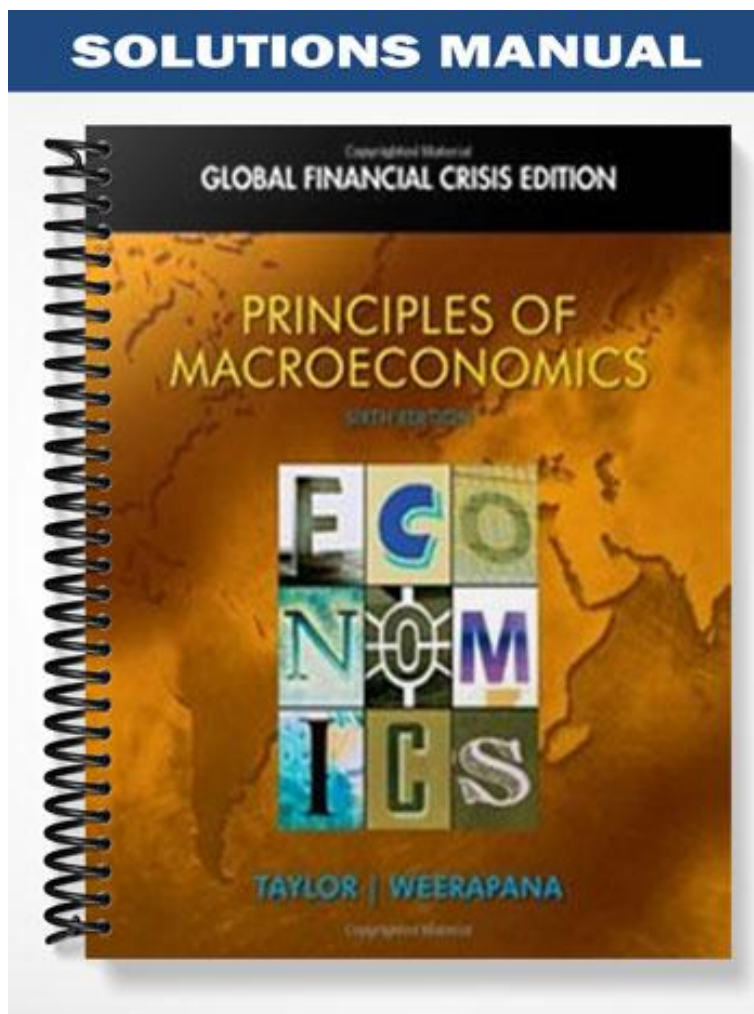


SOLUTIONS MANUAL



CHAPTER 2

Observing and Explaining the Economy

CHAPTER OVERVIEW

This chapter presents a rationale for studying economics and describes the tools needed to begin forming an economic perspective. In a sense it tells the student what economists do and how they do it. An understanding of economics gives us a framework for analyzing many of today's events and issues including examples like the behavior of gasoline prices over time and the dynamics of rising health-care costs. The foundation of all economic analysis is the use of data, graphs, and models. These topics are introduced and discussed within the issue of health care. The chapter ends with a discussion of how economics can affect public policy, and the distinction between positive and normative economics is stressed.

TEACHING OBJECTIVES

1. Communicate the importance of studying economics.
2. Discuss how economics makes use of data and graphs. Problems in using data should also be discussed.
3. Begin developing an economic vocabulary. This should include real and nominal GDP, the price level, relative price, and inflation.
4. Discuss negative and positive correlation between variables. Differentiate between correlation and causation.
5. Discuss the absence of controlled experiments in economics.
6. Introduce economic models. Bring supply and demand into the discussion. Show that models try to explain the correlation between variables and that data are used to build and test models.
7. Describe the micro/macro division of economics.
8. Briefly discuss the role of economics in the development of government policies. Be sure to include in the discussion the difference between normative and positive economics.

KEY TERMS

relative price

economic variable

controlled experiments

experimental economics

economic model

microeconomics

macroeconomics

gross domestic product (GDP)

positively related

negatively related

ceteris paribus

capitalism

socialism

mixed economy

positive economics

normative economics

Council of Economic Advisers

TEACHING TAYLOR AND WEERAPANA'S *ECONOMICS*

Economic measurement and the relationships between variables are very important in economics. The examples of the price of gasoline and expenditures on health care are used in the chapter in order to give continuity and to emphasize early on that the production of services is as important as the production of goods in the economy. The role and importance of information in analyzing problems and making decisions is found in the discussion of data. Finally, the seeds of marginal analysis are sown in the brief introduction to economic models and the application of economic theory to real-life government policy decisions is stressed.

