

N. GREGORY

MANKIW

PRINCIPLES OF

ECONOMICS

Eight Edition



CHAPTER

2

Thinking Like an Economist

PowerPoint Slides prepared by:
V. Andreea CHIRITESCU
Eastern Illinois University



The Economist as a Scientist, Part 1

- Economics is a science
- Economists are scientists
 - Devise theories
 - Collect data
 - Analyze these data
 - Verify or refute their theories
 - Use the scientific method



"I'm a social scientist, Michael. That means I can't explain electricity or anything like that, but if you ever want to know about people, I'm your man."



The Economist as a Scientist, Part 2

- Scientific method
 - Dispassionate development and testing of theories about how the world works
 - Observation, theory, more observation
- Conducting experiments in economics
 - Is often impractical
- Substitute for laboratory experiments
 - Economists pay close attention to the natural experiments offered by history



The Economist as a Scientist, Part 3

The role of assumptions

- Assumptions

- Can simplify the complex world and make it easier to understand
- The art in scientific thinking: deciding which assumptions to make

- Different assumptions

- To answer different questions
- To study short-run or long-run effects



The Economist as a Scientist, Part 4

- Economic models
 - Diagrams and equations
 - Omit many details
 - Allow us to see what's truly important
 - Built with assumptions
 - Simplify reality to improve our understanding of it



The Economist as a Scientist, Part 5

- Circular-flow diagram
 - Visual model of the economy
 - Shows how dollars flow through markets among households and firms
- Two decision makers
 - Firms and Households
- Two markets
 - For goods and services
 - For factors of production (inputs)



The Economist as a Scientist, Part 6

- Firms
 - Produce goods and services
 - Use factors of production (inputs)
- Households
 - Own factors of production
 - Consume goods and services

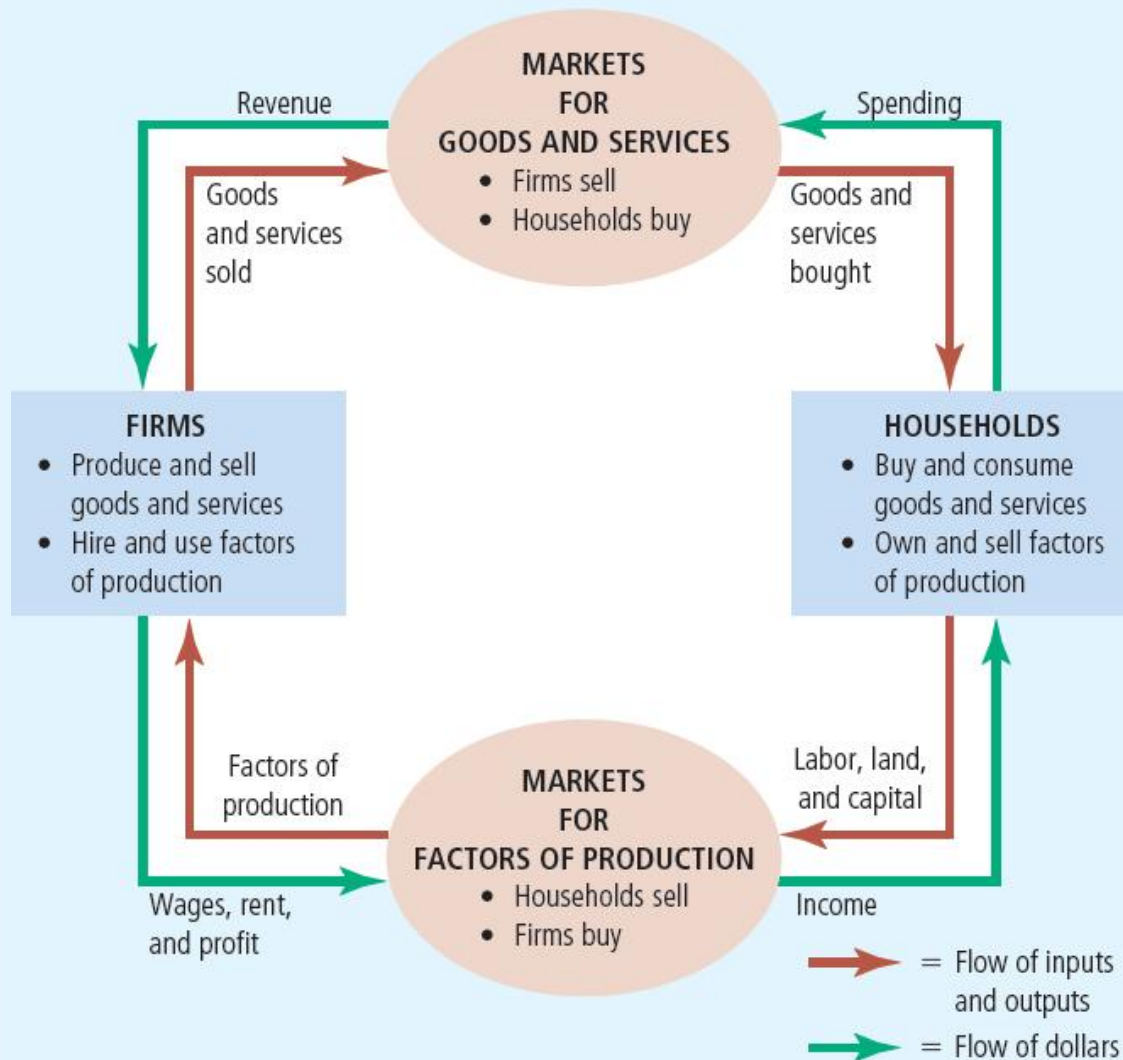


The Economist as a Scientist, Part 7

Firms and Households interact in markets

- Markets for goods and services
 - Firms are sellers
 - Households are buyers
- Markets for factors of production
 - Firms are buyers
 - Households are sellers

Figure 1 The circular flow



This diagram is a schematic representation of the organization of the economy.

Decisions are made by households and firms. Households and firms interact in the markets for goods and services (where households are buyers and firms are sellers) and in the markets for the factors of production (where firms are buyers and households are sellers).

