

**2. Understanding Adam Smith and the Economy****The Midnight Economist**

Mouse Karl was in one of his sophisticated moods of insightful sneering. "You and Professor Allen," he sneered to Mouse Adam in sophisticatedly insightful manner, "like to laud Adam Smith as the great father figure of modern economics. But Smith was either extraordinarily naive or a deliberate purveyor of capitalistic propaganda. And, in extolling Smith, you and Allen also are either innocent of sense or guilty of little integrity."

"Well!" exclaimed the amiable Adam. "What inspired that outburst? Adam Smith was capable of error and inadequacy. Further, there have been giants in the history of economic analysis both before and after Smith. Still, his influence on serious economic thought has been enormous."

"That has to be a misfortune," snapped Karl, "for Smith basically misled us. He taught that we prosper most when we put ourselves into the grubby hands of business people, painting captains of commerce as paragons of prosperity and philanthropy. In actuality, capitalists are at least as greedy and self-centered as real people."

"You may not be persuaded by Smith's analyses of history, institutions and policies," replied Adam with some impatience, "but do try to get straight what the man was saying. Smith certainly was *not* an apologist for the business community. He observed: 'People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.' He bitterly complained about the common propensities in the business world to try to monopolize and collude, to conspire against workers and the public, to seek governmental protection against competition. Does this suggest that Smith wanted the businessman, any more than the king and his bureaucrats, to be the autonomous master of mankind?"

"I confess that I am confused," conceded Karl. "If businessmen are so grasping, so willing to exploit, how could Smith promote an arrangement of private property and open markets, thereby giving free play to the most unlovely characteristics of people?"

"Market processes, with efficient production and exchange," answered Adam, "do not require that we like one another and are inspired by purity of heart to cooperate with one another. Market institutions and prices provide options and incentives to use our privately-owned resources well. Our intention is to benefit ourselves. But we individually prosper by supplying valuable goods and services to others, led as by 'an invisible hand' to coordinate our activities to the benefit of all."

"I see," said Karl contritely, "that there is more sense and subtlety in Smith than I had supposed. Smith understood that men are not angels. But with appropriate ground rules of the market, we can--quite amazingly--channel acquisitive instincts and aggressive inclinations to mutual advantage and the common good."

**Questions for Thought and Discussion:**

1. If an analyst has made mistakes in one area, does that demonstrate whether his ideas in other areas are either correct or incorrect? Why do you think people so often attack the analyst rather than the analysis?
2. Is a system of private property rights and open markets better described as based on selfishness or as providing protections from the selfishness of others?
3. Why, in market systems, do people frequently voluntarily deal with others they may not like (e.g., sellers selling to buyers they may dislike)? How do market systems make discrimination against productive members of less popular groups costly?

## Chapter 2:

1. Which of the following goods are scarce?

- a. garbage
- b. salt water in the ocean
- c. clothes
- d. clean air in a big city
- e. dirty air in a big city
- f. a public library

**Answer: Scarce goods are those that we would like to have more of, but given limited resources, we must make choices. The following goods are all scarce: c. clothes; d. clean air in a big city; f. a public library. Note that garbage is not a good, but a reduction in the amount of garbage would be a good.**

2. Explain the difference between poverty and scarcity.

**Answer: Being poor means that you have access to few resources, which limits the goods and services you consume. Scarcity means you don't have enough resources to do everything you want to do, so you have to make choices. Everyone experiences scarcity, because we can always think of more things that we want than we can produce with our resources.**

3. The automotive revolution after World War II reduced the time involved for travel and shipping goods. This innovation allowed the U.S. economy to produce more goods and services since it freed resources involved in transportation for other uses. The transportation revolution also increased wants. Identify two ways the car and truck revealed new wants.

**Answer: The car freed Americans to travel and helped to create the tourism business. New wants included motels, resorts, and theme parks. The increased importance of auto and truck transportation also created the desire for more and better roads and highways. The car also allowed people to live farther from where they worked, so that people wanted more land and newer houses.**

4. The price of a one-way bus trip from Los Angeles to New York City is \$150.00. Sarah, a school teacher, pays the same price in February (during the school year) as in July (during her vacation), so the cost is the same in February as in July. Do you agree?