LECTURE OUTLINE AND TEACHING TIPS

- I. Understanding Fluctuations in the Price of Gasoline
 - A. Virtually all the questions economists seek to answer come from observing the economy. Economists document and quantify their observations by collecting and examining data.
 - B. The first task of most economic examinations is to collect data. The focus of this chapter is on the behavior of the price of gasoline

Teaching Tip

Plot employment in service and in manufacturing industries, and then plot them again as a percent of total employment. This is an example of economic evolution. To bring in an international aspect, show that, in many instances, manufacturing has moved overseas.

- C. Data on the retail price of gasoline are given in Figure 1. Figure 2 shows the relative price of gasoline. Regional price differences are seen in Figure 3.

Teaching Tip

If you are teaching a course in microeconomics, the discussion of the relative price of health care allows you to mention the importance of relative prices in consumer choice. Use Figure 2. A reference to Chapter 5 will convey to students the interconnection of the coming topics. This is also a good time to use Figure 3 to tell students that markets can create different prices for the same good. Regional differences are often the reason behind regional price differences.

- D. Two series of data may be related. This can be seen in Figure 4. Correlation (positive and negative) measures the potential relationship.

Teaching Tip

Ask student opinion about the correlation between good grades on economics tests and time spent studying versus time spent partying. What might explain a less than perfect correlation?

- E. Correlation and causation are not the same. To say that two data series are correlated does not mean that one causes the other.
 - F. The data employed by economists are not always accurate. Economics, unlike the physical sciences, lacks controlled experiments.
- II. Explaining an Economic Event
- A. A model is an explanation of how the economy or part of the economy works.
 - B. Economic models may be classified according to whether they seek to explain an economy (macroeconomics) or seek to explain aspects of individual behavior within an economy (microeconomics).
 - C. Models are built on theories and tell economists whether variables are negatively or positively related. Figures 5, 6, and 7 will be useful.
 - D. The *ceteris paribus* assumption means to hold all other things constant. This is the way that economists focus on the impact of a single variable on an economic event.
 - E. Economists will use the same model repeatedly. However, new models come into existence all the time as new hypotheses are tested.
- III. Recommending Appropriate Policies
- A. Ever since the *Wealth of Nations* by Adam Smith, economists have been motivated by a desire to improve government policy. Karl Marx saw contradictions in capitalism that would lead to its collapse. A new system called socialism would evolve. Many modern economies are mixed economies of both capitalism and socialism.
 - B. Normative economics attempts to develop and recommend policy. Positive economics simply explains the results of policy.
 - C. Economics is independent of political parties. It is a set of tools that aid in thinking.
 - D. Economists do not always agree in their policy recommendations.
 - E. President Obama has appointed three distinguished economists to the Council of Economic Advisors. The CEA is a small organization with staff access to the Office of the President.

DISCUSSION TOPICS

1. Have students collect annual data on some aspect of the economy (manufacturing, agriculture, service). Plot with respect to time and as a percent of GDP. The *Economic Report of the President* is a good source. Place this source on reserve at the library or have them go to the website of the Council of Economic Advisers.
2. Have students explore the reasons why economic theories change. Why might economists be interested in using alternative models to examine a unique economic event?
3. Use an example of an ill person and a thermometer to discuss correlation and causation. Many ill people have high temperatures. Thus, illness and raised temperatures are correlated. But does a raised temperature cause illness?
4. Relate scarcity to the use of limited student time to study, party, sleep, and so on.

SOLUTIONS TO END-OF-CHAPTER PROBLEMS

1.
 - a. Macroeconomic
 - b. Microeconomic
 - c. Macroeconomic
 - d. Microeconomic

e. Microeconomic

2.

a.

Year	Relative Price
1996	1.0326
1997	1.0538
1998	1.0208
1999	1.0206
2000	1.0000
2001	1.0000
2002	1.0096
2003	.9815
2004	1.0270
2005	1.0265
2006	.9828

b.