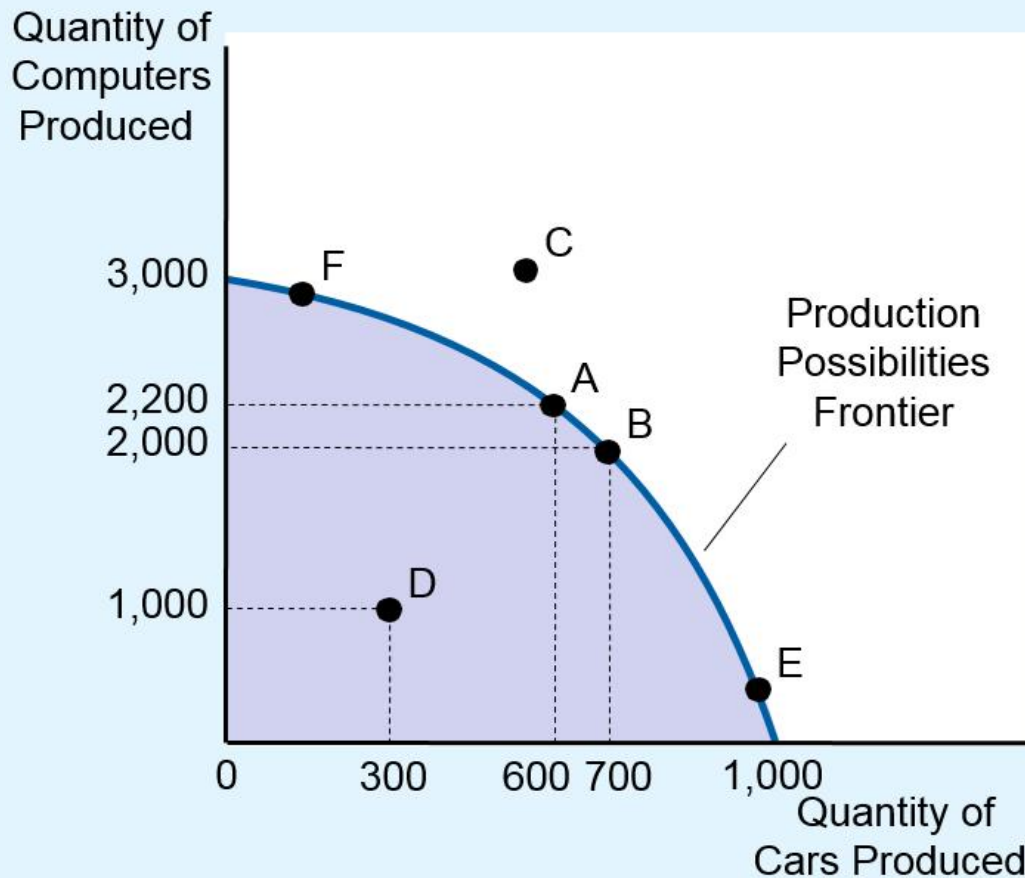
The outer set of arrows shows the flow of dollars, and the inner set of arrows shows the corresponding flow of inputs and outputs.



The Economist as a Scientist, Part 8

- Production possibilities frontier
 - A graph
 - Combinations of output that the economy can possibly produce
 - Given the available
 - Factors of production
 - Production technology

Figure 2 The production possibilities frontier



The production possibilities frontier shows the combinations of output—in this case, cars and computers—that the economy can possibly produce. The economy can produce any combination on or inside the frontier. Points outside the frontier are not feasible given the economy's resources. The slope of the production possibilities frontier measures the opportunity cost of a car in terms of computers. This opportunity cost varies, depending on how much of the two goods the economy is producing.



The Economist as a Scientist, Part 9

- Efficient levels of production
 - The economy is getting all it can from the scarce resources available
 - Points on the production possibilities frontier
 - Trade-off:
 - The only way to produce more of one good is to produce less of the other good
 - Moving from point A to point B: give up 200 computers to produce 100 more cars



The Economist as a Scientist, Part 10

- Inefficient levels of production
 - Points inside production possibilities frontier
- Opportunity cost of producing one good
 - Give up producing units of the other good
 - Slope of the production possibilities frontier



The Economist as a Scientist, Part 11

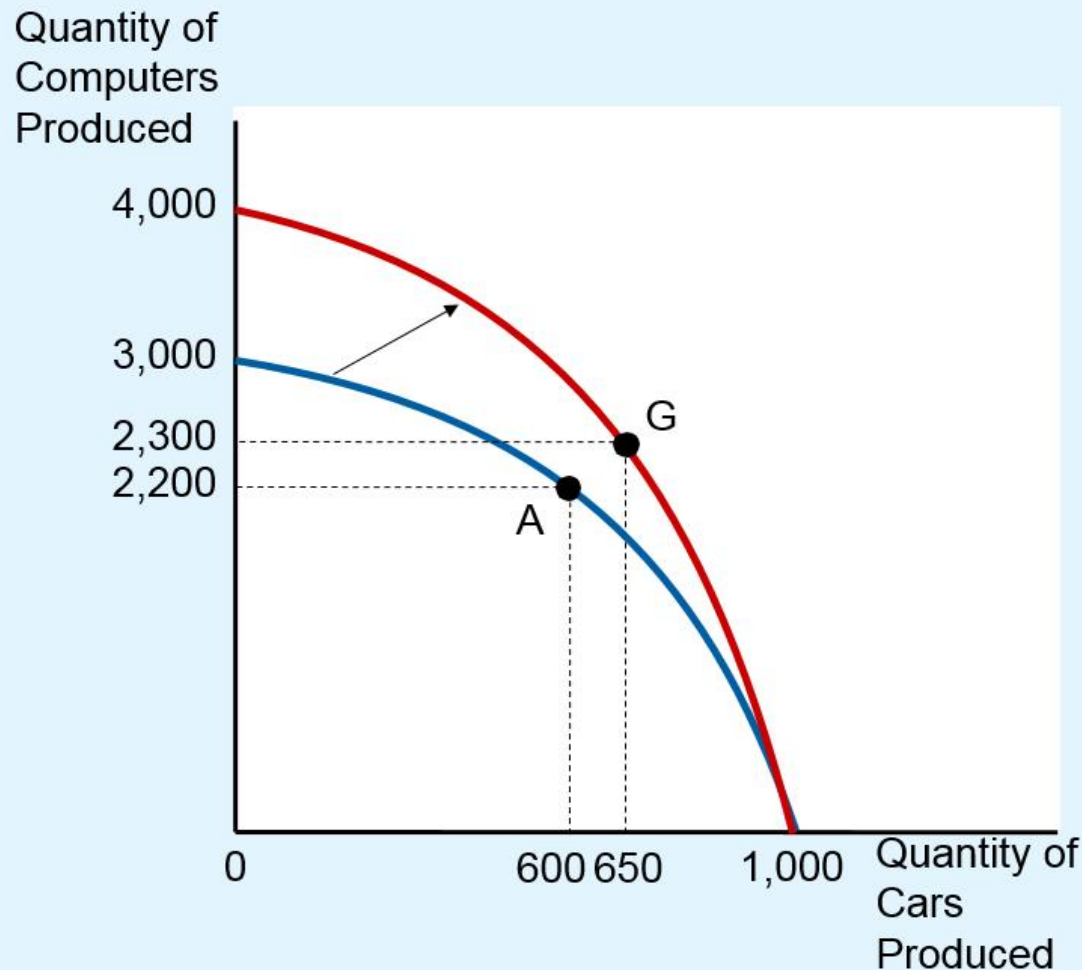
- Bowed outward production possibilities frontier
 - Opportunity cost of a car is highest
 - When the economy is producing many cars and fewer computers
 - Opportunity cost of a car is lower
 - When the economy is producing fewer cars and many computers
 - Resource specialization



