods

7. The Trade-Off between Efficiency and Equality

8. Government Policies Can Limit Economic Fluctuations—But Don’t Always Succeed

9. The Short-Run Trade-Off between Inflation and Unemployment

10. Productivity Growth is (Almost) Everything in the Long Run

Inside the Economist’s Toolkit

Economics as a Discipline

Economics is the most scientific of the social sciences, yet much more social than the natural sciences.

The Need for Abstraction

Because the real economic world is so complex, economists must abstract from details in order to focus on the most important details.

Much of the art of economics involves finding the most useful degree of abstraction.

The Role of Economic Theory

A theory is a deliberate simplification of factual relationships that attempts to explain how those relationships work.

Statistical correlation does *not* necessarily imply causation.

Skillful use of economic theory helps to predict future events.

What Is an Economic Model?

An economic model is a simplified, small-scale version of some aspect of the economy.

Economic models are often expressed in equations, by graphs, or in words.

Reasons for Disagreements: Imperfect Information and Value Judgments

Economists agree on more than the public gives them credit for.

Disagreements arise often because the relevant facts are unknown, or because economists have different value judgments.

Appendix: Using Graphs: A Review

Graphs Used in Economic Analysis

Graphs are useful visual aids that help us see relationships between variables.

Two-Variable Diagrams

A two-dimensional graph simultaneously represents the behavior of two variables.

The Definition and Measurement of Slope

The *slope* of a straight line is the ratio of the vertical change to the corresponding horizontal change as we move right along the line.

Curved lines also have slopes, the numerical values of which are different at every point along the curve.

The slope of a smooth curved line is the same as the slope of the straight line that is tangent to the curve at that point.

Rays through the Origin and 45º Lines

Along a ray from the origin, the ratio of the variables on the two axes is *constant*.

Along a 45° ray, the ratio is *one* (the variable measured on each axis have equal values).

Squeezing Three Dimensions into Two: Contour Maps

Contour lines can be used to show three dimensions in a two-dimensional space.

Margin Definitions and Key Terms

**Opportunity cost:** the value of the next best alternative that must be given up because of that decision.

**Abstraction:** ignoring many details so as to focus on the most important elements of a problem.

**Theory:** a deliberate simplification of relationships whose purpose is to explain how those relationships work.

**Correlation:** when two variables move together; correlation need not imply causation.

**Economic model:** a simplified, small-scale version of some aspect of the economy expressed in equations, by graphs, or in words.

**Variable:** something measured by a number; it is used to analyze what happens to other things when the size of that number changes (varies).

**The origin:** the “0” point in the lower left-hand corner of a graph where the axes meet.

**Diagram:** abstraction from many details, some of which may be quite interesting, so as to focus on the two variables of primary interest.

**Slope of a straight line:** the ratio of the verticalchange to the corresponding horizontal cahnage as we move to the right.

**Slope of a curved line:** at a aparticular point is defined as the slope of the straight line that is tangent to the curve at that point.

**Tangent to a Curve:** to a curve at some point, Z, on that curve is a straight line through point Z does not cut the curve at that point.

***Y*-intercept:** point at which a line or curve touches the vertical axis.

**Ray through the origin, or ray:** a line whose y-intercept is zero.

**45° line:** a ray through the origin with a slope of +1.

**Production indifference map:** a graph whose axes show the quantities of two inputs that are used to produce some output.

Major Ideas

1. Pick a few. Many economists would emphasize Idea 1, opportunity cost; Idea 4, voluntary exchange; and Idea 5, marginal analysis.

2. A model is required if one is to make sense out of an infinitely complicated real world.

3. Because graphs are used so often to portray economic models, it is important for students to acquire some understanding of their construction and use.

4. Often, the most important property of a line or curve drawn on a diagram will be its slope, which is defined as the ratio of the “rise” over the “run,” or the vertical change divided by the horizontal change. Curves that go uphill as we move to the right have positive slopes, while curves that go downhill have negative slopes.

5. By definition, a straight line has the same slope wherever we choose to measure it. The slope of a curved line changes, but the slope at any point on the curve can be calculated by measuring the slope of a straight line tangent to the curve at that point.