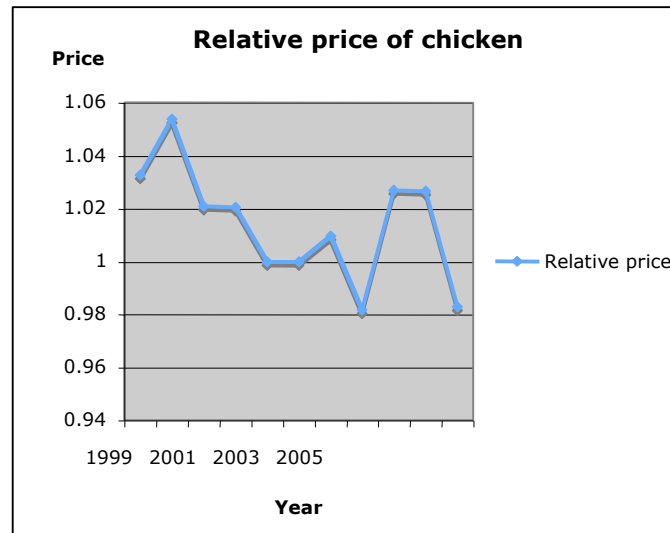


Figure 2.1

- c. As shown in the figure, the relative price of chicken has generally fallen over time except in the last two years where it has oscillated.
3. A relative price is a ratio of a good's price to the general price level. A change in a relative price is determined by the movements in the denominator and in the numerator. It is possible that both the good's price and the general price level rise. However, if the price level rises by more than the price of the good, then the relative price will fall.
- 4.
- A positive correlation is expected. To show causation, it is necessary to argue that one of these causes the other. In this case, it would be useful to have both a theory explaining how roosters respond to sunrise and data supporting the positive relationship.
 - A positive correlation is expected. Thunderstorms cause the use of umbrellas.

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- c. A negative correlation would be expected. To show causation, it is necessary to have a theory showing that people go to the theater less when the price of tickets rises and supporting data.
 - d. As hours worked rise, then weekly earnings should rise. There is a positive correlation.
 - e. A negative correlation is expected. The more children vaccinated, the fewer children with the disease.
5. Figure 2.2 shows the model graphically.

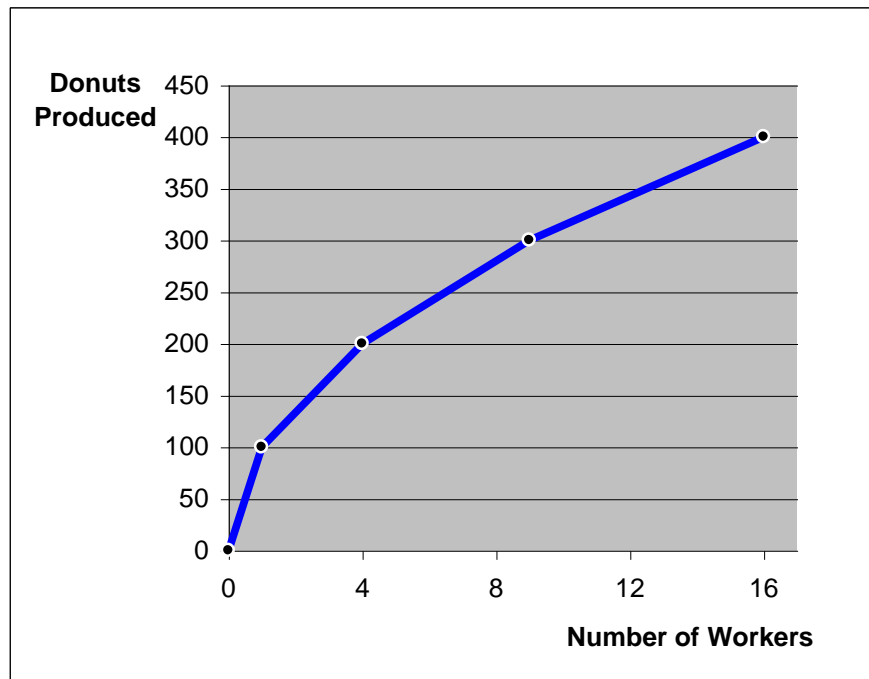


Figure 2.2

As the number of workers making donuts increases, so does the number of donuts produced.

$$\text{Donuts produced} = (\text{number of workers}) \times (\text{number of workers}) \times 100$$

- 6.
- a. The data should be for many workers in the same occupation over time.
 - b. The season of the year.
 - c. You would expect some oscillation about some average number of hours.
 - d. You would expect one or the other depending on the month of a year.
7. Economists make *ceteris paribus* assumptions to focus on how a change will affect an economic outcome. A forecast cannot account for all the possible changes in all the variables that may occur. In order to make a concrete statement about what will happen, economists must focus on the change in one variable. You would hold constant things like tastes, incomes, the number of customers, and so on.
8. To test gender one could run an experiment where resumes were sent out in which the individual had similar sounding names (to hold race constant), similar experiences (holding resume quality

constant), but different genders. This format would only allow race to vary, hence testing for its effect.

9.

- a. This is a normative statement. It is not clear what *too high* means. This is a statement of opinion.
- b. This is a positive statement. This statement is a statement of fact. It is either true or false.
- c. This is a positive statement. It can be tested by examining data.
- d. This is a normative statement. It is an opinion.
- e. This is a normative statement. It is not clear what one means by *many*. This means different things to different people.

10.

- a. This can be tested in some way. It is not an opinion. It is a positive statement.
- b. If the government wanted to reduce cigarette smoking, it could do lots of things. Increasing the tax is just one option. This is a normative statement due to the word *ought*.
- c. This is a testable idea. Raising the tax would raise the price and, therefore, reduce the quantity demanded. This is a positive statement.
- d. This is a normative statement. It is simply opinion.
- e. This is also a normative statement. It is an opinion and cannot be tested with data.