The Economist as a Scientist, Part 12

- Technological advance
 - Outward shift of the production possibilities frontier
 - Economic growth
 - Produce more of both goods

Figure 3 A shift in the production possibilities frontier



A technological advance in the computer industry enables the economy to produce more computers for any given number of cars.

As a result, the production possibilities frontier shifts outward.

If the economy moves from point A to point G, then the production of both cars and computers increases.



The Economist as a Scientist, Part 13

- **Microeconomics**
 - The study of how households and firms make decisions and how they interact in markets
- **Macroeconomics**
 - The study of economy-wide phenomena, including inflation, unemployment, and economic growth



The Economist as Policy Adviser, Part 1

- **Positive statements: descriptive**
 - Attempt to describe the world as it is
 - Confirm or refute by examining evidence:
“Minimum-wage laws cause unemployment”
- **Normative statements: prescriptive**
 - Attempt to prescribe how the world should be: “The government should raise the minimum wage”



The Economist as Policy Adviser, Part 2

- Economists in Washington
 - Council of Economic Advisers
 - Advise the president of the United States
 - Annual *Economic Report of the President*: discusses recent developments in the economy and presents the council's analysis of current policy issues



© James Stevenson/ The New Yorker Collection/ www.cartoonbank.com

“Let’s switch. I’ll make the policy, you implement it, and he’ll explain it.”



The Economist as Policy Adviser, Part 3

- Economists in Washington
 - Office of Management and Budget
 - Department of the Treasury
 - Department of Labor
 - Department of Justice
 - Congressional Budget Office
 - The Federal Reserve



The Economist as Policy Adviser, Part 4

- Economists' advice is not always followed
 - Economic advisers: what policy is best
 - Communication advisers: how best to explain it to the public
 - Press advisers: how the news media will report
 - Legislative affairs advisers: how Congress will view the proposal
 - Political advisers: effect on the electorate
 - The president: decision



Why Economists Disagree, Part 1

- Economists may disagree
 - Validity of alternative positive theories about how the world works
- Economists may have different values
 - Different normative views about what policy should try to accomplish



Why Economists Disagree, Part 2

Differences in scientific judgments

- Different hunches about
 - Validity of alternative theories
 - Size of important parameters
 - Measure how economic variables are related



Why Economists Disagree, Part 3

Differences in values

- Peter and Paula – take the same amount of water from the town well
 - Peter's income = \$100,000
 - Tax = \$10,000 (10%)
 - Paula's income = \$20,000
 - Tax = \$4,000 (20%)



Why Economists Disagree, Part 4

Perception versus Reality

- Rent control
 - Adversely affects availability and quality of housing
 - Costly way of helping the neediest members of society
 - Many cities use rent control
- Trade barriers (tariffs and import quotas)
 - Economists oppose it

ASK THE EXPERTS

Ticket Resale

“Laws that limit the resale of tickets for entertainment and sports events make potential audience members for those events worse off on average.”

What do economists say?

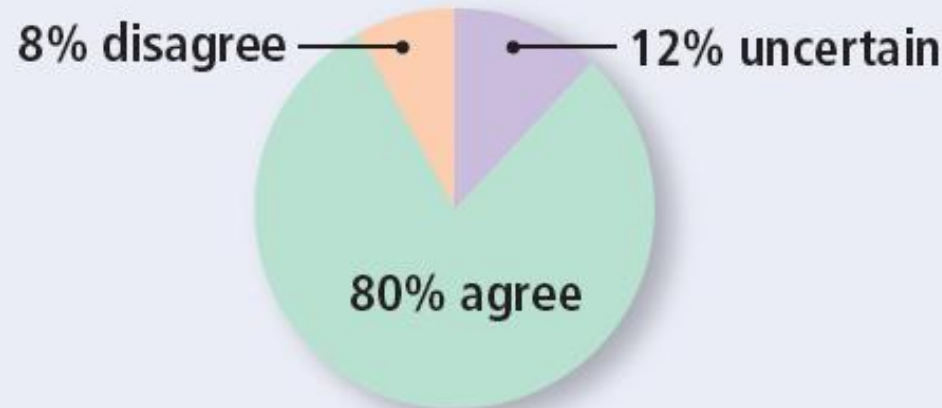


Table 1

Propositions about Which Most Economists Agree, Part 1

Proposition (and percentage of economists who agree)