**Answer: Since Sarah's time is probably worth more during school (it would cost part of her salary), the opportunity cost of the trip is higher in February than in July.**

5. McDonald's once ran a promotion that whenever St. Louis Cardinal's slugger Mark McGwire hit a home run into the upper deck at Busch Stadium, McDonald's gave anyone with a ticket to that day's game a free Big Mac. If holders of ticket stubs have to stand in line for ten minutes, is the Big Mac really "free?"

**Answer: No. First of all, McDonald's uses scarce resources to produce the burger, so it's not "free" to them. Secondly, if people value their time at all, ten minutes standing in line to get the burger carries an opportunity cost equal to the value to them of whatever else they could have done with the ten minutes. Also included is the opportunity cost of driving to McDonald's to get the "free" Big Mac.**

6. List some things that you need. Then ask yourself if you would still want some of those things if the price were five times higher. Would you still want them if the price were 10 times higher?

**Answers will vary. The main point here is to recognize that how much of something you "need" depends on what you must give up to get it. Would you be willing to pay \$10 or even \$20 for a hamburger? Would you be willing to pay \$40 or even \$80 for admission to a new blockbuster film?**

7. List the opportunity costs of the following:

- a. going to college
- b. missing a lecture
- c. withdrawing and spending \$100 from your savings account, which earns 5 percent interest annually
- d. going snowboarding on the weekend before final examinations

**Answer: The opportunity cost of an activity is always the value of the best alternative given up.**

**a. The opportunity cost of going to college includes not just expenses such as tuition and books, but also the lost income that could have been earned while attending college. On the other hand, room and board expenses should not be included in the calculation of opportunity cost, if those expenses are equivalent to that which would be incurred in the best foregone alternative to attending college.**

**b. The opportunity cost of missing a lecture includes the potential damage to one's grade in a course from not being present while important subject material is covered, as well as the knowledge's foregone value in the "real world." The magnitude of the opportunity cost depends partly on how much essential information the instructor provides during the missed class session.**

**c. The opportunity cost of withdrawing and spending \$100 from your savings account is the 5% interest which could have been earned annually if the funds remained in the savings account.**

**d. The opportunity cost of going snowboarding on the weekend before final examinations is likely to include the value of lost study time and possibly a lower course grade, as well as the explicit costs of the snowboarding trip, as well as the financial costs.**

8. Which of the following activities require marginal thinking, and why?

- a. studying
- b. eating
- c. driving
- d. shopping
- e. getting ready for a night out

**Answer: Marginal thinking involves incremental changes to a plan of action. All of the activities listed involve marginal thinking. When studying, one chooses whether or not to study for one more hour; when eating, one chooses whether or not to consume one more portion; when driving, one chooses whether or not to travel one more mile (or one more mile per hour); when shopping, one chooses whether or not to buy one more item or visit one more store; when getting ready for a night out, one chooses whether or not to spend another minute styling one's hair.**

9. Should you go to the movies this Friday? List the factors that affect the possible benefits and costs of this decision. Explain where uncertainty affects the benefits and costs.

**Answer: The benefits of going to the movie include the happiness you receive from being entertained and the social interaction with friends. These are uncertain because they depend on the quality of the movie and your companionship. Costs include the price of the movie ticket and the value to you of the time you give up to go to the movie. Uncertainty also affects your costs since you do not know for certain what you would get out of your alternative use of your time.**

10. Explain why following the rule of rational choice makes a person better off.

**Answer: As long as a person follows the rule of rational choice, they will always make decisions where they expect to gain more in benefits than they have to give up in costs. They will always be better off in this case. However, if a person's expectations about benefits or costs are wrong, their decisions may still turn out to make them worse off.**

11. Which of the following are positive incentives? Negative incentives? Why?

- a. A fine for not cleaning up after your dog defecates in the park
- b. A trip to Hawaii paid for by your parents or significant other for earning an A in your economics course.

- c. A higher tax on cigarettes and alcohol.
- d. A subsidy for installing solar panels on your house.

