PEARSON NEW INTERNATIONAL EDITION

# The Economic Way of Thinking

Heyne Boettke Prychitko

Thirteenth Edition

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# The Economic Way of Thinking

## LEARNING OBJECTIVES

- Convey the definition of economics.
- Introduce the concept of economizing behavior.
- Develop an understanding of importance of individual decision-making.
- Introduce property rights as rules of the economic game.
- Gain a sense of appreciation of the invisible hand of social interactions.

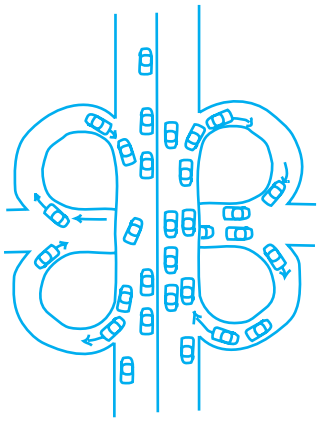
Good mechanics can locate the problem in your car because they know how your car functions when it *isn't having any problems*. A lot of people find economic problems baffling because they do not have a clear notion of how an economic system works when it's working well. They are like mechanics whose training has been limited entirely to the studying of malfunctioning engines.

When we have long taken something for granted, it's hard even to see what it is that we've grown accustomed to. That's why we rarely notice the existence of order in society and cannot recognize the processes of social coordination upon which we depend every day. A good way to begin the study of economics, therefore, might be with astonishment at the feats of social cooperation in which we daily engage. Rush-hour traffic is an excellent example.

## Recognizing Order

You are supposed to gasp at that suggestion. "Rush-hour traffic as an example of social cooperation? Shouldn't that be used to illustrate the law of the jungle or the *breakdown* of social cooperation?" Not at all. If the association that pops into your mind when someone says "rush-hour traffic" is "traffic jam," you are neatly supporting the thesis that we notice only failures and take success so much for granted we aren't even aware of it. The dominant characteristic of rush-hour traffic is not jam but movement, which is why people venture into it day after day and almost always reach their destinations. It doesn't work perfectly, of course. (Name one thing that does.) But the remarkable fact at which we should learn to marvel is that it works at all.

Thousands of people leave their homes at about eight in the morning, slide into their automobiles, and head for work. They all choose their own routes without any consultation. They have diverse skills, differing attitudes toward risk, and varying degrees of courtesy. As these passenger automobiles in their wide assortment of sizes and shapes enter, move along, and exit from the intersecting corridors that make up the city's traffic veins and arteries, they are joined by an even more heterogeneous mixture of trucks, buses, motorcycles, and taxicabs. The drivers all pursue their separate plans, with an almost single-minded devotion to their own interests, not necessarily because they are selfish but simply because none of them knows in detail the plans of the others. What each one does know about the others is confined to a few observations on the position, direction, and velocity of a changing handful of vehicles in the immediate environment. To this they add the important assumption that other drivers are about as eager to avoid an accident as they themselves are. There are general rules, of course, that everyone is expected to obey, such as stopping for red lights and staying close to the speed limit. That's about it, however. The entire arrangement as just described could be a prescription for chaos. It ought to end in heaps of mangled steel. And sometimes it does—but that is the rare exception.



Instead we witness a smoothly coordinated flow, a flow so smooth, in fact, that an aerial view from a distance can almost be a source of aesthetic pleasure. It is guided as if by an "invisible hand." There they are—all those independently operated vehicles down below, inserting themselves into the momentary spaces between other vehicles, staying so close and yet rarely touching, cutting across one another's paths with only a second or two separating a safe passage from a jarring collision, accelerating when space opens before them and slowing down when it contracts. Rather than anarchy and chaos, the movement of rush-hour traffic, or indeed of urban traffic at any time of day, really is an astounding feat of social cooperation.

## The Importance of Social Cooperation

Everyone is familiar with traffic but almost no one thinks of it as cooperative. We depend on processes of coordination for far more than what we usually think of as "economic" goods. Without institutions that encourage cooperation, we couldn't enjoy the benefits of civilization. "In such a condition," as Thomas Hobbes observed in an often-quoted passage of his book, *Leviathan* (1651), "there is no place for industry, because the fruit thereof is uncertain; and consequently no culture of the earth; no navigation, nor use of the commodities that may be imported by sea; no commodious building; no instruments of moving and removing such things as require much force; no knowledge of the face of the earth; no account of time; no arts; no letters; no society; and, which is worst of all, continual fear and danger of violent death; and the life of man—solitary, poor, nasty, brutish, and short."

Because Hobbes believed that people were so committed to self-preservation and personal satisfaction that only force (or the threat of it) could keep them from constantly assaulting one another, his writings emphasize only the most basic form of social cooperation: abstention from violence and robbery. He seems to have supposed that if people could merely be induced not to attack one another's persons or property, then positive cooperation—the kind that actually produces industry, agriculture, knowledge, and art—would develop of its own accord. But will it? Why should it?

## How Does it Happen?

How do people encourage one another to take precisely those complexly interconnected actions that will eventually produce the multitude of goods and services that we all enjoy? Even a society of saints must use some procedures for inducing positive cooperation of the right kind if the life of each saint is to be more than "solitary, poor, nasty, brutish, and short." Saints must, after all, somehow find out exactly what ought to be done and when and where it ought to be done before they can play an effective part in helping others.

Three hundred and fifty years have passed since Hobbes examined society. Hobbes probably failed to see the importance of this question for understanding life in the "commonwealth" because the society he knew was far simpler, more bound by custom and tradition, and less subject to rapid and disruptive change than the societies in which we have grown up. Not until well into the eighteenth century, as a matter of fact, did any significant number of thinkers begin to wonder why it was that society "worked"—that individuals pursuing their own interests, with extremely limited information, nonetheless managed to produce not chaos but a remarkably ordered, productive society.

One of the most perceptive and surely the most influential of these eighteenth-century thinkers was Adam Smith. Smith lived in an age when most educated people believed that only the careful planning of political rulers could prevent a society from degenerating into disorder and poverty. Smith did not agree. But in order to refute the accepted opinion of his day, he had to describe the process of social coordination that he saw operating in society—a process that not only functioned, in his judgment, without the constant attention of government but also worked so powerfully that it often canceled the effects of contrary governmental policies. Adam Smith published his analysis in 1776 as *An Inquiry into the Nature and Causes of the Wealth of Nations* and thereby established his claim to the title Founder of Economics. He did not invent "the economic way of thinking," but he developed it more extensively than many of his predecessors had done, and he was the first writer to use it in a comprehensive analysis of social change and social cooperation.

## An Apparatus of the Mind—The Skill of the Economist

What exactly do we mean by *the economic way of thinking*? To begin with, it is exactly what the term suggests: an approach, rather than a set of conclusions. It is a technique of thinking about the complex world around us.

But what is this "technique of thinking?" It's a little hard to describe in any way that is both brief and clear. You will come to see what it is by practicing it yourself. Perhaps it can best be summarized as a set of concepts derived from one fundamental presupposition: *All social phenomena emerge from the actions and interactions of individuals who are choosing in response to expected additional benefits and costs to themselves.*

That's a rather sweeping assertion. All social phenomena? You bet. The fact is, and it might as well be admitted at the outset, that economists believe that their theory explains a lot more than what people usually have in mind when talking about "the economic sector" of society. Economics is not only about money and profit, business and finance. Nor is it only a study of people's competitive behaviors. In fact, economics studies all kinds of choices and the unintended consequences—the unanticipated side effects—of choices. Rush-hour traffic and international trade can both be studied using the economic way of thinking; so, too, can nonprofit businesses and socially concerned charities and government bureaus. If we have found a way to explain the behavior of people at Wal-Mart and GM, why shouldn't it also explain the behavior of the Internal Revenue Service and the Department of Agriculture in the United States government? Isn't

every branch and agency of government made up, just like any other social group, of individuals who choose on the basis of expected benefits and costs to themselves?

Don't misunderstand. Economic theory does not assume that people are selfish or materialistic or shortsighted or irresponsible or interested exclusively in money. None of these is implied by the assumption that individuals choose on the basis of expected benefits and costs to themselves. Everything depends on what people take to be benefits and costs and the relative values they place on these benefits and costs. Economic theory does not deny the reality or importance of generosity, public spirit, or any other virtue. Economists would be foolish if they denied these facts. Indeed, Adam Smith also wrote an entire book on virtue!

*Economizing actions*

The economic way of thinking, when put to work, displays three aspects, one focusing on *actions*, the second on *interactions*, and the third on *consequences*, whether those consequences are intended or unintended. The focus on actions emphasizes *economizing* and *trade-offs*, or sacrifices. To economize means to use resources in a way that extracts from them the most of whatever the economizer wants. Scarcity makes economizing necessary. Although someone with access to unlimited resources would not have to economize, keep in mind that time is a scarce resource, at least for mortals, so that even people with more money than they know how to spend must economize. Because a week on the ski slopes in Utah is a week that cannot be spent on the beaches of Acapulco, you must choose, no matter how large your money income. Even Facebook's Mark Zuckerberg must choose how to best use his time and wealth—shall he search next month for more investment opportunities or take a vacation on a remote island? Even he can't have everything all at once. Even he faces trade-offs. In fact, he even faces trade-offs—choices—when deciding what to do with the next hundred million dollars he earns. Shall he stuff it in his mattress, invest it in another online venture, or, like before, donate it all to fix the broken Newark public school system? His options may be very different from yours, but like you, Zuckerberg still faces scarcity. Scarcity means making a sacrifice, a trade-off, to get more of what you want. The economic way of thinking clarifies the economizing process, the actions of choosing under the constraints that scarcity imposes.