1. A ceiling on rents reduces the quantity and quality of housing available. (93%)
2. Tariffs and import quotas usually reduce general economic welfare. (93%)
3. Flexible and floating exchange rates offer an effective international monetary arrangement. (90%)
4. Fiscal policy (for example, tax cut and/or government expenditure increase) has a significant stimulative impact on a less than fully employed economy. (90%)
5. The United States should not restrict employers from outsourcing work to foreign countries. (90%)
6. Economic growth in developed countries like the United States leads to greater levels of well-being. (88%)
7. The United States should eliminate agricultural subsidies. (85%)
8. An appropriately designed fiscal policy can increase the long-run rate of capital formation. (85%)
9. Local and state governments should eliminate subsidies to professional sports franchises. (85%)
10. If the federal budget is to be balanced, it should be done over the business cycle rather than yearly. (85%)

Table 1

Propositions about Which Most Economists Agree, Part 2

11. The gap between Social Security funds and expenditures will become unsustainably large within the next 50 years if current policies remain unchanged. (85%)
12. Cash payments increase the welfare of recipients to a greater degree than do transfers-in kind of equal cash value. (84%)
13. A large federal budget deficit has an adverse effect on the economy. (83%)
14. The redistribution of income in the United States is a legitimate role for the government. (83%)
15. Inflation is caused primarily by too much growth in the money supply. (83%)
16. The United States should not ban genetically modified crops. (82%)
17. A minimum wage increases unemployment among young and unskilled workers. (79%)
18. The government should restructure the welfare system along the lines of a “negative income tax.” (79%)
19. Effluent taxes and marketable pollution permits represent a better approach to pollution control than the imposition of pollution ceilings. (78%)
20. Government subsidies on ethanol in the United States should be reduced or eliminated. (78%)

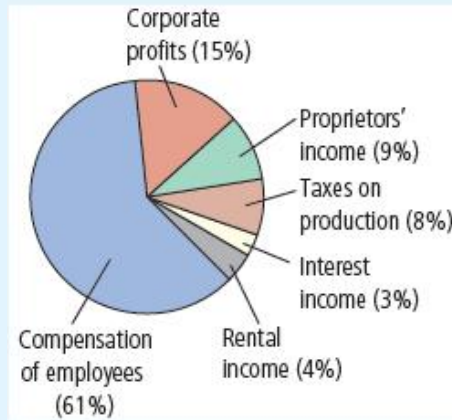
Appendix Graphing: A Brief Review, Part 1

- Graphs serve two purposes:
 - Visually express ideas that might be less clear if described with equations or words
 - Powerful way of finding and interpreting patterns
- Graphs of a single variable
 - Pie chart
 - Bar graph
 - Time-series graph

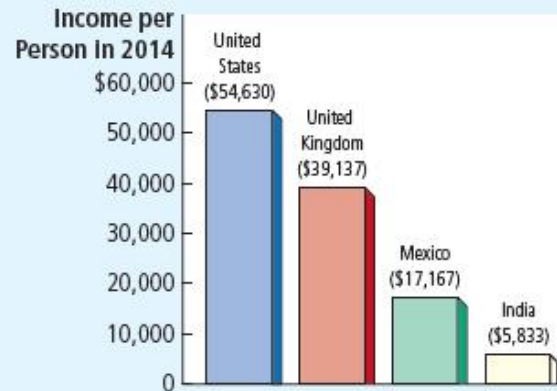
Figure A-1

Types of Graphs

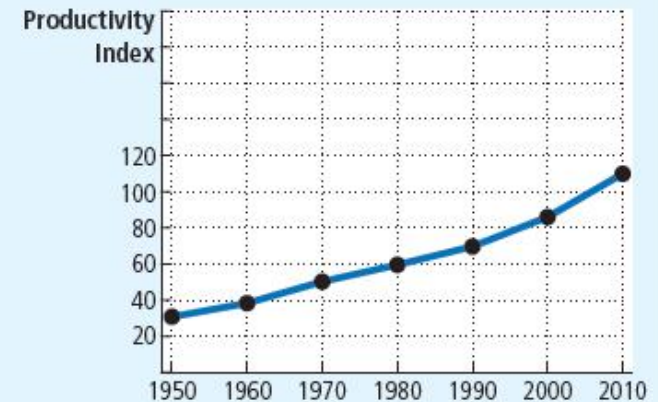
(a) Pie Chart



(b) Bar Graph



(c) Time-Series Graph



The pie chart in panel (a) shows how U.S. national income is derived from various sources.

The bar graph in panel (b) compares the average income in four countries.