**Answer: Positive incentives are those that either increase benefits or reduce costs and thus tend to increase the level of an activity. Both of the following are examples of positive incentives: b. a trip to Hawaii paid for by your parents or significant other for earning an “A” in your economics course; d) a subsidy for installing solar panels on your house. Negative incentives either reduce benefits or increase costs, and thus tend to decrease the level of the related activity or behavior. Both of the following are examples of negative incentives: a. a fine for not cleaning up after your dog defecates in the park; c. a higher tax on cigarettes and alcohol.**

12. Modern medicine has made organ transplants a common occurrence, yet the number of organs that people want far exceeds the available supply. According to CNN, ten people die each day because of a lack of transplantable organs like kidneys and livers. Some economists have recommended that an organ market be established through which doctors and others could pay people for the right to use their organs when they die. The law currently forbids the sale of organs. What do you think of such a proposal? What kind of incentives would an organ market provide for people to allow others to use their organs? What would happen to the supply of organs if, instead of relying on donated kidneys, livers, and retinas, doctors and hospitals could bid for them? What drawbacks would a free market in organs have? Have you made arrangements to leave your organs to your local organ bank? Would you do so if you could receive \$50,000 for them?

**Answer: An organ market that provided cash rewards would likely increase the supply of available organs, especially if people from poor countries were allowed to participate. It would also allow people in dire need of a particular organ to go into the market and purchase it rather than put their name on a waiting list. Many people, however, feel that a person’s body parts have a special status and should not be offered for sale. Some people worry that only the rich would get organs in a market while others fear that a market would result in people being taken advantage of or even murdered for their valuable organs. They prefer the current system where only donated organs are accepted, and are allocated by physicians according to need.**

13. Throughout history, many countries have chosen the path of autarky, choosing to not trade with other countries. Explain why this path would make a country poorer.

**Answer: Denying trade possibilities also eliminates the possibility of specialization. In autarky, a country must produce everything it consumes. Scarce resources will be wasted producing goods with a higher opportunity costs. Trading would allow the country to produce more with the same resources.**

14. Farmer Fran can grow soybeans and corn. She can grow 50 bushels of soybeans or 100 bushels of corn on an acre of her land for the same cost. The price of soybeans is \$1.50 per bushel and the price of corn is \$.60 per bushel. Show the benefits to Fran of specialization. What should she specialize in?

**Answer: The opportunity cost of growing soybeans is the lost value because Fran can't grow corn worth \$60. The opportunity cost of growing corn on her land is the lost opportunity to grow and sell soybeans, which equals \$75. Fran should specialize in soybeans, which is the crop with the lowest opportunity cost. For each acre of corn Fran converts to soybeans, she will gain \$15.**

15. Which region has a comparative advantage in the following goods:

- a. wheat: Colombia or the United States?
- b. coffee: Colombia or the United States?
- c. timber: Iowa or Washington?
- d. corn: Iowa or Washington?

**Answers: a. The United States has a comparative advantage in wheat production; b. Columbia has a comparative advantage in coffee production; c. Washington, with its many acres of forests, has a comparative advantage in timber; d. Iowa, with its many acres of fertile soil, has a comparative advantage in corn production. In each case, the area with the lowest opportunity cost of producing a particular good had the comparative advantage in producing it.**

16. Why is it important that the country or region with the lower opportunity cost produce the good? How would you use the concept of comparative advantage to argue for reducing restrictions on trade between countries?

**Answer: It is important that a country or region specialize in the production of a good for which it has the lower opportunity cost in order to make the best use of available resources. By specializing in the production of a good for which a country has a comparative advantage and then trading for other desirable goods, a country is able to gain the greatest benefit from its available resources. Trade restrictions force countries to specialize less, and thereby raise the opportunity cost of production, and reduces total output.**

17. People communicate with each other in the market through the effect their decisions to buy or sell have on prices. Indicate how each of the following would affect prices by putting a check in the appropriate space.