It also clarifies a lot of puzzling but important *inter*actions. If the core problem for economic actions is scarcity, the core problem for economic interactions is *a multiplicity of diverse and even incompatible individual projects*. We deal with scarcity by economizing. We deal with the fact that we require the cooperation of millions of other people whom we don't even know by participating in a coordinating process. The urban traffic example illustrates both aspects. When they are planning their route, thinking about a lane change, or deciding whether to speed up or slow

down as the traffic light turns yellow, commuters are engaged in economizing actions. They are making choices—doing what each thinks is best under the circumstances. But their actions get coordinated through a process that is much more than the simple sum of each driver's behavior. No driver (and no central traffic planner!) controls this process with all its interactions, and yet the process manages to coordinate all those individual decisions. Although the process is never perfect, most people successfully reach their destinations.

And this leads us to consider the idea of *unintended consequences*. Each and every driver intends to reach his or her destination, each makes decisions along the way, and each interacts with others on the road. The overall flow of traffic, however, is not intended by anyone. It is not in any single driver's control. Nor does some fictional central traffic planner tell everybody exactly what to do to ensure an orderly flow. The complex pattern of traffic emerges spontaneously, as an unintended consequence of people "merely driving." Much of what motivates the economic way of thinking is in asking the question "How can such an orderly pattern of events emerge, not on purpose, but as a by-product of people pursuing their own separate interests?"

In modern industrial societies, people's economizing actions occur in the context of extreme specialization. Specialization, or what Adam Smith called the division of labor, is a necessary condition for the increases in production that have so expanded "the wealth of nations" in recent centuries. But specialization in the absence of coordination is the road to chaos, not wealth. How is it possible for millions of people to pursue the particular projects in which each of them is interested, on the basis of their own unique resources and capabilities, in almost total ignorance of the interests, resources, and capabilities of almost everyone else upon whose cooperation their own projects depend for success?

Economic theory is remarkable when used to answer this question, to explain the often mysterious working of what Adam Smith called *commercial society*. "When the division of labour has been once thoroughly established," Smith observed early in *The Wealth of Nations*,

*Commercial society as defined by Adam Smith*

> it is but a very small part of a man's wants which the produce of his own labour can supply. He supplies the far greater part of them by exchanging that surplus part of the produce of his own labour, which is over and above his own consumption, for such parts of the produce of other men's labour as he has occasion for. Every man thus lives by exchanging, or becomes in some measure a merchant, and the society itself grows to be what is properly a commercial society.

*Interactions: exchange*

The successful coordination of activity in such a society, where everyone lives by specializing and exchanging, is a task of

extraordinary complexity. Think for a moment about the activities that had to be precisely coordinated in order for you to enjoy this morning's breakfast. Farmers, truck drivers, construction workers, bankers, and supermarket checkers are just a few of the multitude of people whose efforts contributed to the production, processing, transportation, and distribution of your breakfast cereal or toast. (It gets even more fantastic: Think of all the miners who unearthed the iron ore that made the steel that made the trucks that drove the bricks that built the factory that made the tractor that the farmer used to harvest the wheat. We can write an entire book on the countless individuals and organizations that made the farmer's tractor itself, and we still wouldn't have accounted for them all.) How were all these people induced to do exactly the right thing at precisely the right time and place? Economic theory originated and developed largely out of efforts to answer that question. And despite all its imperialistic adventures in recent years, economics still does most of its useful work in explaining the functioning of commercial society, which is what most people probably have in mind when they talk about "the economy."

## Cooperation Through Mutual Adjustment

Economic theory argues that your choices, your plans, change the opportunities available to others and that social coordination is a process of continuing mutual adjustment to the changing net advantages that their interactions generate. That is a very abstract argument. We can make it more concrete by referring once more to traffic flow.

Picture a freeway with four lanes in each direction and with all the entrances and exits on the right. Why don't all the drivers stay in the far-right lane? Why do some of them go to the trouble of driving all the way over to the far left when they know they'll have to come back to the right lane to exit? Anyone who has driven on a freeway knows the answer: The traffic flow is impeded in the far-right lane by slow-moving vehicles entering and exiting, so people in a hurry get out of the right lane as quickly as possible.

Which of the other lanes will they choose? Although we can't predict the action of any single driver—we are instead trying to understand the overall patterns that might arise—we know that the drivers will disperse themselves quite evenly among the three other lanes. But why does this happen? How does it happen? The answer is also the explanation of what we meant just now by *a process of continuing mutual adjustment to the changing net advantages that their actions generate*. Drivers are alert to the net advantages of each lane and therefore try to move out of any lanes that are moving slowly and into those that are moving faster.

This speeds up the slow lanes and slows down the fast lanes until all lanes are moving at the same rate or, more accurately, until no driver perceives any net advantage to be gained by changing lanes. It all happens quickly, continuously, and far more effectively than if someone at the entrances passed out tickets assigning each vehicle to a particular lane.

*Similar to lines at checkout counters*

The same basic principles are at work in the rest of society. Individuals choose their actions on the basis of the net advantages they expect. Their actions alter, however minutely, the relative benefits and costs of the options that others perceive. When the ratio of expected benefit to expected cost for any action increases, people do more of it. When the ratio falls, they do less. The fact that almost everyone prefers more money to less is an enormous aid in the process, an extremely important lubricant, if you will, in the mechanism of social coordination. Modest changes in the monetary cost and monetary benefit of particular options can induce large numbers of people to alter their behavior in directions more consistent with what other people are concurrently doing. And this is the primary system by which we obtain cooperation among the members of society in using what is available to provide what people want. This is what the market economy is all about.

*"Higher gas prices expected to reduce Labor Day travel"*

## Signals

People need information to successfully accommodate and adjust to others. We need to be able to communicate our actions and plans. It's all pretty straightforward on the road. Exit signs inform us of our options. Stoplights inform us of when to proceed, slow down, or stop. The lights help each of us to know what to do next. (Have you ever come upon an intersection where the stoplights failed to work? How would you proceed? Or imagine if all lights were accidentally on green—and the drivers didn't know it!) Information signals also come in the form of turn signals (most obviously), brake lights, and so on. Often without even realizing it—as with the brake lights—you are communicating with drivers directly behind you (informing them to slow down) and that piece of information is communicated to yet many others behind them, too. We often don't pay attention to how our simple actions are broadcast out to countless others. A similar process occurs in the economy. Producers and consumers, buyers and sellers, firms and job seekers must all find ways to coordinate their plans of action. One of the themes of this text, and a task that economists are prepared to explain, is how market-formed prices communicate useful information to participants in the economy. Prices help us figure out what to produce, how to produce, and for whom to produce. They help clarify our options and trade-offs. Without them we'd be groping in the dark.

## Rules of the Game

Economic systems—the customs and practices through which citizens pursue and coordinate their projects and plans—are shaped by the "rules of the game," a phrase you're going to meet repeatedly in this text. The rules of the economic game go a long way in explaining whether people will use scarce resources effectively or wastefully.

Rules affect incentives. Take Major League Baseball, for example. Why do National League pitchers practice bunting while American League pitchers don't engage in batting practice at all? Because the rules of the game are different with respect to pitchers: National League pitchers step up to the plate during the game; the American League substitutes designated hitters for its pitchers. The designated hitter rule provides little or no incentive for an American League pitcher to become a better batter.

*All interactions presuppose some "rules of the game."*

Whether the "game" is traffic, business, government, science, family, school, baseball, test taking, or dating, it can't be played satisfactorily unless the players know at least roughly what the rules are and generally agree to follow them. The rules must be reasonably stable. Although rules can and will change over time, they must have a fair degree of stability so that they can be known and relied on (imagine the problems that would emerge were the designated hitter rule to be dropped during the middle of an American League ball game or even during midseason). Often it takes time for participants to understand and adjust appropriately to new rules of the game. Consider, for example, the recent expansion of the strike zone by umpires in Major League Baseball. Players have adjusted their expectations of what counts as a ball and a strike and will adjust their batting strategies in light of the evolution of the rule. Pitchers and catchers are adjusting their strategies as well.

Most social interaction is directed and coordinated by the rules that participants know and follow. When the rules are in dispute or inconsistent or simply not clear, the game tends to break down. This is true not only of a child's game of Go Fish or a professional ball game but for production and trade as well. In the 1990s, the countries of central and eastern Europe that were trying to move from centrally planned and bureaucratically controlled systems of production to decentralized, market-coordinated systems faced no greater obstacle than the absence of clear and accepted rules for the new game they were attempting to play. If you have ever travelled in a foreign country with a culture radically different from your own and a language that you didn't understand, you have some sense of what happens when the rules of the game in a society are suddenly and dramatically upset. People don't know exactly what is expected of them or what they can expect from others. Social cooperation can fall apart quickly in such a setting, as mutually beneficial exchanges

under the rules give way to hesitant attempts to find out what the rules are and, in the worst cases, destructive struggles to establish rules that will work in one's own favor.

## Property Rights as Rules of the Game

*Property rights are rules of the game.*

Property rights form a large and important part of the rules governing most of the social interactions in which people regularly engage. A market-exchange economy is based on *private property rights*—rights assigned to specific individuals in the form of legal ownership. They clearly specify who legally owns what. As a private property right owner, no other person may use or alter the physical characteristics of your property without your permission. The neighbor down the street is not allowed to drive your car without your permission, nor is he allowed to jump on the car, repaint it, flatten the tires, or even put in a better stereo system without your approval. (Nor, of course, are you allowed to drive all over his beautiful front yard without his permission.) Moreover, private property rights can be *voluntarily traded or exchanged* for similar rights to other goods and services. The purchase of your car, or a bag of groceries for that matter, is, in the economic way of thinking, an exchange of property rights. You are now assigned ownership of the car, groceries, and so on, and the seller is now assigned ownership of the cash payment.