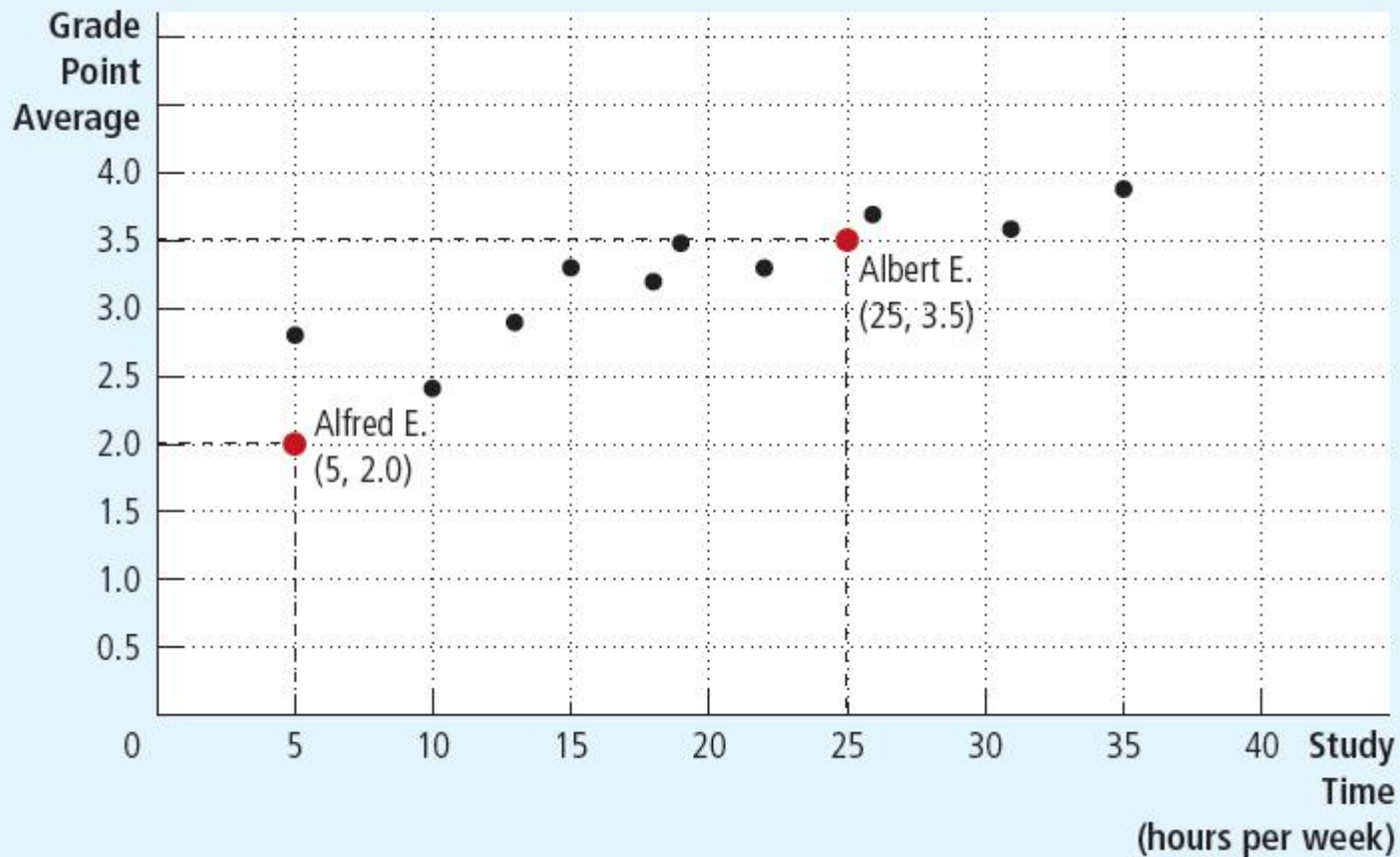
The time-series graph in panel (c) shows the productivity of labor in U.S. businesses over time.

Appendix Graphing: A Brief Review, Part 2

- Graphs of two variables: the coordinate system
 - Display two variables on a single graph
 - Scatterplot
 - Ordered pairs of points
 - x-coordinate
 - Horizontal location
 - y-coordinate
 - Vertical location

Figure A-2

Using the Coordinate System



Grade point average is measured on the vertical axis and study time on the horizontal axis. Albert E., Alfred E., and their classmates are represented by various points. We can see from the graph that students who study more tend to get higher grades.

Curves in the coordinate system

- Data
 - Number of novels purchased
 - Price of novels and Income
- Demand curve
 - Effect of a good's price
 - On the quantity of the good consumers want to buy
 - For a given income

Table A-1

Novels Purchased by Emma

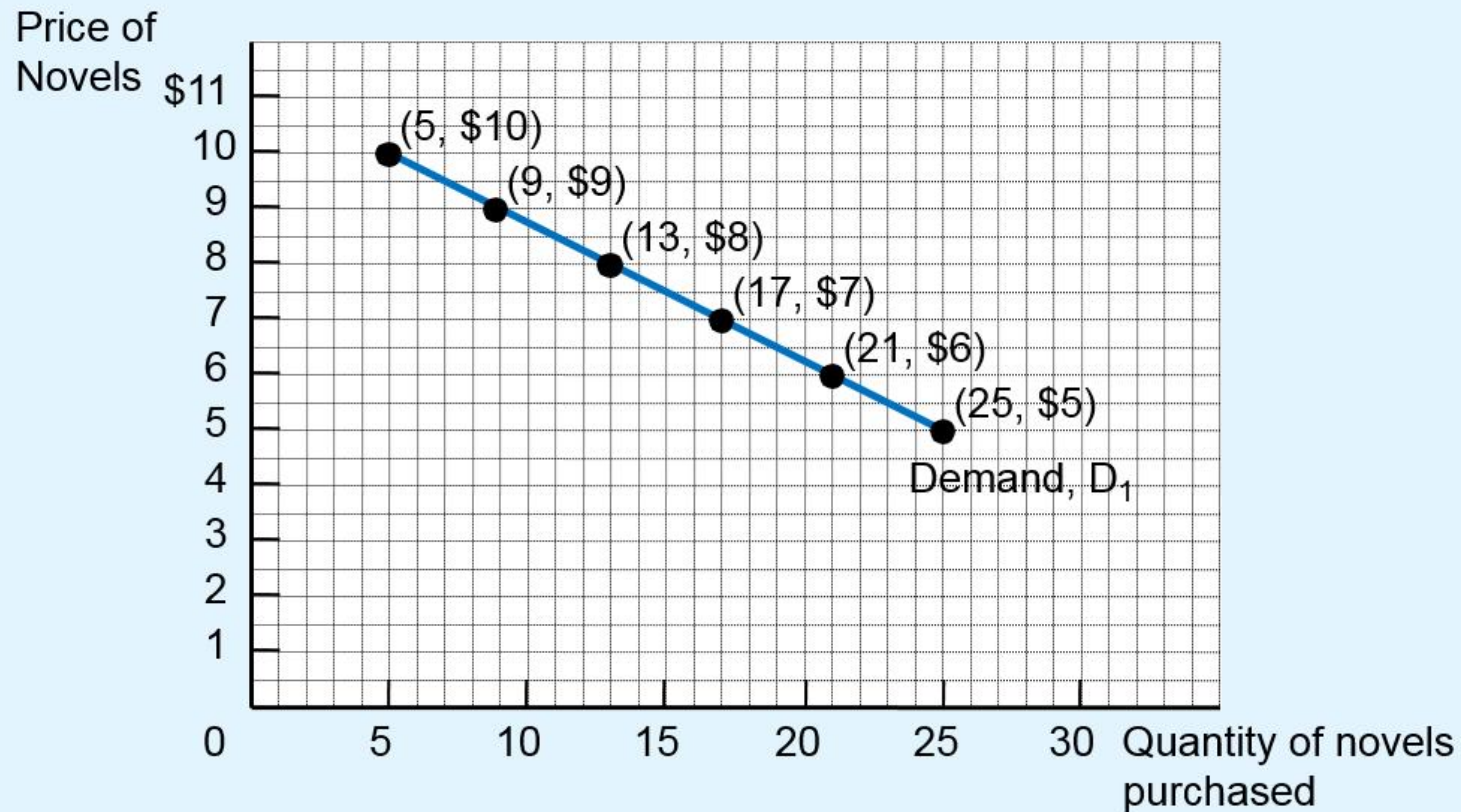
Price	For \$30,000 Income:	For \$40,000 Income:	For \$50,000 Income:
\$10	2 novels	5 novels	8 novels
9	6	9	12
8	10	13	16
7	14	17	20
6	18	21	24
5	22	25	28
	Demand curve, D_3	Demand curve, D_1	Demand curve, D_2