- a. People who see an energetic and loveable Jack Russell Terrier in a popular TV series want Jack Russell Terriers as pets. The price of Jack Russell Terriers \_\_\_ Rises \_\_\_ Falls.
- b. Aging retirees flock to Tampa, Florida, to live. The price of housing in Tampa \_\_\_ Rises \_\_\_ Falls.
- c. Weather-related crop failures in Colombia and Costa Rica reduce coffee supplies. The price of coffee \_\_\_ Rises \_\_\_ Falls.
- d. Sugar cane fields in Hawaii and Louisiana are replaced with housing. The price of sugar \_\_\_ Rises \_\_\_ Falls.

- e. More and more students graduate from U.S. medical schools. The wages of U.S. doctors\_\_\_\_  
Rises \_\_\_\_ Falls.
- f. Americans are driving more and they are driving bigger, gas-guzzling cars like sports utility vehicles.  
The price of gasoline \_\_\_\_\_ Rises \_\_\_\_\_ Falls.

**Answers: a. Price of Jack Russell Terriers rises; b. Price of housing in Tampa rises; c. Price of coffee rises; d. Price of sugar rises; e. Wages of U.S. doctors fall; f. Price of gasoline Rises.**

18. Prices communicate information about the relative value of resources. Which of the following would cause the relative value and, hence, the price, of potatoes to rise?

- a. A Fungus infestation wipes out half the Idaho potato crop.
- b. The price of potato chips rises.
- c. Scientists find that eating potato chips makes you better looking.
- d. The prices of wheat, rice, and other potato substitutes fall dramatically.

**Answers: a., b., and c. would cause increases in the relative value and price of potatoes. In d., a reduction in the prices of potato substitutes would make alternatives more attractive and reduce the relative value and price of potatoes.**

19. Imagine that you are trying to decide whether to cross a street without using the designated crosswalk at the traffic signal. What are the expected marginal benefits of crossing? The expected marginal costs? How would the following conditions change your benefit–cost equation?

- a. The street was busy.
- b. The street was empty and it was 3 A.M.
- c. You were in a huge hurry.
- d. A police officer was standing 100 feet away.
- e. The closest crosswalk was a mile away.
- f. The closest crosswalk was 10 feet away.

**Answer: The expected marginal benefit of crossing a street is the ability to get to the other side quickly, rather than walk to the crosswalk and wait for the signal to change. The expected marginal cost is the risk of being struck by a car or being ticketed for violating pedestrian laws.**

- a. The busier the street, the greater the risk of being struck by a passing car and thus the greater the expected marginal cost.**
- b. The more empty the street, the lower the risk of being struck by a passing car and thus the lower the expected marginal cost.**

- c. The more in a hurry you are, the greater the expected marginal benefit of crossing the street rapidly.
- d. The presence of a police officer nearby raises the expected marginal cost of crossing away from the crosswalk by increasing the likelihood of being fined for your illegal actions.
- e. The further away the nearest crosswalk, the greater the expected marginal benefit of crossing illegally, in order to avoid a long walk.
- f. The closer the nearest crosswalk, the lower the expected marginal benefit of crossing illegally.

### Chapter 3

1. What are the three basic economic questions? How are decisions made differently in a market economy than in planned economies?

**Answer: The three basic economic questions are: What is to be produced? How are these goods to be produced? For whom are the goods produced? Scarcity requires that these questions be addressed in some way by every economy. Market economies answer these questions in a decentralized way through the interaction of millions of buyers and sellers. In command economies, decisions are made largely through planning boards. The manner in which an economic system answers these questions helps determine the allocation of limited resources.**

2. Recently the American Film Institute selected *Citizen Kane* as the best movie of all time. *Citizen Kane* is a fictional psychological biography of one of the most powerful newspaper publishers in history, William Randolph Hearst. *Avatar* has made the most money of any film in history. Unlike *Avatar*, *Citizen Kane* was not a box office success. Do you think Hollywood will make more movies like *Avatar* or like *Citizen Kane*? Why?

**Answer: Hollywood will probably make more movies like *Avatar* because of consumer sovereignty. Consumers, “voting” with their dollars have shown they want movies like *Avatar*. Since movie studios are in the business to make money, not simply movies, they will produce what the consumers want, not what the critics like.**

3. As women's wages and employment opportunities have expanded over the past 50 years, Americans have purchased more and more labor-saving home appliances like automatic washers and dryers, dishwashers, and microwave ovens. Do you think these phenomena are related? Could higher wages and better job opportunities lead to a more capital-intensive way of performing household chores? Explain.