In former socialist economies, citizens often enjoyed private property rights to consumer goods (clothing, food, radios, etc.), but the means of production—natural resources, land, factories, machinery, and other material inputs in the production process—were typically designated as *social property rights*. Here, *ownership is legally assigned to "society" as a whole, and therefore to nobody in particular. Social property rights are not freely exchangeable*. With these rules, it is unclear who is legally allowed to do what with the goods owned by society. Who decides (and through which process of agreement) that a socially owned factory should produce cars or trucks or ships or bombs, or that the factory should be doubled in size, reduced in size, or even continue to operate at all? Can "society as a whole" *really* be expected to make these decisions—not only for a single factory but for *all* of the socially owned means of production—in ways that would tend to encourage economic growth and prosperity?

By deciding exactly what belongs to whom under which circumstances, private property rights provide the members of a society with dependable information and incentives. But a system of satisfactorily clear property rights cannot be created overnight; it will almost inevitably be the product of an evolution over time, in which law, custom, morality, technology, and daily practice interact to establish reliable patterns. A movement

away from socialism entails the abolition of old property rights but not necessarily the creation of new ones. The consequence may be chaos rather than market coordination. The road from bureaucratic control of the economy to market control has been a treacherous one for the nations of the former Soviet bloc, with many potholes, washouts, earth slides, and unmapped sections over the past 20 years.

In the economic way of thinking, the emergence of clearly defined and enforced property rights does encourage the effective use of already existing scarce resources. Clear property rights also spark efforts to discover new resources, to innovate by introducing new cost-cutting technologies, to develop new talents and skills. The voluntary exchange of property rights can also expand the opportunities and wealth of the trading parties. Of course, economic decay is possible. An outright reduction in resources can reduce a country's production possibilities (consider, for example, the massive destruction of lives and property from the earthquake in Iran in 2003, or the bombing of Baghdad that same year, or the unprecedented effects of Hurricane Katrina in the United States in 2005, or the tsunami that slammed into Japan in 2011).

## The Biases of Economic Theory: A Weakness or a Strength?

Okay, so you're on your way to thinking like an economist. One warning: Our theory about society is neither perfect nor unbiased. (Are you aware of one that is?) It does not offer an unprejudiced view, in which *all* the facts are presented and *all* values are given the same weight. Think again about what we suggested was the basic feature of economic theory, that all social phenomena emerge from the actions and interactions of individuals who are choosing in response to expected benefits and costs to themselves.

*People choose.*

Isn't that a biased perspective? Consider the emphasis on *choice*. Economic theory is so preoccupied with choice that some critics have accused it of assuming people choose to be poor or choose to be unemployed. When we come to the issues of poverty and unemployment, you can decide for yourself whether this is a fair criticism or a misunderstanding. But there can be no doubt that economic theory attempts to explain the social world by assuming that events are the product, and typically the unintended product, of people's choices.

*Only individuals choose.*

Closely related to this focus on choice, economics emphasizes *individuals* as the fundamental units of analysis. Our everyday language sometimes muddies this up. Because only individuals actually choose, economists try to dissect the decisions of

such collectives as businesses, governments, or nations until they locate the choices of individual persons within them. For example, you chose to attend your present college, but surely the college itself didn't "choose" to admit you as a student. The college itself is composed of a number of individuals with diverse roles and responsibilities. Some individuals within the college, acting in the name of the college, made that choice. The groundskeepers, the secretaries, and most if not all of the faculty, and other students probably played no part at all in the choice of admitting you as a new student. Similarly, neither Facebook, the Red Cross, Japan, nor the al Qaeda terrorist organization makes choices. Individuals within those collectives make choices. (Could you imagine any of those organizations making decisions if they weren't composed of individual people? And even if you could, do you think that would lead to an insightful way of explaining how they operate?) Just as any good physics student learns to see through our everyday language about the sun "rising" and "setting" (she instead knows that the earth itself rotates and that makes it appear that the sun goes up and down), so, too, a good economics student ought to quickly learn that individuals make choices and decisions, rather than organizations themselves.

*Individuals choose after weighing benefits and costs.*

Economic thinking is also criticized by some as false or misleading because of its emphasis on the economizing process, on calculation and consistency of ends and means. Economists assume that people act with a purpose in mind, that they compare the expected costs and benefits of available opportunities before they act, and that they learn from and therefore do not repeat their mistakes. But are people really that calculating? Aren't our actions guided more by unconscious urges and unexamined impulses than all this would admit? And is every action really a means to some end, a pursuit of some clearly given goal? Although economists do not claim that people know everything or never make mistakes, the economic way of thinking does indeed assume that people's actions follow from comparisons of benefits and costs. And it does emphasize the instrumental character of human action while neglecting the fact that many important activities—a spirited conversation, perhaps, or a friendly game of tennis—are not engaged in as a means to some other end.

Another charge often leveled against the economic way of thinking is that it contains a pro-market bias. This criticism, too, calls attention to a genuine and significant characteristic of economic theory, although this characteristic may not be altogether what it seems to be. Economic theory began as a study of markets, of complex exchange processes, and economists have learned a great deal over the years about the conditions under which exchange works poorly or well. The economist's alleged pro-market bias is probably better seen as a preference for those social institutions and rules of the game that make exchange mutually beneficial and production more efficient—a process from which all participants tend to benefit.

## Biases or Conclusions?

Are they really biases or prejudices? Why couldn't we call them convictions (or even conclusions) and simply say that economists explain social phenomena by observing scarcity, choice, trade-offs, and consequences, because this enables us to understand those phenomena? Do we say that physicists are biased when they argue that energy cannot be created nor destroyed, or that biologists are biased because they assume that DNA molecules control the development of organisms?

The questions we're raising now are important and interesting. But we cannot follow them further without making this chapter too long. It has seemed obvious to the authors that the search for knowledge of any kind necessarily begins with some *commitments* on the part of the inquirer. We cannot approach the world with a completely open mind, because we weren't born yesterday. And completely open minds would in any event be completely empty minds, which can learn nothing at all. All discussion, every inquiry, and even each act of observation are rooted in and grow out of convictions. We must begin somewhere with something. We proceed from where we find ourselves and on the basis of what we believe to be true, important, useful, or enlightening. We may, of course, be wrong in any of these judgments. Indeed, we are always wrong to some extent, since every "true" statement necessarily leaves out a great deal that is also true and thus errs by omission. Even the most detailed road map is a necessary and useful simplification of reality.

*Even economists face scarcity!*

We cannot avoid this risk, as some people suppose, by steering clear of theory. *Economics is a theory of choice and its unintended consequences*. People who sneer at "fancy theories" and prefer to rely only on common sense and everyday experience are often in fact the victims of extremely vague and sweeping hypotheses. Common sense might lead someone to believe that pot smoking leads to more powerful drugs, because most hard drug users started on pot. Yet, most pot users had previously been milk drinkers—does milk drinking therefore lead to pot smoking? Even though milk has heavy amounts of l-tryptophan—the same amino acid in turkey that leads to drowsiness—surely these "facts," by themselves, cannot prove that one fact caused the other. Or, consider the so-called "Superbowl Effect." Financial journalists often report, during Superbowl week, an interesting set of facts. When an NFC team wins the Superbowl, the Dow Jones Industrial Average does well over the course of the year; when an AFC team wins, the Dow does poorly that year. This held about 100 percent of the time until the Green Bay Packers (an NFC team) messed it up in 1998. Today, it is said to hold about 80 percent of the time. *Hold what?* The *fact* that the Dow had often done well after an NFC victory and poorly after an NFC loss provides little insight about financial markets and the Dow.

*Economics defined*

It doesn't necessarily follow that the Superbowl outcome causes (or "leads to") the value of Dow stocks to rise or fall. To conclude otherwise is to fall victim to the all-too-common but profoundly mistaken reasoning that the association or statistical correlation among groups of facts establishes some kind of causation among those facts. It may, in fact, be a mere coincidence.

## The Skills of the Economist

Cause and effect

The point is a simple but important one. We can observe facts, but it takes a theory to explain the causes. It takes a theory about cause and effect to weed out the irrelevant facts from the relevant ones (and so, although the facts clearly show that most pot smokers were former milk drinkers, milk drinking is probably not a relevant fact in explaining pot smoking; similarly, the Superbowl is irrelevant when explaining Wall Street interactions). Our observations of the world are drenched with theory, which is why we can usually make sense out of the buzzing confusion that assaults our eyes and ears. Actually, we observe only a small fraction of what we "know," a hint here and a suggestion there. The rest we fill in from the theories we hold: small and broad, vague and precise, well tested and poorly tested, widely held and sometimes peculiar, carefully reasoned and dimly recognized.

This text developed out of a growing suspicion that when students found economic theory abstract and dull, it was largely because we economists were trying to teach them too much. This text tries, therefore, to achieve more by attempting less. It is organized around a set of concepts that collectively make up the economist's basic kit of intellectual tools. The tools—actually, the skills—are all related to the fundamental assumption we have discussed and are surprisingly few in number. But they are extraordinarily versatile. They unlock such mysteries as foreign exchange rates, business firms that make profits by accepting losses, the nature of money, and different prices charged for "identical" goods—mysteries that are generally conceded to be in the economist's province. But they also shed light on a wide range of issues that are not ordinarily thought of as economic at all—traffic congestion, environmental pollution, the workings of government, and the behavior of college administrators.

It's important to realize, however, that economic theory by itself cannot answer any interesting or important social questions. The economic way of thinking has to be supplemented with knowledge drawn from other sources: knowledge about history, culture, politics, psychology, and the social institutions that shape people's values and behavior. Learning the mere techniques of economic analysis is far easier than mastering the art of applying them sensibly and persuasively to actual social problems

in their infinite complexity. The best economists and students of economics aren't mere technicians. They are skilled users of the economic way of thinking.