This table shows the number of novels Emma buys at various incomes and prices. For any given level of income, the data on price and quantity demanded can be graphed to produce Emma's demand curve for novels, as shown in Figures A-3 and A-4.

Appendix Graphing: A Brief Review, Part 4

- **Negatively related variables**
 - The two variables move in opposite direction
 - Downward sloping curve
- **Positively related variables**
 - The two variables move in the same direction
 - Upward sloping curve
- **Movement along a curve**
- **Shifts in a curve**

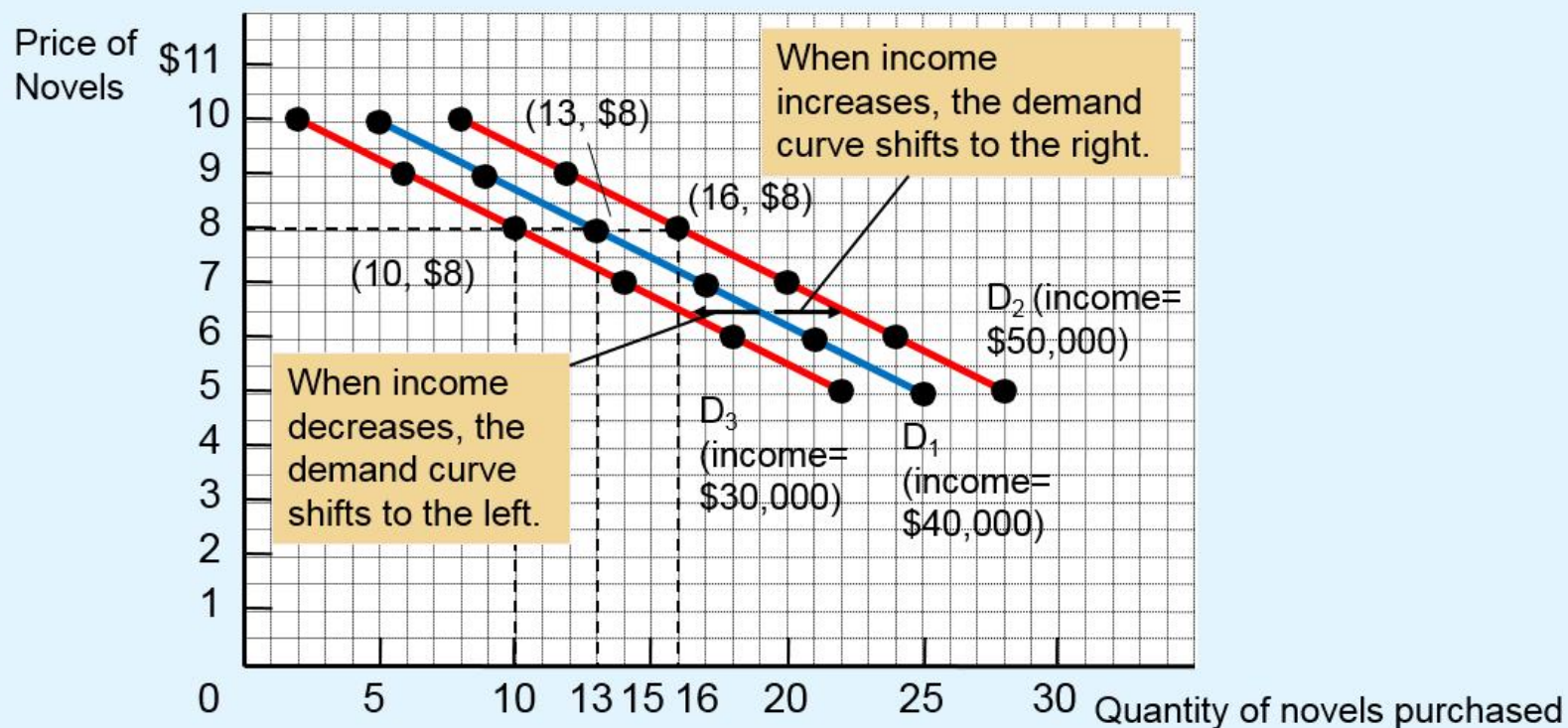
Figure A-3 Demand Curve



The line D_1 shows how Emma's purchases of novels depend on the price of novels when her income is held constant. Because the price and the quantity demanded are negatively related, the demand curve slopes downward.

Figure A-4

Shifting Demand Curves



The location of Emma's demand curve for novels depends on how much income she earns. The more she earns, the more novels she will purchase at any given price, and the farther to the right her demand curve will lie. Curve D_1 represents Emma's original demand curve when her income is \$40,000 per year.

If her income rises to \$50,000 per year, her demand curve shifts to D_2 .

If her income falls to \$30,000 per year, her demand curve shifts to D_3 .