**Answer: The relevant question here is how to produce household goods and services, such as meals and laundry services. Since in most homes women do most of the housework, an increase in their earnings and job opportunities outside the home raises the opportunity cost of their time. Such an increase in the cost of labor would likely cause households to economize on labor and substitute capital, in the form of household appliances.**



sort of model will reflect its intended use; abstracting from those aspects that are unimportant to the question at hand to better focus on the important considerations you want to investigate.

7. A useful illustration of how models come to be accepted in science is the replacement of the Ptolemaic geocentric model of the solar system (everything revolves around the earth at the center) with the Copernican heliocentric model of the solar system (everything revolves around the sun). With the development of improving telescopes, more of the solar system could be seen. But as a result, it eventually became impossible to construct a geocentric model that was consistent with empirical observations, while those observations were consistent with a heliocentric model, leading to the replacement of one previously accepted model with another.

8. The text's emphasis on empirical testing of theories can be reinforced by getting students to see that a major part of economic research is the search to design tests that will discriminate among different hypotheses proposed to explain something. When something is consistent with multiple hypotheses, we don't have much of an idea of what is going on, so that a test that distinguishes among hypotheses in that circumstance can be very valuable.

9. I find rain dancing to be a good illustration of confusing correlation with causation. If a group of people decides that a deity that brings them rain needs its anger appeased by rain dancing at the beginning of the normal rainy season and they dance long enough, it will rain. It will not rain because they danced, but because the rainy season started. But once a belief in the necessity of rain dancing has begun, it can be very hard to change, since every time they dance (if they dance long enough), it rains.

10. Weather can be used to illustrate problems of establishing causation. Since heaters come on in the winter and air conditioners in the summer, one could conclude that heaters cause the house to be colder and air conditioners cause it to be hotter. Similarly, chill drafts can be blamed for catching a cold in the winter (since looking back, it is easy to remember being exposed to some recent draft in the winter), even though the more scientific reason is that you are inside more, closely exposed to more of other people's "bugs," in the winter than in the summer.

11. In addition to the fallacy of composition illustrations in the text, you could add leaving early to beat the traffic (or arriving early to beat the crowd) and cutting your price to take sales from rivals (which doesn't work if all rivals lower their prices).

12. Emphasize that disagreements about economic policy can occur even when people agree on the list of benefits and costs of an action or policy (positive statements), as long as they disagree about the relative weights or values to place on those outcomes (normative statements). This is often the case when people perceive conflicts between freedom and fairness (the text example). President Harry Truman's famous complaint that he couldn't find a one-armed economist (who would tell him which policy was the right one), but only the two-armed kind, whose policy answers were always on the one hand (the benefits)...and on the other hand (the costs)..., forcing him to decide whether the list of benefits was more valuable than the list of costs, is also an excellent illustration.

## **Chapter 2: Economics: Eight Powerful Ideas**

1. It is crucial to clearly discuss the basic paradigm that underlies all that we do in economics. Show what we mean by scarcity; how scarcity implies the necessity to making choices; how choices imply the bearing of opportunity costs; and how, when combined with the assumption of self-interest, that results in the Rule of Rational Choice: whatever the choice or action, do "it" if and only if  $E(MB) > E(MC)$ . This, in turn, when continued as long as that inequality holds, becomes the basic intuition leading to what economists define as equilibrium (there is no incentive to change your behavior, absent a change in incentives). When this is clear, it can become the focus for student retention (e.g., "How is this technique or diagram an application of the rule of rational choice?") and there is almost no end to the examples and

illustrations that can be made to show students the applicability of the economic way of thinking.