But this is not the time to worry about all that. The primary goal of this text is to get you started in the practice of thinking the way economists think, in the belief that once you start you will never stop. Economic thinking is addictive. Once you get inside some principle of economic reasoning and make it your own, opportunities to use it pop up everywhere. You begin to notice that much of what is said or written about economic and social issues is a mixture of sense and nonsense. You begin to think "outside the box," which tends to be a scarce, powerful, and rewarding intellectual skill.

*Can you connect all points together with straight lines without retracing or taking your pen off the paper? (Hint: Think outside the box.)*

## Once Over Lightly

The economic way of thinking was developed by social theorists largely to explain how order and cooperation emerge from the apparently uncoordinated interactions of individuals pursuing their own interests in substantial ignorance of the interests of those with whom they are cooperating. Economics is a theory of choice and its unintended consequences.

The fundamental assumption of the economic way of thinking is that all social phenomena emerge from the actions and interactions of individuals who are choosing in response to expected benefits and costs to themselves. Only individuals make choices. They may make those choices on their own or by collaborating in groups (households, business firms, government bureaus, and so on). But that should not lead us to lose sight of the fact that the choices in the name of a group were really made by individuals who evaluate trade-offs and economize when they pursue their plans and projects.

The perspective of economic theory on human actions and interactions places a strong emphasis on choices by individuals who continually compare expected additional benefits and costs. We often call this economizing behavior. While this is a biased or limited perspective, theory of some kind is indispensable for anyone who wants to understand the complex phenomena of social life.

The economic way of thinking also emphasizes the importance of the rules of the game, and the way those rules tend to influence our choices. By legally assigning ownership of scarce goods, property rights are a key element of the rules of the game. Social property rights assign ownership to society in general, and therefore nobody in particular. But the problem is society by itself never makes choices and decisions. Only individuals can do that. A system of private property rights assigns rights to specific

individuals, rights that can be voluntary traded. Being freely exchangeable, private property rights help clarify our options and opportunities and form the foundation of the market-exchange economy.

## QUESTIONS FOR DISCUSSION

1. How much do people have to know about one another in order to cooperate effectively? Contrast the situation of two family members who are planning to take a vacation together with the situation of motorists who are simultaneously using intersecting streets. How are "collisions" avoided in each case? What do you know about the interests, the personality, or the character of the people whose cooperation supplied your breakfast this morning?
2. What do you predict would happen if planners in Dallas decided to reserve one lane on each of its freeways for "urgent vehicles," with an urgent vehicle defined as any vehicle whose driver might be late for an important event if the vehicle were to be delayed by congestion in the regular lanes? Do you think drivers would stay out of the urgent vehicle lane? Or would it become just as congested as all the other lanes? Would such an idea be more likely to succeed in practice if drivers were generally less selfish and more considerate?
3. A model of saintlihood and altruism, when Mother Teresa accepted the Nobel Prize for Peace in October 1979 and decided to use the $190,000 award to build a hospital for the treatment of people with leprosy, was she acting in her own interest? Was she behaving selfishly? Was she economizing? What about former Vice President Al Gore's promise to donate his portion of the $1.5 million 2007 Nobel award to the Alliance for Climate Protection?
4. A newspaper item reported that two-thirds of all mothers who work outside the home "do it for the money, not by choice." Are those really alternatives? Either for the money or by choice?
5. How important are monetary motives? A story in the *Wall Street Journal* of May 1, 1995, reported the results of a survey conducted by Kaplan Educational Centers of its students preparing to take the Law School Aptitude Exam. They were asked what attracted them to a career in law. Only 8 percent said they were attracted by the financial rewards. But 62 percent thought that others were attracted by the financial rewards. How would you interpret this disparity?
6. Why do most people want larger money incomes? Former British Prime Minister Margaret Thatcher once suggested that people are motivated by money not because they are greedy, but because money gives them more control over their lives. What do you think most people are ultimately after when they make sacrifices in order to increase their money incomes?
7. What happens when the rules of the game (written or unwritten) decree that important student government meetings won't start until everyone is present and that late arrivals will incur no penalty? Is it in anyone's

interest to be punctual? Are these rules of the game likely to prove satisfactory over time?

8. What are some of the more important rules that coordinate the actions of all those playing the "game" of this economics course? Who decided where and when the class would meet, who would teach it, who would enroll as students, what the text would be, when the exams would be given, and so on? Who decides where each student will sit? Do you find it odd that two students rarely try to occupy the same seat?
9. Have you ever noticed that the grounds of city-owned parks are often more polluted than those of country clubs?
   (a) Is it simply because people who use parks are less concerned with pollution compared with those who golf? Is that even true?
   (b) Might the property-rights assignments have something to do with it? Who owns the city park? Who owns the country club?
   (c) Though their grounds are often impeccably clean, country clubs tend to use powerful fertilizers that eventually seep into and pollute the water table below, causing problems for others in the surrounding community. Who owns the water table?
10. What do we mean when we say, "That's just a coincidence; it doesn't prove anything?" How does theory enable us to distinguish relevant evidence from mere coincidence?
11. Would you say that physicians who don't believe acupuncture works are biased if they reject it without trying it? If someone told you that you can get a perfect grade in this course, without studying, just by regularly chanting the mantra "invisible hand," would you believe it? Would it be a sign of bias or prejudice on your part if you totally ignored this advice even though you are extremely eager for a high grade in the course?
12. Someone has calculated that American women with four years of college have twice as many babies on average as women with five years of college. Assume the data are correct. What conclusions would you draw? Would you infer that going to college for a fifth year reduces female fertility? Would you caution a woman who has just completed four years of college not to take a fifth year if she is determined to have children? What theories are you using?

# Efficiency, Exchange, and Comparative Advantage

# Efficiency, Exchange, and Comparative Advantage

## LEARNING OBJECTIVES

- Distinguish between free goods, scarce goods, and bads.
- Explain the notion of economic efficiency and its relation to subjective values.
- Understand the mutual benefits of voluntary exchange.
- Analyze comparative advantage through the use of production possibilities frontiers.
- Explore the function of middlemen in reducing transactions costs and providing scarce information.
- Introduce the explanation for long run economic growth.

Economists generally favor free trade, but trading has long had an unsavory reputation in the Western world. This is probably the result of a deep-seated bias that nothing can *really* be gained through mere exchange. Agriculture and manufacturing are believed to be genuinely productive: They seem to create something new, something additional. But trade only exchanges one thing for another. It seems to follow that the merchant, who profits from trading, must be imposing some kind of tax on the community. The wages or other profit of the farmer and artisan can be obtained from the alleged real product of their efforts, so that they are perhaps entitled in some sense to their income; they

reap what they have sown. But merchants seem to reap without sowing; their activity does not appear to create anything and yet they are rewarded for their efforts. Trading, some have thought, is therefore social waste, the epitome of inefficiency.

Thus, the old hostility toward the merchant in the form of a distrust of the "middleman." People often want to bypass the middleman, who is pictured as a kind of legal bandit on the highways of trade, authorized to exact a percentage from everyone foolish or unlucky enough to come his way. (And in a market system they often are free to avoid the middleman; yet, more often than not, people choose to use the middleman's services.)

However ancient or deep-seated this conviction of the unproductiveness of trade, it is completely mistaken. There is no defensible sense of the word *productive* that can be applied to agriculture or manufacturing but not to trading. Exchange is productive! It is productive because it makes available more of what people want.

The exchange of private property rights is fundamental to market processes. This chapter explores why people voluntarily trade goods and services. We shall show that trade increases the wealth of the trading parties, that trade is productive. We shall also introduce you to your first graphs—the production possibilities frontiers. Graphs are useful tools to recognize trade-offs and to clarify the growth in wealth that occurs through specialization and exchange.

## Goods and Bads

The act of cooperative exchange is fundamentally an agreement to swap property rights—ownership—of goods and services. Your purchase of oranges at the local grocery provides you the opportunity to consume the oranges as you now wish and provides the grocer the opportunity to use the cash payment as best he sees fit. What were his (the oranges) are now yours; what were yours (the three dollars) are now the grocer's. In many of our everyday exchanges, there is no explicitly written contract. (It is simply understood that you now own the oranges.) In other exchanges, such as the purchase of a car or a home, or the rental of an apartment unit, contracts and agreements will be drafted giving clear account of who owns what and how the property can be used.

Economists are fascinated with the everyday exchange of goods, and, thankfully, we have a very clear meaning of the word *good*. In the economic way of thinking, something is a *good* if, in the eyes of the chooser, *more of it is preferred to less*. It's that simple. We can analyze the concept of a good a little further by distinguishing between a "free good" and a "scarce good." *A free good is a good that can be acquired without sacrifice; a scarce good*

*A good is anything whereby more of it is preferred to less.*

*can only be acquired by sacrificing some other good, something else of value.*

Your voluntary purchase of oranges, for example, suggests that oranges are a good to you, and, moreover, they're a scarce good because you sacrificed something else you value (the three dollars) to gain ownership of the oranges. Your roommate's willingness to stand in line for "free" concert tickets suggests that those tickets are a scarce good for her. She'd prefer to have them, and she sacrifices her time that could have been devoted to some other activity that she values. Think of it this way: A good is *scarce* if one must incur a *sacrifice* to obtain it.

*A scarce good can be obtained only through sacrifice.*

Something represents a free good only if it is acquired without any sacrifice whatsoever. Free goods are harder to imagine, but they do exist. It's all a matter of context. Air is a scarce good to a scuba diver, but air is typically a free good to students in the college classroom. Lovely tropical sunshine is a free good to the child born and raised in the Bahamas, but it's a scarce good for the family that travels from Milwaukee to enjoy a few hot days during the winter holidays.