Appendix Graphing: A Brief Review, Part 5

- Slope

- Ratio of the vertical distance covered
- To the horizontal distance covered
- As we move along the line
 - Δ (delta) = change in a variable
 - The “rise” (change in y) divided by the “run” (change in x).

$$Slope = \frac{\Delta y}{\Delta x}$$

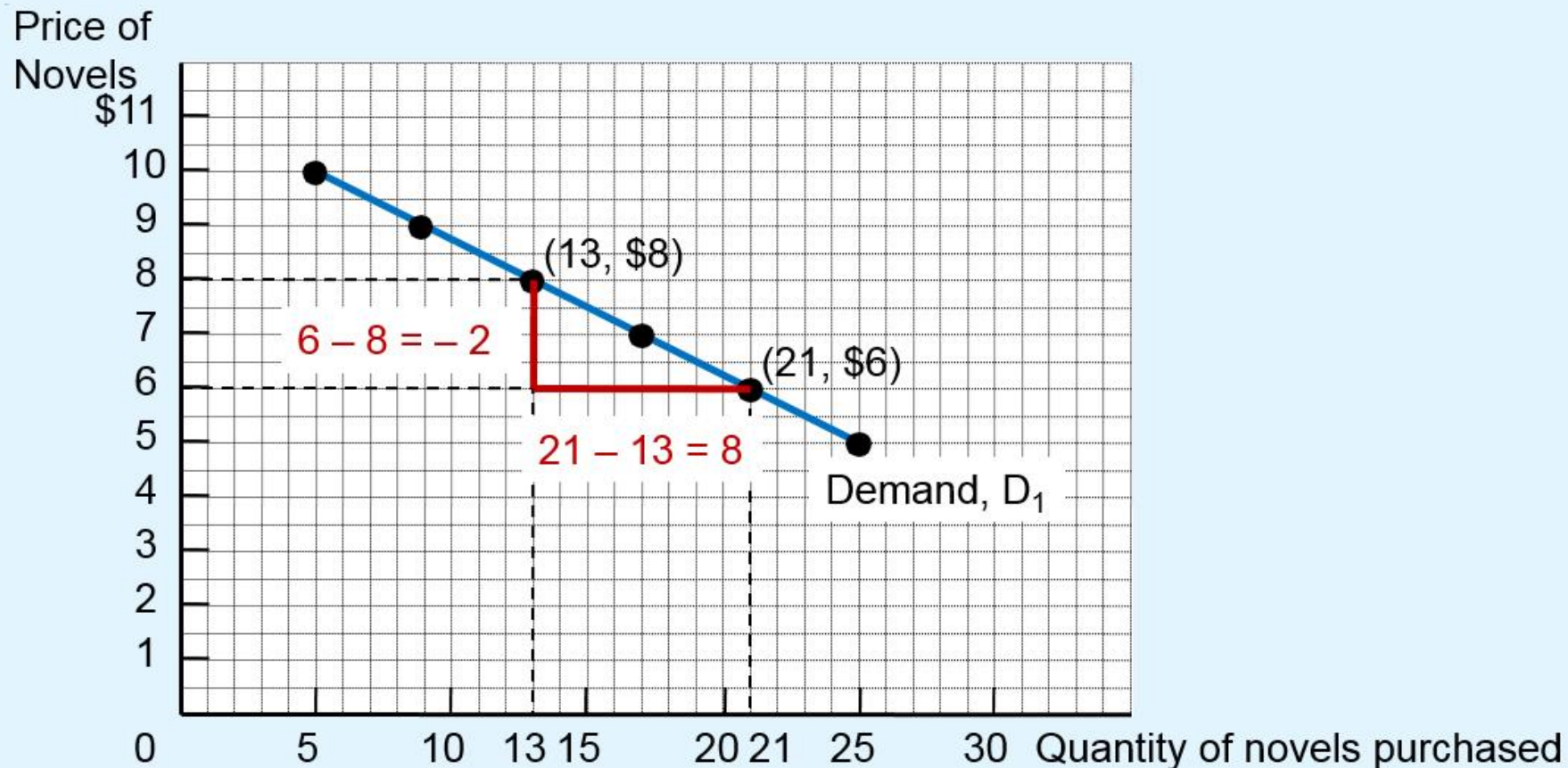
Appendix Graphing: A Brief Review, Part 6

- Slope

- Fairly flat upward-sloping line
 - Slope is a small positive number
- Steep upward-sloping line
 - Slope is a large positive number
- Downward sloping line
 - Slope is a negative number
- Horizontal line: slope is zero
- Vertical line: infinite slope

Figure A-5

Calculating the Slope of a Line



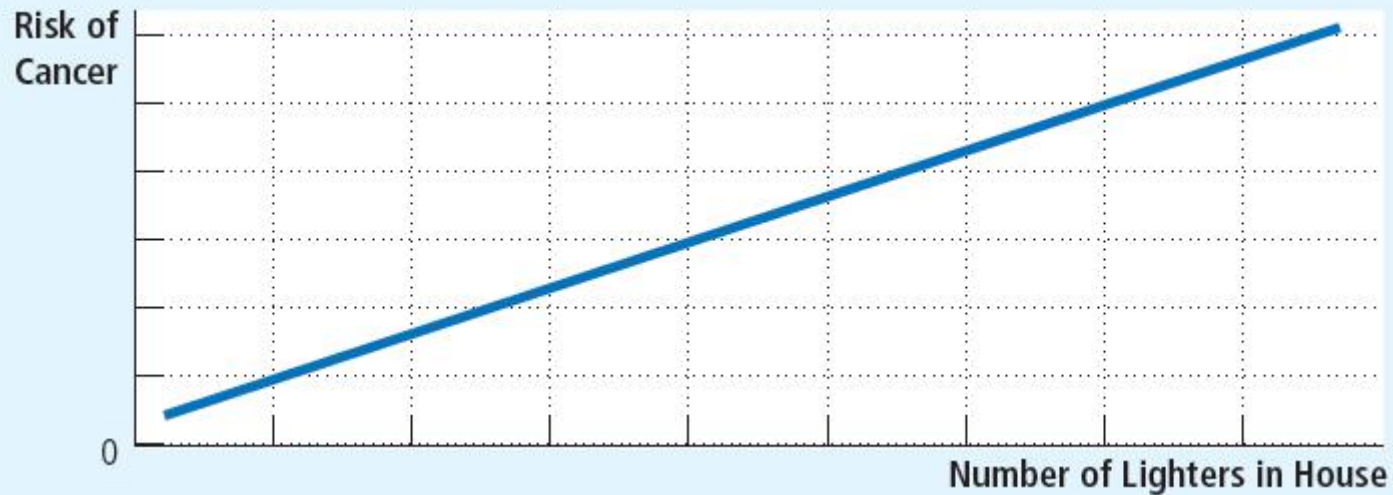
To calculate the slope of the demand curve, we can look at the changes in the x - and y -coordinates as we move from the point (21 novels, \$6) to the point (13 novels, \$8). The slope of the line is the ratio of the change in the y -coordinate (-2) to the change in the x -coordinate ($+8$), which equals $-1/4$.