2. A useful way to integrate student understanding of how value is created and the crucial role of entrepreneurship in the process is to show students that all forms of creating value involve one or more of the following: Resources being moved from less to more valuable forms (what we typically think of as production does not create atoms; it simply rearranges them); from less to more valuable locations (the value created in transportation); from less to more valuable time periods (the value created in speculation); or from lower valuing to higher valuing uses and/or users (the value created in exchange). In each case, there is a large aspect of entrepreneurship in discovering higher valued forms, locations and times, and higher valuing users than others have discovered. Further, this reinforces the fact that the incentives facing entrepreneurs are crucial to the value creating process.

3. A good way to illustrate entrepreneurship to students is to discuss in class how each of them is an entrepreneur when it comes to discovering the best way to “produce” higher grades in the course. Different people learn better in different ways, handle pressure differently, have different attitudes toward the risk of getting a lower grade if they do less well than expected, different time constraints, etc. Further, not all courses are the same, and what works well in one course (e.g., memorization of terms) may not work well in another (e.g., one requiring application). Should you always go to class? Is it more effective to read before class or after class or not read at all? Should you use a study guide? Should you study in groups? Finding answers for all these questions is entrepreneurial in nature.

4. A good way to get students thinking about scarcity is to ask them what is scarce when one is dieting. We usually think of food as being scarce, yet in this case, it is healthier food (with fewer calories rather than more) and self-restraint in eating that are scarce.

5. An unusual, literate illustration of scarcity and opportunity cost comes from Homer’s *Odyssey*. In it, Calypso, the sea princess and immortal child of the gods, envies Ulysses’ mortality, because he gets to make decisions that will have real consequences, particularly life or death consequences (Calypso will live no matter what she chooses to do). That makes Calypso feel that Ulysses’ life is more meaningful than hers.

6. A good opportunity cost illustration is that of celebrities donating their time and services for “good causes.” If they are turning down an alternative “gig” to show up, the foregone income is an opportunity cost to the celebrity; but if they are not turning down a potential paid opportunity to appear, the opportunity cost of them appearing may be far less than their “asking” price for an appearance.

7. Since this chapter introduces appropriate handling of the concept of opportunity cost, it needs to be emphasized that costs attach to choices, not goods. One effective way to do this in class is to ask “What is the cost of a car?” One can then lead students to see that their answers do not make sense without a verb describing what action involving a car is being contemplated. One can speak of the varying costs of different ways of *verbing* (buying, owning, driving, insuring, borrowing, selling, etc.) a car, but not sensibly of the cost of a car.

8. A good, close-to-home illustration of opportunity cost for students is to discuss with them why there is less dating during finals week, then leading them to see that the reason is that the opportunity cost of time for dating is higher during finals week than at other times of the school year. Another education illustration that can get their attention is to ask why people ever stop going to school, and leading them to see that the reason is that the opportunity cost of additional time spent in education rises, the greater the market value of the skills and knowledge you already have. At some point, it becomes too costly to continue going to school. The same reason helps explain why those who go straight from graduation to MBA programs typically go during the day, while experienced, working managers (with higher opportunity costs of foregoing daytime jobs than those who have just graduated) tend to go in the evening.

9. A good way to illustrate opportunity cost to students is to ask them whether a human life is of infinite value. Someone in class is bound to say yes. Then you can show them that saving lives in “costly” ways can result in a net reduction in lives saved, if those resources would have been spent instead on lower cost ways of saving lives. This can also be presented in terms of a production possibilities curve with lives saved in different ways on the axes, to show the tradeoffs involved.

10. There are several ways to illustrate the importance of the rational behavior assumption of economics. One way would be to show how traditional detective work is an example--the search for a weapon, an opportunity and a motive presume the criminal is rational. Another way is to ask students for illustrations that clearly violate rational choice, where the difficulty they have coming up with such illustrations will help reinforce the power of the assumption of rationality in predicting behavior.

11. A potential mugging illustrates the importance of focusing on the relevant margin with muggers. Say you are walking through Central Park with \$200 in your wallet. When someone tries to mug you, you don't start negotiating: You can have \$200 if you leave me alone, \$150 if you rough me up a little, \$100 if you take a swipe at me with a knife...How much a mugger will take and how he will treat you are not choices under your control. In this situation, you basically have an all-or-nothing choice between handing over the money and taking your chances by resisting. This illustration can then be extended to other examples of the often crucial importance of focusing on the relevant margin (the choice actually being made).