*The economic problem: scarcity.*

If only all goods were free goods! Then none of us would face scarcity, none of us would have to make sacrifices, trade-offs, or choices. We would have everything that we could possibly desire, automatically. Heaven is often depicted that way. The problem is, here on earth, we face scarcity. We can't have everything we desire all at once. We must choose.

And not only that, economic "bads" also exist. If a good is something in which more is preferred to less, then, you've guessed it, *a bad is something in which less is preferred to more*. Summertime mosquito bites, Los Angeles smog, and the terror of 9/11 are just a few examples of bads. In all of this, don't forget that the notion of an economic good—or bad—is subjective. Consider your authors here. Boettke detests old-time fiddle music. Prychitko loves it. We're not sure if Paul Heyne had any strong opinion of it either way. What's considered a bad to one person might very well be a good to somebody else, and neither a good *nor* a bad to yet another person.

## The Myth of Material Wealth

If we are going to demonstrate that trade, and therefore market exchanges of scarce goods in general, creates "wealth," it is also best to clarify what we mean by that word, too.

Of what does wealth consist? Merely money? Stocks and bonds, too? Real estate? What constitutes your own wealth? Many people have drifted into the habit of supposing that an economic system mainly produces "material wealth," *things* such as John Deere tractors, Martin guitars, iPads and iPhones. But none of these is wealth unless it is available to someone who values it. *Wealth, in the economic way of thinking, is whatever people value.*

*Wealth is whatever people value.*

And value is in the eyes of the chooser. A-Rod managed to sign a $275 million contract with the Yankees. Buddha, we are reminded, wanted nothing—and that's pretty much what he got. Because he had found what he wanted, he had greatly increased his wealth. He had found nirvana. Different people can, and do, have quite different values. Additional water is additional wealth to a farmer who wants to irrigate; it is not wealth to a farmer caught in a Mississippi River flood. Two feet of fresh snow is additional wealth to the owner of a ski resort, but perhaps only a backbreaking burden to the driveway shoveler. An accordion is wealth to a front man in a polka band, but not to the old men in Metallica.

Economic growth consists not in increasing the production of *things*, but in increasing the production of *wealth*. Material things can contribute to wealth, obviously, and are in some sense essential to the production of wealth (accordions are made of material things; snow can be made by snowmaking machines). Even such "nonmaterial" goods as health, love, and peace of mind do, after all, have some material embodiment. But there is no necessary relation between the growth of wealth and an increase in the volume or weight or quantity of material objects. The claim that "wealth [equals] material things" must be rejected at the root. It makes no sense. And it blocks understanding of many aspects of economic life, such as specialization and exchange—the heart of what Adam Smith called the commercial society.

## Trade Creates Wealth

Those suspicious of trade, going at least as far back as Aristotle, tended to believe that voluntary exchange is (or *should* be) the exchange of equal values. The exact reverse is true: Voluntary exchange is never an exchange of equally valued things. *If it were, it would not occur.* Traders cooperate with one another to enjoy the opportunity to gain *more* of what each values. The opportunity for each to gain provides the incentive. In a freely agreed-upon exchange, both parties expect to gain by giving up something of lesser value for something of greater value. If Jack swaps his basketball for Jim's baseball glove, Jack values the glove more than the ball, and Jim values the ball more than the glove. We observe each person freely sacrifice one good he values for some other good he values more. Viewed from either side, the exchange was unequal, for the traders have differing values; otherwise, they wouldn't have rearranged their property rights of the ball and glove ("the glove is now *yours*"). And that is precisely the source of its productivity. Jack now has greater wealth than he had before, and so does Jim. The exchange was productive because it increased the wealth of both parties.

"Not really," says a contentious voice from the rear of the classroom. "There was no real increase in wealth. Jack and Jim feel

better off, it's true; they may be happier and all that. But the exchange didn't really produce anything. There is still just one baseball glove and one basketball, regardless of who the new owner is."

True, nothing physically new has been manufactured by the swap. But what is manufacturing, anyway? Factories, raw material inputs, workers' sweat and toil, and the packaging of final products immediately leap to mind. We tend to picture the technical element of production—looking only "inside the box," as it were. We are inclined to ignore that manufacturers of the baseball glove and the basketball technically try to rearrange those materials into *more valuable combinations*. That's the economic element—they are trying to *add* value—that's why they're manufacturing in the first place. All it takes is a little thought outside the box.

The swapping of the ball for the glove didn't produce a new material thing—it didn't require an additional technical feat—but it did produce a rearranged pattern valued more highly by both Jack and Jim, and that's why they traded. It added value, wealth, for Jack and for Jim. Think of exchange as being an alternative way of producing something. Jack used the basketball as an "input" to obtain the "output" of a baseball glove. For Jim the glove was the input and the ball the output.

Each traded a scarce and valuable good for a more valuable good. Each incurred a cost. In fact, any choice or action entails a trade-off, a forsaken opportunity. In the economic way of thinking, *the cost of obtaining anything is the value placed on whatever must be sacrificed in order to obtain it*. We call that, for emphasis, an *opportunity cost*. Jack valued the basketball, but he freely sacrificed that for something he valued even more, the glove. Jim valued the glove, but sacrificed that for something he valued more, the ball. Each found that the benefit outweighed the cost. They each enjoyed a net benefit—an increase in their wealth.

*Any choice implies a sacrifice, an opportunity cost.*

Where did the additional wealth come from? If Jack enjoys more wealth after the trade, it might seem that it must have come from Jim. But notice that Jim also enjoys more wealth. It could not have been taken away from Jack. Instead, the voluntary trade was an opportunity that created more wealth for *both* traders. Each found a way to increase his own wealth by cooperating in an exchange.

The result of the productive process (the exchange) was an output value greater than input value for both parties. Nothing further is required to make an activity productive. The exchange expanded real wealth. It was an efficient way for the two parties to get more of what they wanted.

## Is It Worth It? Efficiency and Values

Economists speak a lot about efficiency. So let's try to answer this question: Which is more efficient, a car that gets 18 miles per gallon or a car that gets 45 miles per gallon? At first blush, it seems

that higher miles per gallon necessarily means higher efficiency. And, in some technical sense, that's true. A gallon of fuel "input" goes further, provides greater "output," with the more "fuel-efficient" car. And those figures, the "objective data," as it were, are an important *piece* of information for the prospective car buyer. But the decision maker will surely ask another question: "Is it worth it?" After all, the greater fuel efficiency often comes at a greater cost. When making a decision, an individual tends to weigh all the expected additional benefits against all the expected additional costs.

The additional cost of acquiring the car with the higher miles per gallon is another important piece of information for the chooser. Suppose the auto that gets 45 miles per gallon is priced at $30,000, while an SUV that gets only 18 miles per gallon is priced at $24,000. Many prospective buyers might feel that the higher mileage is simply not worth the higher price. For them, the additional costs of acquiring such a vehicle outweigh the additional benefits provided by the greater fuel savings. Size, too, might matter. Perhaps a family with four children can't fit in the car with the better gas mileage, and prefers to sacrifice the fuel savings for a comfortable ride. Safety, the ability to handle snowy roads, and any number of additional concerns all influence the choice. The concept of technical efficiency, which only focuses on the objective data (such as miles per gallon), does not account for the values that the chooser places on the trade-offs and gains. The economist's notion of efficiency—call it economic efficiency, for emphasis—compares, from the chooser's own perspective, the additional benefits against the additional costs. A decision or plan of action is said to be economically efficient if the chooser judges that the expected additional benefits will exceed the expected additional costs.

*Simply put, a question that asks "Is it worth it?" at the individual level is a question about economic efficiency*. And each of us answers that question very differently. One office worker drives a car to work, another takes a train, and a third rides a bicycle. Each worker compared the additional costs and benefits and selected the form of travel that they thought was best. The first is willing to bear the expense of owning and operating a vehicle because he places a high value on convenience. The second wants to avoid rush hour traffic and enjoys instead a cup of coffee and reading a book on the train. The third considers herself environmentally conscious and prefers the exercise. Each is pursuing an "economically efficient" way to get to work. Ultimately, each is revealing their own preferences and values. Their disagreements at the office about the best way to get to work are ultimately disagreements over values.

*A plan or project is economically efficient if the additional benefits outweigh the additional costs.*

That's right. An economist cannot definitively answer questions such as "Which is more efficient, a nursing degree or a philosophy degree? A cell phone or a pay phone? Clear-cutting

forests or selective thinning?" In fact, stated this way, these questions are *meaningless*. It all depends on the situation at hand.

*What we value determines what we will consider efficient or inefficient*. Disagreements in society about the relative efficiency of particular projects will usually be disagreements about the relative value to be assigned to particular goods—or the relative disvalue of particular nongoods. Knowing this won't settle any controversial issue. But failing even to recognize what we're arguing about surely makes the resolution of controversy more difficult.

*Debates about efficiency are debates about values and rights.*

The question is not "What is *really* more efficient?" but rather "Who has the *right* to make particular decisions?" Crawling out of a sleeping bag to climb a mountain is atrociously inefficient to someone who plans to crawl back into that sleeping bag in the evening and is merely looking for the shortest distance between those two points, as opposed to looking for the greatest challenge. Fans of mountain climbing strenuously disagree, of course. But that creates no social conflict, because we all agree that individuals should have the right to decide for themselves whether it's more valuable to put their bodies on mountain peaks or to keep them in bed during vacations. It is when we do not agree on who has which rights that we get into vehement arguments about whether it is "really" efficient, for example, to clear-cut forests or to strip-mine coal. Or whether extensive use of the single-occupant vehicle is "incredibly inefficient in a world of rapidly depleting natural resources."