Appendix Graphing: A Brief Review, Part 7

- Cause and effect
 - One set of events
 - Causes another set of events
 - Omitted variables
 - Lead to a deceptive graph

Figure A-6

Graph with an Omitted Variable



The upward-sloping curve shows that members of households with more cigarette lighters are more likely to develop cancer. Yet we should not conclude that ownership of lighters causes cancer because the graph does not take into account the number of cigarettes smoked.

Appendix Graphing: A Brief Review

- Cause and effect
 - Reverse causality
 - Decide that event A causes event B
 - Facts: event B causes event A

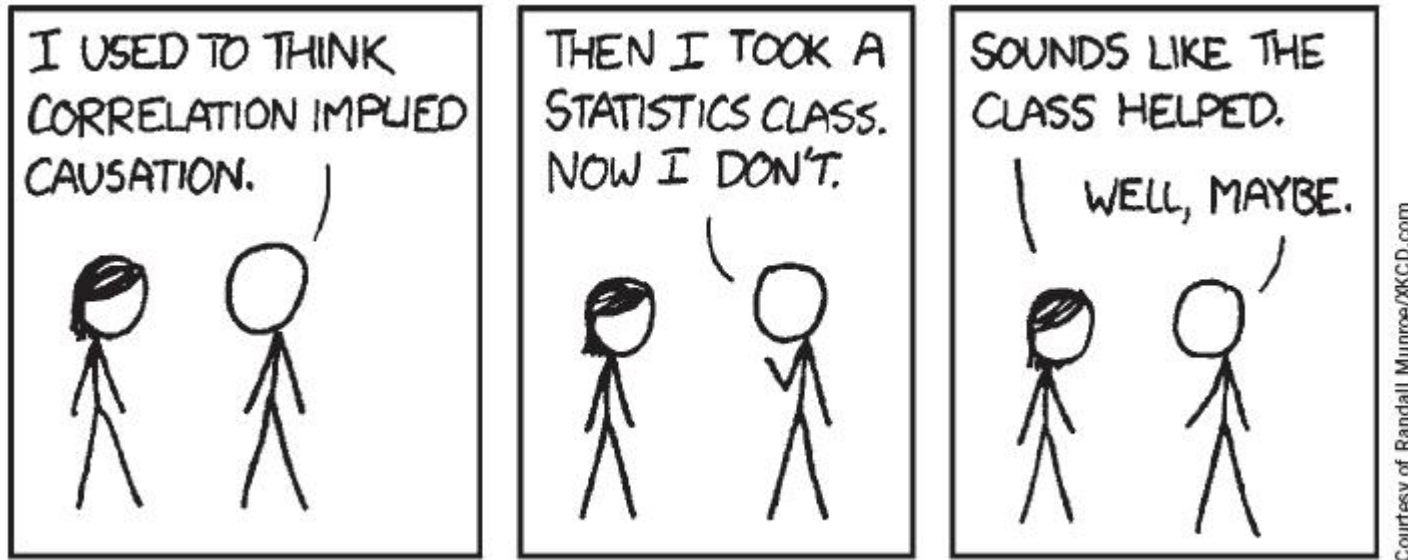
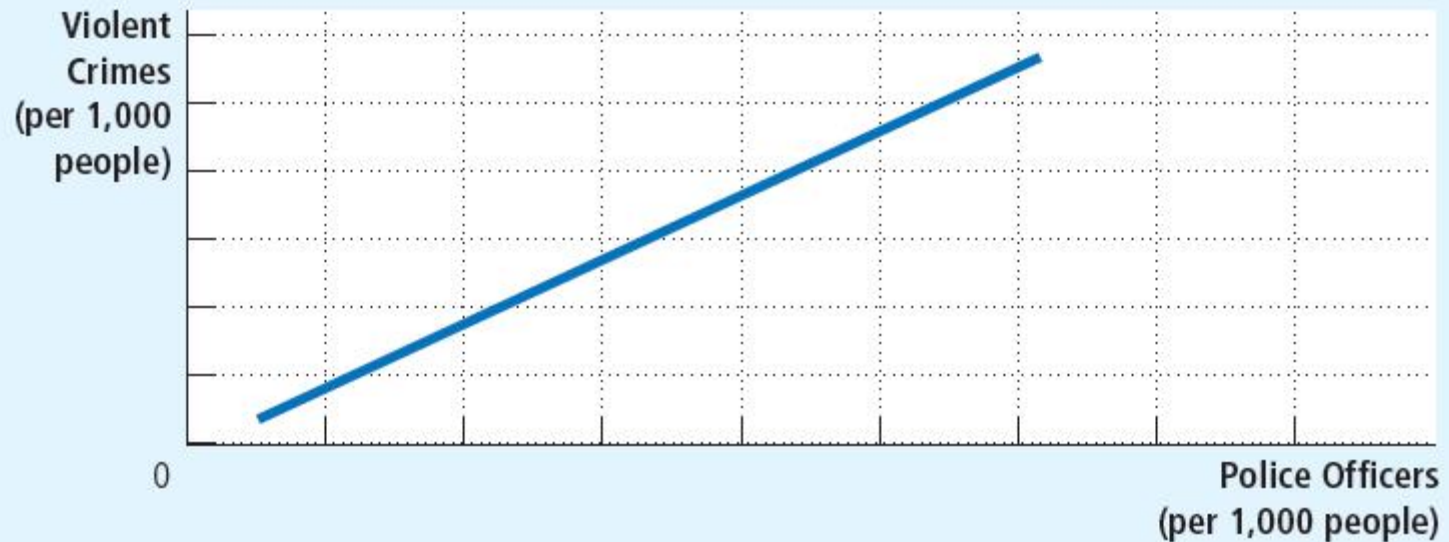


Figure A-7

Graph Suggesting Reverse Causality



The upward-sloping curve shows that cities with a higher concentration of police are more dangerous. Yet the graph does not tell us whether police cause crime or crime-plagued cities hire more police.