12. An interesting illustration of marginal incentives is the case of bounty hunters in the Old West. If a posse is chasing a bandit who just robbed the local bank, they do not have incentives to catch the bandit if they can more easily chase him into another territory where he will rob other areas' banks. The posse has an incentive to stop chasing him at that point. However, a bounty hunter, faced with a “Wanted: Dead or Alive” reward, knows that all his previous costs are sunk, and continues to chase, as long as the expected additional costs of catching the bandit from that moment on are less than the benefit of the reward. Similarly, a railroad company (as in “Butch Cassidy and the Sundance Kid”) would want to hunt them down, since chasing them away would only result in more robberies of their trains in other locations.

13. You can illustrate the role of incentives by discussing with your class whether you should reward marginal exam improvement by giving higher grades to the students who improve the most from their first exam results to the final. There are conflicting incentives facing students here. There are great incentives to improve (you don't stop studying because you think you will get a C no matter what you do on the final), but such a grading system would also give students incentives to do terribly on the first test, so that they could improve more.

14. An analogy to the question of whether we want zero pollution discussed in the text is to ask whether the goal of education is zero ignorance. The answer is no, and for the same reason. The cost of eliminating some forms of ignorance is greater than the benefits. This can also be extended to show that one of the advantages of specialization and exchange is the vast saving in the costs of becoming informed.

15. There are many illustrations that can be used to emphasize the importance of recognizing differences in the incentive structures that are faced by different parties. Examples include why your athletic team's coach wants you in better shape than you do (he gets some of the benefits, but none of the costs), why your mother wants you to get better grades than you do (she gets some of the benefits, but none of the costs), why military draftees tend to be used inefficiently (those in charge need not incur the true opportunity cost of using human resources), why a dictator might choose to move a society inside its otherwise attainable production possibilities curve (they can benefit themselves by policies which hurt their citizens), why damage deposits arise as a way to make renters act more like they were owners (otherwise renter damage costs will be imposed on owners), etc.

16. A birdwatching analogy can help students see the usefulness of the economic way of thinking. Just

as training and experience shows birdwatchers “where to look” and “what to look for” to spot various birds (everything from what a bird looks and sounds like to where they tend to nest, what they feed on and when, when and where they migrate, etc.), the economic way of thinking shows students to look at decision-makers’ incentives to “see” the predictable consequences of actions and policies. This is why those trained in economics can often find predictable policy consequences others are unable to grasp very easily (for example, the predictable consequences of price controls).

17. Another analogy that can help students understand the power of the economic way of thinking is to the framing of a building: Just as buildings will not be structurally sound if the framing is not done correctly, economic analyses will be faulty unless they build on the framework of the set of incentives faced by the relevant decision-makers. This is why economists spend so much effort trying to properly specify the incentives facing actors involved, because predictions that are inconsistent with actors’ incentives are likely to be incorrect, and more so the longer the train of reasoning (the larger the building) that is built on a poor foundation.

18. In talking about incentives, one helpful illustration is to show that sometimes it is cheaper to make mistakes than to be right. This is true whenever the costs associated with being wrong a certain fraction of the time are expected to be low compared to the costs of avoiding such mistakes (although these expectations themselves may prove incorrect). Examples run the gamut from dating (“you’ve got to kiss a lot of frogs before you find your prince”) to exams (you don’t generally want to incur the costs to get every problem on an exam correct, because you can miss some and still get an A) to buying “off brands” when shopping (where you trade off lower prices for greater risks of unsatisfactory product performance).

19. A good way to get students to see that incentives matter is in terms of gold-wired or copper-wired electric motors. Gold is a better conductor of electricity, so that it is more efficient from an engineering perspective, but since gold is so much more expensive than copper, copper is typically more economically efficient for wiring, which is why copper is typically used for that purpose. However, there are cases, such as in satellites, where gold wiring is used to conserve on even scarcer orbital lift capacity (to carry the necessary power source or solar power collection devices).