When the rules of the game establish clear and secure property rights, they implicitly decide by what process prospective benefits and costs are to be evaluated for decision-making purposes. If Mom decides to open her windows *and* turn up the thermostat on a cold winter day, she is using resources efficiently as long as she has an uncontested right to allocate all the resources she's using. If, on the other hand, she is cooling off someone else's living space, or if someone else is paying her heating bills, her property rights are likely to be challenged. Then the issue becomes not the efficiency of her preferred arrangements but rather her exclusive right to value the inputs and the outputs in what she does.

When property rights are clear, stable, and exchangeable, scarce resources tend to acquire money prices that reflect their relative scarcity. Decision makers then pursue efficiency by using these prices as information. To say that free-market prices are "wrong" because they don't reflect the real value of certain costs or benefits amounts to rejecting the entire market process by which those prices were determined. It is a critique not of efficiency, but of the existing system of property rights and of the rules of the game of which they form a part. Some radicals are well aware of this, but most critics are not so sophisticated.

## *Recognizing Trade-Offs: Comparing Opportunity Costs of Production*

Economists can safely argue that individuals who engage in voluntary exchange do so because they think it's worthwhile. They expect exchange to be an efficient way of enjoying greater wealth. Let's consider this a bit further using the following example.

In a house on Elm Street, Jones makes two kinds of beer, a lager and a stout. (A lager is a rather light beer; a stout is dark and heavy.) Every three months he can make *either* 10 gallons of quality lager *or* 5 gallons of quality stout, or any linear combination in between. This is illustrated by Jones's production possibilities frontier in Figure 1. *The production possibilities frontier (PPF) illustrates the maximum combination of stout and lager that Jones can produce using a given set of resources and talent.* (A technical point: for introductory simplicity, we assume the frontier is linear.)

*The production possibilities frontier.*

Meanwhile Brown, who lives on Oak Street, also makes lager and stout. Given her skills and resources, every three months she can make either 3 gallons of quality lager or 4 gallons of quality stout, or any linear combination in between. We illustrate Brown's production possibilities frontier in a separate graph in Figure 1, given her resources and talent. When all is said and done, Jones's stout tastes just as good as Brown's, and the same for their lagers.

At first glance, it appears that Jones is more efficient at brewing both lager and stout. After all, he can make more of either

*More is better, but at what cost?*

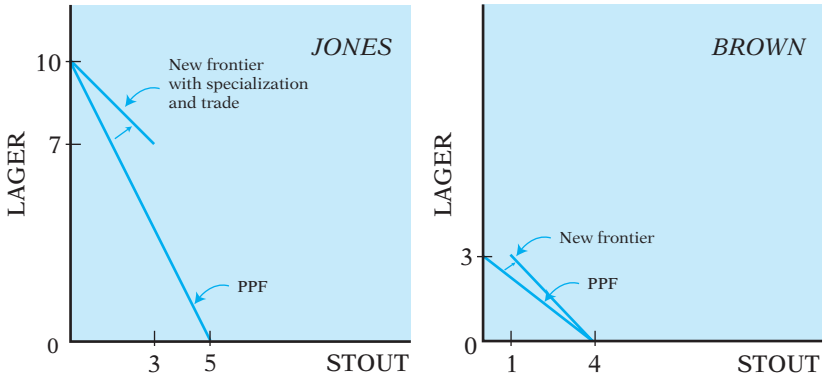



*Figure 1* **Simple production possibilities frontiers**

These graphs illustrate the production possibilities frontiers of Jones and Brown. If Jones specializes in producing lager (10 gallons) and Brown specializes in producing stout (4 gallons), and they trade 3 lagers for 3 stouts, each enjoys a combination of lager and stout that lies beyond his or her own frontier

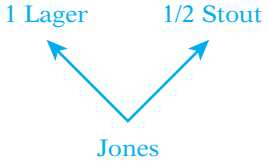
one than Brown. *But the ability to make more, in itself, is not a measure of efficiency*. We must compare what is *sacrificed* against what is *gained,* for neither beer is a free good. We must, in other words, look at the *opportunity costs* of producing lager and stout, and compare those costs between Jones and Brown.

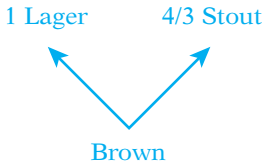
Okay, then, just what are Jones's costs of production? Suppose Jones decides to produce only lager. He can make 10 gallons. *But he sacrifices the opportunity to make 5 gallons of stout*. That's his *cost* of brewing 10 gallons of lager. For each gallon of lager, he sacrifices the opportunity to make 1/2 gallon of stout. (Suppose, instead, that he brews only stout. He can make 5 gallons, but he would *sacrifice the opportunity to make 10 gallons of lager*. For each gallon of stout, he gives up the chance to make 2 gallons of lager.) If Brown makes only stout, she can make 4 gallons, but she sacrifices the opportunity to make 3 gallons of lager. For every gallon of stout, Brown sacrifices 3/4 of a gallon of lager. (Likewise, 1 gallon of lager costs Brown 4/3 gallons of stout.)

Let's put this information in Table 1 (below).

*Comparative advantage: the ability to produce something at a lower cost, compared to somebody else.*

Now we are prepared to ask the critical question: *Who produces lager at a relatively lower opportunity cost?* It's there in the table—Jones does. He sacrifices only 1/2 gallon of stout, while Brown gives up 4/3 gallons of stout, to brew a gallon of lager. *Jones is the lowest opportunity cost producer of lager, compared to Brown*. In the economic way of thinking, Jones has a "comparative advantage" in lager production. He is relatively more efficient at producing lager, *compared to* Brown.




Our conclusion that Jones is more efficient at brewing lager probably doesn't come as a surprise to you. But get this. Brown is more efficient at producing stout, compared to Jones! Notice Brown produces a gallon of stout at a cost of 3/4 of a gallon of lager; it costs Jones a whole 2 gallons of lager to make a gallon of stout. *Brown is the lowest opportunity cost producer of stout, compared to Jones*. Stout brewing is *Brown's* comparative advantage.

We can imagine their own choices as if they each face a fork in the road. Choosing one path means sacrificing the other. Jones has a choice—brew stout or lager. Brewing a gallon of stout (pursuing *that* path) means sacrificing the next-best opportunity—brewing 2 gallons of lager (the *forsaken* path). Brown also faces a similar choice, but her costs are different. Brewing a gallon of stout costs her only 3/4 of a gallon of lager. That's what we mean by opportunity cost.

*Table 1*

| Brewer | Gallons of Stout | | Gallons of Lager | Opportunity Cost of Stout | Opportunity Cost of Lager |
|---|---|---|---|---|---|
| Jones | 5 | or | 10 | 2 gallons of lager | 1/2 gallon of stout |
| Brown | 4 | or | 3 | 3/4 gallon of lager | 4/3 gallon of stout |

## The Gains from Specialization and Exchange

With a little analysis, we've found that Jones is clearly the least-cost producer of lager, Brown of stout. What would happen if each were to *specialize* in the activity each is relatively more efficient at doing and trade between each other? Suppose, for example, that Jones and Brown run into each other at the home brewery supply store in town and discuss their brewing experiences. After some negotiation, they agree to try the following arrangement: Jones will produce only lager, Brown only stout, and they'll trade on a one-for-one basis. Jones will trade 3 gallons of his lager for 3 gallons of Brown's stout.

*Think of choice as standing at a fork in the road.*

Three months pass and Jones bottles 10 gallons of lager; Brown bottles 4 gallons of stout. Each specialized completely in the product of his or her comparative advantage. Notice, in Figure 1, that they are originally constrained by their own production possibilities frontiers. But, when they trade 3 lagers for 3 stouts, *each enjoys a combination of beers that lies beyond his or her own original frontier*. Jones has more of what he wants—his wealth has increased—as he now enjoys 7 gallons of lager and 3 gallons of stout. *He could not have done that on his own*. Brown's wealth increased too, as she now enjoys 3 gallons of lager and 1 gallon of stout, *which she could not have accomplished on her own*.

*Specialization and exchange expand people's production possibilities.*

And there's more to consider: our two brewers have created larger combinations of the two goods without using or depleting a single new resource. They are enjoying more while using the same level of resources. *By following their own comparative advantage, they are using scarce resources more productively*. By expanding their production possibilities, they are also expanding their wealth—their consumption possibilities.

## Why Specialize?

*Specialization* is another word for "following one's comparative advantage." We now understand the incentive. People specialize because they can increase their wealth by doing so. Specialization allows producers to expand their possibilities by trading for something that is more costly for them to produce on their own—the rules of the market economy allow people to trade their private property rights in this manner. This is so fundamental to the economic way of thinking that economists have called this insight the "law of comparative advantage." Comparative advantage explains the incentive to specialize and the economic growth that results. It explains why people forsake being "a jack of all trades" for highly specialized activities such as those undertaken

*Specialization: the pursuit of one's comparative advantage.*

*Law of comparative advantage.*

by accountants, nurses, entertainers, pilots, carpenters, dental assistants, longshoremen, teachers, plumbers, and even designated hitters. Comparative advantage could be the result of natural differences in what people are better or worse at doing, or it might be the result of skills acquired through practice, experience, and focus on those particular tasks. Either way, people expect to enjoy greater wealth (more of what they value) by specializing in activities in which they believe themselves to have a comparative advantage. If you have ever asked yourself, "What major is best for me, and what opportunities will I enjoy after I graduate?" you've asked a question about your own comparative advantage.

## From Individual Trade to International Trade, and Back Again

In our story, it is clear that both Jones and Brown gain by specialization and exchange. Although neither of them has heard of the "law of comparative advantage," they are nevertheless eager to follow its principle. David Ricardo, the British economist and a successor to Adam Smith, was among the first to articulate the law of comparative advantage in his 1817 book *Principles of Political Economy and Taxation*, where he applied it chiefly to the issue of international trade. We see, however, that it actually applies to specialization and exchange in general. If we wish, for example, we could say that the Jones household "exported" lager and "imported" stout, paying an "exchange rate" of one lager for one stout. Similarly, the Brown household exported stout and imported lager at the same exchange rate. We could go a step further than that. We immediately notice that *each party ultimately pays for its imports with its exports*.