On Teaching the Chapter

Instructors who are pressed for time may skip most of this chapter, leaving it for the students to read on their own. If you can find time for it, however, an investment in this chapter will pay dividends later in the course, because it should succeed in exciting students about the subject.

All of the ten ideas can lead to interesting classroom discussions. Instructors can enhance these discussions by showing that there are major puzzles underlying each one of them. It is often unclear, for example, whether market exchanges really do benefit both parties (Idea 4), or what the opportunity cost of a given decision really is (Idea 1). As students confront these puzzles, they will be drawn intuitively to an understanding of the usefulness of economic concepts.

One of the central points of the chapter’s discussion of methods—that theory is necessary for policy analysis—can be illustrated by picking a current issue of public policy out of the news. Students can be asked to see what model is being used as the basis for specific policy recommendations.

It is important to explain the difference between correlation and causation. The text uses one example in Chapter 1 regarding rain and slower driving. This example discusses the correlation between the two events; the correlation obviously does not imply causation. Correlation and causation are often misunderstood and spending classtime clarifying the distinction between the two will benefit the students immensely.

Well-prepared students will not need to spend much time on the appendix, but students with weak backgrounds in graphical analysis will need drills on these materials (provided in the Study Guide) and will need the instructor’s help as well. Time spent helping the students become comfortable interpreting graphs will reap dividends throughout the course.

Ask students to bring in a graph from a newspaper or magazine. Have students work in groups to analyze their graphs. Ask students to count how many graphs contain obvious errors and discuss whether the graphs are likely to be purposely misleading (is the author trying to convince the reader?) or merely the result of sloppy work.

Discussion Questions

Instructors who want to spend some time with this chapter can ask discussion questions that relate to any or all of the “Ideas for Beyond the Final Exam.” Students may be most interested in questions that come from today’s newspaper. Some other questions, each one corresponding to one of the ten ideas, could be:

1. The text argues that because exchange of goods and services is voluntary, both the buyer and the seller benefit (otherwise they would not agree to the exchange), and therefore most laws that prohibit exchanges are misguided. Do you think the government should prohibit the exchange of a) crack cocaine, b) prostitution, c) the labor of children?

Suggested Answer: Critics of prohibition may point out that one of the most fundamental ideas of economics is that both parties must expect to gain something in a voluntary exchange, otherwise, why would they both agree to trade? However, one might also be tempted to look at the ethical/moral aspects of some of these exchanges. Apart from these, students should discuss the long-term economic impact of such activities. For example, tying up future labor resources to an unskilled environment in the case of child labor, or destroying the acumen of the labor pool as in the case of cocaine addiction.

2. What are the opportunity costs of the United States maintaining a large and technologically sophisticated military force? What are the benefits to the country? Do you think the benefits are worth the cost?

Suggested Answer: Opportunity costs include those products that otherwise could have been produced and consumed but weren’t because those resources were instead devoted to the military. Benefits include protection from external (national as well as terrorist) threats, security of borders, protection of American strategic interests around the globe, etc. Heavy military expenditure results in reduced consumption due to higher taxes, diversion of resources from development of infrastructure, education, health care, and social security among others. Opinion might be highly divided as to whether the benefits are worth the cost. Some sources estimate the expenses at more than $331 billion for military operations alone in Iraq, Afghanistan, and others since 9/11.

3. You may be worried about the cost of housing in your community. Rising rents make it increasingly difficult for low- and moderate-income people to find adequate shelter. Students often have trouble finding lodging they can afford. Would it be a good idea for your local government to put a legal ceiling on rents, in order to ensure the affordability of housing?

Suggested Answer: Student answers may vary. Attempts to repeal the laws of supply and demand usually backfire and sometimes produce results virtually the opposite of those intended. Where rent controls are adopted to protect tenants, housing grows scarce because the law makes it unprofitable to build and maintain apartments. When price floors are placed under agricultural products, surpluses pile up because people buy less.

4. For many years in the middle of the 20th century, the United States was one of the world’s most efficient producers of manufactured goods such as iron and steel, automobiles, household appliances, and clothing. In recent years, American companies have lost much of their advantage and are having difficulty competing against foreign companies. Do you think the U.S. government should restrict the imports of manufactured goods from other countries, in order to preserve markets for American companies?