20. One way of introducing the issue of specialization and exchange vs. self sufficiency is to ask students why people are always portrayed as being so self-sufficient in Westerns, then lead them to see that the reason was that when the cost of trading (particularly transportation) was very high, the cost of trading outweighed the gains from specialization. However, when the costs of trading become lower, increasing specialization and trade is the result.

21. A useful connection between property rights and specialization and trade can be made by asking students whether there would be any bicycles produced if someone owned a bike only as long as he or she was sitting on it. Bicycle production would stop because no one would be willing to pay the cost of producing a bicycle for the benefit of just one ride.

22. An interesting ethics question can be used in class as an example of specialization and exchange, by asking why students aren’t allowed to buy papers. The reason is that the point of education is more that of teaching the process of how to do something than the final product, per se. Buying a paper allows students to “produce” a paper without learning anything, which is the real purpose of writing papers (where the final product is used to judge the extent of learning). If all that mattered was the final product (say, a paper), and who did it and how were unimportant (as is typical in most market purchases of goods and services), then purchasing a paper would be fine.

23. A good analogy to the importance of the price mechanism as a form of communication is foreign travel, where one does not speak the language of the country. Ask if any of the students have ever traveled in a country where they did not speak the language. Ask one of those who has how well they found out what they wanted to know and how well they did at achieving their objectives as a result. For

most, the honest answer is not so well. For those who insist they did just fine, ask them how often it was because foreigners knew English, and how often it was because prices were clearly indicated in those countries.

24. Since most students have heard that market systems built on private property rights are based on the selfishness of people, it is often interesting to ask students whether market systems are based on people's selfishness or on protecting people from others' selfishness. They will tend to answer "selfishness." Then you can show that property rights, while they do allow you to do "selfish" things with your own property, also prevent others from selfishly using or abusing your property without your consent or without paying sufficient compensation to acquire your consent. Given that each of us is vastly outnumbered by "others," property rights' protections against others' selfishness may well be its most important function.

25. One way to get across the idea that our wants will always exceed our productive abilities is to imagine a genie who gives students a minute to write down their wishes, which he then grants, with the proviso that they come back in 6 months. Would students discover new wishes in the meantime? If they did it again (and again...), would they continue to discover new wishes? If that answer is yes, we cannot produce our way out of scarcity.

26. Another good example of opportunity cost is the cost of going to a particular class meeting. For example, does it include the cost of driving to campus? (It depends—would they have driven even if they skipped that particular class) Does it include the cost of depreciation? (Yes, for mileage related depreciation; no, for time related depreciation—unless it is Dad's car). Does it include one day's worth of insurance? (No—you are on the hook for this anyway) Does it include gas? (Yes, if you are paying for it; no, if Dad is paying for it)

27. Choosing a major is a useful example of specialization and trade (including why, in markets systems, no one needs to force students to choose something they are relatively good at for career preparation) that students can easily identify with.

### **Chapter 3: Scarcity, Tradeoffs, and Production Possibilities**

1. You can show students that the prototypical "Ugly American," who complains that "they don't do it like back home" when they travel, is someone who fails to recognize that there isn't a single right way (what you are used to) to do something, but rather that the best way to do things in different circumstances changes due to different relative scarcities. For example, you don't see nearly as many large cars where gasoline is far more expensive, streets are narrower and parking is much more difficult.

2. In talking about the economic questions all societies face, emphasize that the various answers are interdependent. For example, "what gets produced" is not independent of "who gets what," because the "who gets what" answer determines the incentives facing producers.

3. The circular flow model is primarily designed to remind students that in the economy as a whole--the macroeconomy—"everything depends on everything else." As a result, if you wish, you could use a more developed circular flow model to trace the many effects of a given change in one market on others, as well as identify some of the changes in other markets that would impact any particular market.

4. It is often worth reinforcing the point that the production possibilities curve does not establish "the" efficient solution for an economy, which also depends on preferences. One way to do it is draw a production possibilities curve with meat and vegetables on the axes, and ask students where the efficient output combination is. Students will typically pick a point other than the extremes (reflecting the fact that most do not just consume one thing). Then ask them what difference it makes if it is a society of vegetarians, to get them to see that such different preferences would lead to different efficient results.