But even arguments are subject to diminishing returns, and we might push our luck if we pursue this line of thought much further. We said earlier that Jones lives on Elm Street, Brown on Oak. One wonders if we would gain any additional insight, or just add confusion, were we also to say, "Elm Street imported stout from Oak Street, and Oak Street imported lager from Elm Street." What does it even mean to say, "Elm Street traded with Oak Street"? *It means nothing more than Jones traded with Brown*. Strictly speaking, streets don't trade, nor do neighborhoods. Individuals trade and benefit, not the streets.

What if Jones lived in Kansas and Brown in Pennsylvania, and Jones and Brown met virtually on an Internet home-brewing forum and made the same deal? Perhaps we could say that "Kansas imported stout from Pennsylvania" and the like, but does that provide more insight or confusion? It still means nothing more than Jones traded with Brown. Like streets or neighborhoods, states don't trade and benefit. People trade, typically across city, county, and state borders.

What, then, does it mean when we say that the United States trades with Finland, Germany, Canada, or Asia? It means U.S. citizens trade with citizens of another country. Finland doesn't produce and export Nokia cell phones. People do. There's nothing necessarily wrong with the terms *interstreet trade, intercity trade, intercounty trade, interstate trade, international trade* (or, perhaps someday, even *intergalactic trade*, though the authors have their doubts about that possibility). Economists are often called upon to discuss complex international trade issues and do so with various degrees of sophistication. It is *convenient* to say that the United States trades with Finland, for example. It would be prudent to keep in mind, however, that this is a shorthanded expression for a fantastic number of exchanges among a huge number of people, many acting in the name of larger organizations, across different regions and political borders.

*Only individuals choose!*

## Transaction Costs

Certainly it gets quite complicated, and we'll have ample opportunity to discuss international exchange policies. But our insights remain unshaken. Voluntary trade is mutually beneficial; otherwise, it wouldn't be undertaken. In a private property system, people have strong incentives to specialize because comparative advantage generates personal wealth. The rules of the game encourage those activities.

Our story discussed and compared opportunity costs of production. But aren't there also costs of *finding* that other trader? We intentionally assumed those costs were low. Jones and Brown lived in the same community. Were Jones and Brown to live in different parts of the country, the discovery of an exchange opportunity is not so apparent. Physical distance might add a hurdle to trade; so, too, does *ignorance* of existing trading opportunities. We call these transaction costs. *Transaction costs are the costs of arranging contracts and agreements—trades in general—among interested parties*.

Transaction costs are just as real, just as important impediments to the production of additional wealth, as any other kind of cost. The Web forum effectively lowered the transaction cost when we considered the example of Jones and Brown living in Kansas and Pennsylvania. Without it they might not discover their potential opportunities for trade.

## Incentives to Reduce Transaction Costs: Middlemen

Suppose you own 10 shares of Google stock and want to sell. You could go around to your friends and try to peddle it, or you could put an ad in the newspaper. But it is very likely that you would

obtain a higher price—even after paying the commission—by using the services of a middleman, in this case a stockbroker. No doubt if you advertised long enough and wide enough you could find a buyer willing to pay the price the stockbroker obtained for you. But it is not likely that the cost of your search would be less than the broker's fee. Moreover, new technology has allowed Internet brokers to emerge and compete against traditional brokers by substantially lowering their fees and commissions.

"Getting it wholesale" is a popular pastime for many people who think that they're economizing. Perhaps they are. If they enjoy searching for bargains (and many people do), then they may well gain from their activities. That's their choice. Free markets allow for those buying strategies. But for most people, retailers are an important low-cost source of valuable information. Market competition among suppliers and middlemen encourages them to find ways of informing potential customers and reducing their transaction costs. The retailer's inventory reveals something of the range of opportunities available, information that is often difficult to obtain in any other fashion.

*Middlemen expand the range of opportunities available to us.*

Much the same is true of job-placement agencies. People frequently resent the fee charged by private agencies for finding them a job. Unless they had expected the information obtained through the agency to be worth more than the fee, they presumably would not have used the agency's services. But they choose to use it. However, as soon as they have established contact with a suitable employer, the agency seems useless—as it now is, of course—and its fee begins to look like an unwarranted imposition.

A large part of the middleman's bad press stems from our habit of comparing actual situations with nonexistent better ones. The exchanges we make are rarely as advantageous as the exchanges we could make if we knew everything. So we conclude that the middleman takes advantage of our ignorance. But why look at it that way? Using the same argument, you could say that doctors take advantage of your illnesses and that they should receive no return for their services because they would be unable to obtain a return if you were always healthy. That is both true and irrelevant. We are neither always healthy nor all-knowing. Physicians and middlemen are consequently both producers of real wealth, for they create more desirable options for us.

## Middlemen Create Information

One of the continuing themes of this text will be that supply and demand in the free-market process creates prices—information—that allow people to evaluate the scarcity of different goods and services and better coordinate their production and consumption plans. The capacity of participants in the market to generate

high-quality information at low cost is one of its most important but least appreciated virtues. Middlemen are important agents in this process. The process reveals their comparative advantage.

Some markets, such as stock markets and commodity markets, are "well organized," which means that the bids and offers of many prospective buyers and sellers have been brought together to create a narrow price range for a fairly uniform good over a wide geographic area. Other markets, like the market that even the least practiced eye can see operating in a singles bar, are much less well organized: The precise good to be exchanged and the terms of the exchange have to be negotiated for each separate transaction, and transaction costs are consequently very high. The market for used furniture is relatively unorganized: Transactions take place at prices that vary greatly, because buyers and sellers are not in extensive contact. The market for retail groceries, on the other hand, is far along toward the well-organized end of the spectrum, so that prices for ground beef will vary much less over a given area than will used-furniture prices.

It is sometimes said that stock markets and commodity markets are more nearly "perfect" than retail grocery markets and used-furniture markets. This is a misleading way to describe the difference, because it implies that the latter markets ought to be changed (perfection is better than imperfection). Such a proposal only makes sense, however, if the costs of improving the markets are less than the gains from less costly exchanges made possible by the improvement. It is often the case, however, that we simply don't know of any way to improve a particular market except at transaction costs too high to make it worthwhile. Moreover, some efforts to "improve" markets through government action look suspiciously like efforts to promote special interests.

Every price is a piece of potentially valuable information to other people about available opportunities. The more such prices there are, the more clearly and precisely they are stated, and the more widely they are known, the greater will be the range of opportunities available to people in the society. The greater will be their wealth, in short. Is that not what we finally mean by an increase in wealth? It is a wider range of available opportunities, the ability to do more of whatever it is we want to do.

Middlemen are specialists in the organization of markets and hence in the creation of valuable information. They presumably specialize in this way because they think they have a comparative advantage in information production. Just consider eBay, the Internet auction site. Its developers have discovered a way of lowering transaction costs and producing valuable information for those people who choose to use its services. In short, middlemen—whether they fully realize it or not—tend to lower the hurdles that get in the way of exchange, which in itself provides further opportunities for others to specialize and exchange.

*Middlemen have the kind of comparative advantage that lowers our transaction costs.*

Thanks to the grocer-middleman, the Seattle accountant finds an alternative way of obtaining milk for the family. After all, she is free to raise and milk her own dairy cattle. But she chooses not to. She'd rather pursue her own comparative advantage and trade a small portion of her income for the services of the local grocer. She doesn't have to learn how to raise her own dairy cattle. Nor does she have to drive to Wisconsin to purchase milk directly from the source. The local grocer arranges all those deals and thereby relieves the accountant of such burdens, not to mention the burden of the dairy farmer cooperative trying to find buyers for thousands of gallons of milk.

*Buying milk from a grocer is an alternative way of producing milk for yourself.*

## Markets as Discovery Processes

Such are the incentives of the market system. Economists rarely, if ever, know what someone else's comparative advantage is outside of the market-exchange process. In fact, economists aren't necessary for markets to work well! Individuals in markets pursue what they think is their comparative advantage. Individuals assess their own costs and benefits and act accordingly. Economists try to explain the principles and logic that guide people's choices. Our graphs help shed some light on the logic that others use out there in the real world. In nonmarket systems, where property rights are not held and traded by individuals, but instead are owned by "society as a whole," a central economic planner—attempting to produce and deliver goods and services for the betterment of society as a whole—would have to draw up graphs and do all these mind-numbing calculations for millions of individuals and plans and projects—and where would he obtain all the necessary information to do it rapidly and productively?

In the real world, people pursue their comparative advantages simply by choosing the option that they find most attractive, all things considered. Serena Williams tried acting, but returned to tennis; R. L. Stine wrote children's horror stories rather than American history textbooks; Jay Leno hosted *The Tonight Show* rather than manage a Harley-Davidson plant; Oprah has the power to become a madam of a legal brothel in Nevada, but remained a successful talk show host. Americans buy shirts made in Asia, and Asians purchase grain from the United States because, in each case, they believe that is the best way to obtain what they want. Comparative advantages, and the efficiencies that they engender, are *discovered* not on the chalkboard but through real market exchanges of property rights.