Suggested Answer: Individuals who are not familiar with the concept of comparative advantage may agree with this observation. Economists maintain that both sides normally gain from international trade. A remarkable result, called the law of comparative advantage, shows that the two nations can benefit by trading and that each can gain as a result.

5. You are a bank manager, faced with the following problem. You know that at the present time, on average, each dollar of deposits that the bank holds will cost the bank eight cents a year—three cents interest paid to the depositor and five cents to pay the wages and the other expenses of the bank. The bank makes its income by lending out the money that people have deposited and charging interest on those loans. So on average it must currently charge more than 8 percent a year to make a profit. You have just discovered an opportunity for lending a substantial sum of money, but the maximum interest rate you can charge on this deal is 6 percent. Should you try to get new deposits into your bank, to provide the funds to make those loans? Upon what does your answer depend?

Suggested Answer: The answer would depend on marginal cost. You should try to get new deposits as long as your marginal cost is less than the interest rate spread of 3 percent. The additional cost of maintaining the new accounts will probably be less than the interest rate differential.

6. An external cost is a cost imposed upon a third party, someone who neither buys nor sells the product. For example, a manufacturer who sends wastes up through the smokestack may impose the cost of dirty air upon the citizens—but under the ordinary market mechanism, the manufacturer does not have to pay for this cost. In this case, do you think the government should intervene, and if so how?

Suggested Answer: Externalities escape the control of the market mechanism because no financial incentive motivates polluters to minimize the damage they do. The government should use the market mechanism to control undesirable externalities. For example, if the manufacturer is charged for the clean air used up, just as it is charged for any raw material it consumes, then the manufacturer will have a financial incentive to reduce the amount of pollution generated.

7. Government policies designed to increase the country’s output often make people’s incomes less equal. Similarly, policies designed to reduce the inequality of income often reduce output. In each of the following cases, show why you think there is or is not a trade-off between output and equality, and if so what should be done.

a) The government raises the tax rate on corporations, using the revenue to increase welfare payments to mothers with dependent children.

b) The government permits owners of companies to reduce their tax payments, provided that they invest a portion of their income in new plant and equipment.

c) The government starts a large training program to provide useful job-market skills to the unemployed.

Suggested Answers:

a) Trade-off exists between output and equality. When the government re-distributes income through taxation, it reduces the reward to work hard and as a result people produce fewer goods and services. The government can provide incentives to corporations, who would create new employment opportunities that could help mothers earn income instead of giving them money directly. Advise students to read more about programs like AFDC and TANF.

b) Even though there is a trade-off, this policy aims to reduce it by making companies create more employment opportunities by investing in new plants and equipments.

c) The third policy aims to reduce the trade-off by helping people acquire skills required by the market. This policy might increase efficiency and equality. However, doubts remain as to the effectiveness of implementation of such programs.

8. Suppose it is true that the way to stop high inflation is to increase unemployment. Is it fair? Inflation is a problem faced by everyone in the country. Do we have the right to say that a small proportion of us, those who are among the most disadvantaged, the unemployed, will pay the cost of solving this problem?

Suggested Answer: Students should discuss the trade-off between inflation and unemployment. Policies aimed at reducing inflation may increase unemployment. Inflation will increase if the policy makers take measures to reduce unemployment. The government makes policies based on the prevailing economic situation.

9. Do you believe that productivity in the United States should grow? The text states that improvements in our standard of living depend upon productivity growth, as does our ability to improve hospitals, schools, and social amenities. But some people argue that our standard of living is too high, that we are using up the world’s scarce resources, spoiling our natural environment and increasing average world temperatures by continuing our economic growth. Can you resolve this conflict?

Suggested Answer: Productivity should grow in the long run. Nothing has as great an effect on our material well-being and the amounts society can afford to spend on hospitals, schools, and social amenities as the rate of growth of productivity. Small increase in productivity growth can have a huge effect on a country’s standard of living over a long period of time. Students could discuss the impact of economic activity on our environment. They could cover the measures to protect the environment such as using efficient production methods, recycling, waste management, etc. Notice that contributions to environmental problems are not restricted to developed countries.

Problems

The Study Guide contains several excellent problems that can be used to reinforce the student’s understanding of graphs.