*Comparative advantage is discovered in markets.*

In most of these decisions, relative prices provide fundamental information. We consider our various abilities and the wages we can command at the different tasks we are capable of performing and choose the job that we think will best further the projects in which we are interested. Students want to know, for

example, the kinds of careers and opportunities available to them, as well as the constraints, with their political science degree, nursing degree, or philosophy degree. None of this implies that people pay attention *exclusively* to prices, or that they are in it "only for the money," which would be an absurd and impossible way to behave. It means rather that relative prices guide people's decisions when other things are equal. American clothing stores find Asian products less expensive than domestically produced shirts of similar quality. Asian farmers choose not to raise wheat because they know that they could not raise enough to earn a satisfactory living, given the fact that they could not sell it above the price at which U.S.-grown wheat is available. In short, they behave as if the least costly way to achieve a given goal is the most efficient way. And in doing so they continuously coordinate these processes of cooperative interaction and mutual accommodation that comprise the economy.

## The Big Picture: First Thoughts on Economic Growth

*Poverty is not the same as scarcity!*

Believe it or not, except for a tiny handful of privileged people, poverty has been the rule rather than the exception throughout almost all of human history. One of the big questions in economics, therefore, is not what keeps people poor, so much as what has enabled some to become rich. Why was it that a few nations situated on the protruding northwest corner of the great Asian landmass suddenly, about 300 years ago, embarked on the process that we now call economic growth? Why did it happen? Why did it happen first in Europe and for a long time afterward outside of Europe only in nations founded on a European heritage?

## Searching for an Explanation

*What exactly happened?* Adam Smith, surveying the situation toward the end of the eighteenth century, summed up the matter in the first chapter of *The Wealth of Nations*:

> It is the great multiplication of the productions of all the different arts, in consequence of the division of labor, which occasions, in a well-governed society, that universal opulence which extends itself to the lowest ranks of the people.

In other words, wealth came from the huge increases in production caused by the division of labor. Economic growth was a consequence of the evolution of commercial society, a society in which everyone specializes and then lives by exchanging.

The most distinguished nineteenth-century student of economic growth employed a different terminology but delivered a similar verdict. Karl Marx attributed the enormous increases in production that had occurred in some countries in the eighteenth and nineteenth centuries to development of the system of commodity production. By commodities, Marx meant goods produced for profit by private owners of scarce resources rather than for use, which is what occurs, of course, when the division of labor has thoroughly extended itself through society. What Smith called commercial society Marx referred to as bourgeois society. In case you thought that Marx had nothing good to say about such a society, here is what he and Friedrich Engels wrote in *The Communist Manifesto*:

*Marx agrees with Smith! . . . on this point.*

> The bourgeoisie, during its rule of scarce one hundred years, has created more massive and more colossal productive forces than have all preceding generations together. Subjection of Nature's forces to man, machinery, application of chemistry to industry and agriculture, steam-navigation, railways, electric telegraphs, clearing of whole continents for cultivation, canalisation of rivers, whole populations conjured out of the ground—what earlier century had even a presentiment that such productive forces slumbered in the lap of social labor?

Marx thought he saw deep flaws in a society characterized by private ownership and production for profit, flaws that would ultimately destroy the system. But he had no doubts about its ability to produce wealth. And in the century and a half since the publication of *The Communist Manifesto*, the productive achievements of bourgeois or commercial society have dwarfed the achievements that Marx and Engels observed in 1848.

## The Evolution of Rules That Encourage Specialization and Exchange

But to say that nations grew wealthy by practicing specialization makes the issue seem much more simple than it is. If specialization is the solution to the problem of poverty, one might well ask why every nation doesn't adopt the division of labor and thereby become wealthy. The answer is that "nations" don't actually "adopt" systems as complex as a commercial society. And neither do individuals. Adam Smith once again put the matter succinctly, this time in the second chapter of *The Wealth of Nations*:

> The division of labour, from which so many advantages are derived, is not originally the effect of any human wisdom, which foresees and intends that general opulence to which it gives occasion.

The division of labor evolves over time, slowly and gradually, by an evolutionary process that no one designed or even intended. Particular individuals expect to obtain advantages from specializing, so they specialize in specific ways. Their decisions facilitate the decisions of others. Meanwhile, still other individuals are advancing their interests by contributing to the development of social institutions that make exchange easier by lowering transaction costs.

*Complex social institutions evolve—without a blueprint in advance.*

Money is one such institution, and an especially crucial one. But crucial though it is, no one invented the institution of money. It evolved in the same way that the division of labor evolved, through individuals acting to further the projects in which they happened to be interested and encountering others whose interactions generated a monetary system. One of Adam Smith's teachers, Adam Ferguson, correctly observed in his work *An Essay on the History of Civil Society*, published in 1767, that "nations stumble upon establishments, which are indeed the result of human action, but not the execution of any human design"; that communities often experience "the greatest revolutions where no change is intended"; and that even government officials "do not always know whither they are leading the state by their projects."

This is not to say that foresight is unimportant, much less that government has nothing to contribute toward the development of a successful economic system. Adam Smith certainly did not believe that. It is only "in a well-governed society," he maintained, that we see the evolution of extensive specialization, increases in production, and "universal opulence." Government must maintain conditions that allow the evolution of a commercial society. As Smith stated in the 1755 manuscript that served as the basis of *The Wealth of Nations*: "Little else is requisite to carry a state to the highest degree of opulence from the lowest barbarism, but peace, easy taxes, and a tolerable administration of justice; all the rest being brought about by the natural course of things."

*Private property rights and the rule of law.*

Let us now consider the *rules of the game* and their economically most important feature, clearly defined and adequately defended property rights. People will not invest for the future, organize useful projects, or initiate any other costly undertakings in the absence of reasonably secure property rights. In practice this means at a minimum that governments must protect the members of a society against theft and robbery by other individuals, maintain a reasonably fair and predictable judicial system to settle disputes among individuals, and somehow assure citizens that government will not itself engage in arbitrary acts of plunder. Those of us who have lived all our lives in societies characterized by "the rule of law" usually don't realize how rarely governments have lived up to these standards.

### *Efficiency, exchange, and comparative advantage*

Reasonably secure property rights and their important corollary, freedom to exchange those rights, are necessary conditions for the evolution of a successful commercial society, in which people cooperate effectively in creating and using resources to serve one another's wants, so that economic growth occurs. In the absence of these conditions, poverty is assured, except, perhaps, for a tiny minority that is able to enjoy affluence by wringing it from the labors of the vast majority.

Other factors matter, too. Climate can be a major aid or impediment to a people's endeavors to better their condition. Natural resources make a difference, even if not as large a difference as many have supposed. And war has made a huge difference, largely by destroying the wealth of the warring nations, but also by subjecting some people to the tyranny and exploitation of others. But if we choose to look backward in order to ask what ought to be done now, one large part of the answer seems clear. Governments must establish the rule of law, so that individuals within the boundaries of their control can expect to enjoy the benefits (and pay the costs!) of their own efforts and investments. A commercial society cannot develop successfully in the absence of the rule of law.

## Once Over Lightly

The exchange of a good is fundamentally an exchange of ownership, an exchange of property rights. Property rights are an important part of the "rules of the game," in this case rules that clarify who owns what and how the property can be used. A social system with clear property rights and few restrictions on exchange generates money prices that help people who are pursuing their comparative advantage to discover in exactly which direction their advantage lies. Market processes inform people of their opportunities and thereby lead to discoveries of efficient ways of creating net benefits for their participants.

A good is anything whereby more of it is preferred to less, and a bad is just the opposite: anything whereby less of it is preferred to more. A scarce good is a good that can be obtained only by sacrificing some other good, something else that a chooser values. We contrast that with a free good, which is a good that can be obtained without any sacrifice. A scarce good, then, is acquired through an act of choosing, selecting, incurring some kind of trade-off; a free good is not an object of choice. Economics, being a theory of choice, focuses on the production and exchange of scarce goods. There would be no economic problem were we to live in a world without scarcity.

The term *opportunity cost* is often used in the economic way of thinking to emphasize that the cost of an action is the value

one places on the next-best opportunity that one sacrifices when making a choice.

Wealth, in its broadest sense, is whatever people value. People voluntarily exchange property rights because they feel it is an efficient way to create personal wealth. Voluntary exchange always involves the sacrifice of what is less valued (input) for what is more valued (output). It is never an exchange of equal values. Exchange is as much a wealth-creating transformation as is manufacturing or agriculture. In fact, exchange is an alternative way of producing something.

Economic efficiency depends on valuations. Although physical or technological facts are certainly relevant to the determination of efficiency, they can never by themselves determine the relative efficiency of alternative processes. When considering a project or activity, decision makers tend to ask themselves whether or not the project or activity is worth the cost. This is another way of asking whether they feel the activity is economically efficient, for the concept of economic efficiency weighs the expected additional benefits against the expected additional costs.

Disagreements about whether some process or arrangement is efficient are at root disagreements about the relative weights that should be given to different people's evaluations. They are therefore often disagreements about the rules of the game or about who should have what rights over which resources.

Comparative advantage is determined by opportunity costs. People specialize in order to exchange and thereby further increase their wealth. They specialize in activities in which they believe themselves to have a comparative advantage. They exchange for goods and services that they believe are too costly to produce themselves. The increase in wealth can be illustrated with the help of the production possibilities frontier. The "law of comparative advantage" holds whether individuals are engaged in local trade or international trade.

A great deal of economic activity is best understood as a response to the fact that information itself is a scarce good, which adds to transaction costs—the costs of arranging contracts, agreements, and trades. The cost of producing information is not the same for everyone. If a system of appropriate incentives is allowed to evolve—particularly the market process—people will specialize in the production of those kinds of information in which they have a comparative advantage.

The much-abused "middleman" is in large part a specialist in information production and thereby the lowering of transaction costs. That's the middleman's comparative advantage. Just as the corner grocer enables prospective buyers and sellers to locate one another, so, too, does an eBay or an Amazon. Middlemen—those who feel they have a comparative advantage in providing the kinds of information that reduce transaction costs—coordinate market exchanges across regions, integrating local markets into the larger economic system.