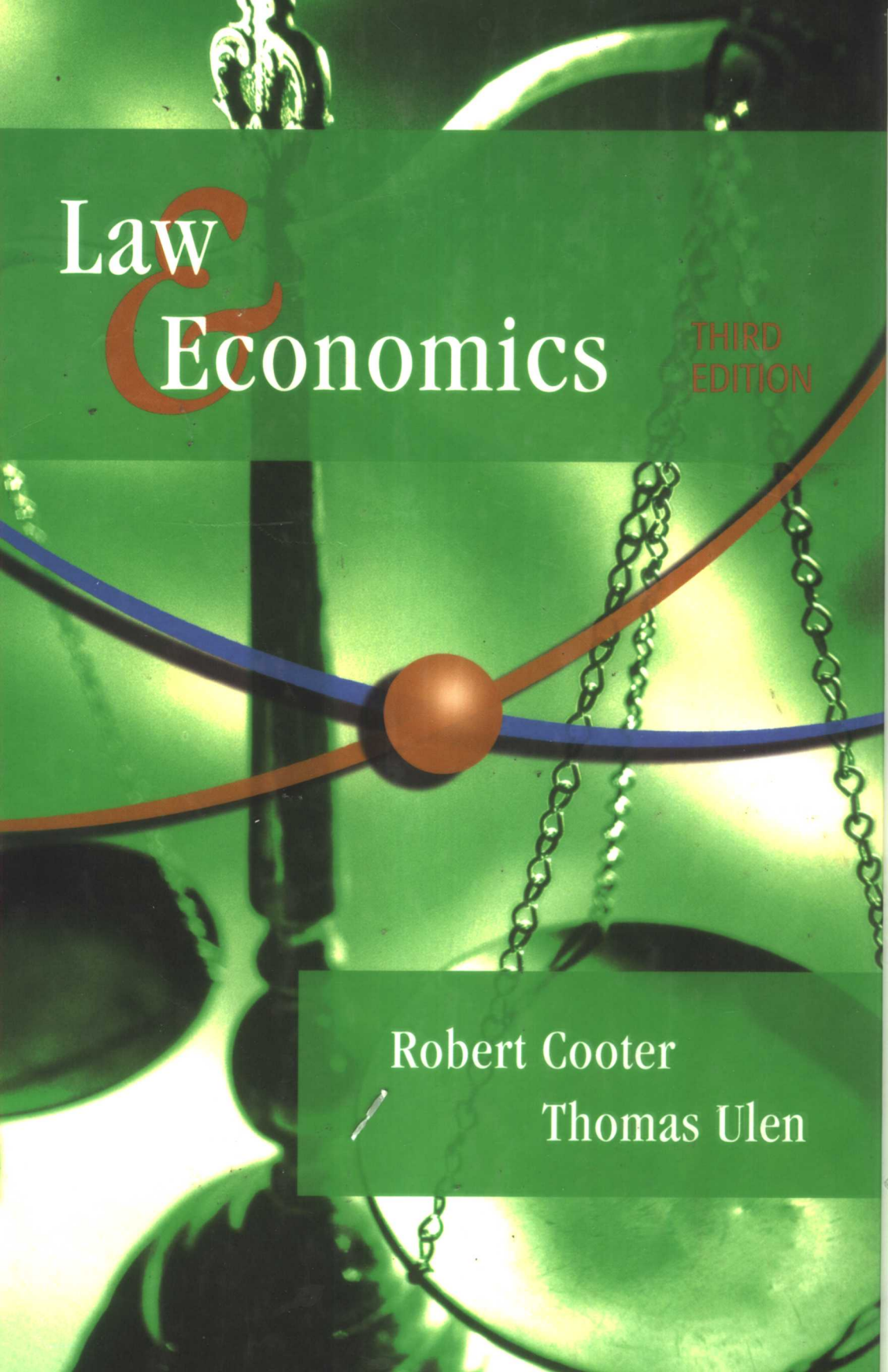
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THIRD EDITION
Robert Cooter
Thomas Ulen

LAW AND ECONOMICS

THIRD EDITION

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PREFACE

THIS THIRD EDITION continues a happy collaboration between us that began nearly twenty years ago when the field of law and economics was very new. In the course of those twenty years there has been a great blossoming of the subject, which had attracted us both away from our scholarship in more traditional economics subjects. Today almost no one receives a legal education in the United States without significant exposure to law and economics. Most students may not have taken an entire course in the subject, but they will have been repeatedly exposed to law and economics in their core law classes. One simply cannot study contract law, for example, without beginning from the notion of efficient breach of contract — an essentially economic concept. Property law — one of the most traditional of the courses in the legal curriculum — also now involves at least passing knowledge of economic concepts such as risk allocation, Pareto and Kaldor-Hicks efficient resource allocation, and the Coase theorem. And, increasingly, the core course in tort law revolves around such economic ideas as the extent to which tort liability minimizes the social costs of accidents, the manner in which exposure to tort law induces potential injurers to take efficient precaution against harm, and how the tort liability system can lead to efficient compensation for injury. In addition, many other standard law-school courses — such as business organizations, securities regulation, administrative law, environmental law, health law and policy, remedies, and constitutional law — contain significant elements of economic analysis. If someone had predicted twenty years ago that law and economics would become a central organizing philosophy in U.S. legal education by the end of the century, he would have been dismissed as delusional. And yet that prediction has come to pass.

The revolution in legal education wrought by law and economics has proceeded furthest in the United States, and it has also begun in earnest in the legal education of other countries. The European edition of this text — geared to the civil law systems of Western Europe — has appeared. There are large, growing, and vigorous graduate programs in law and economics in several distinguished universities in the European Union — such as the Erasmus Program in Law and Economics centered at the University of Ghent and the University of Hamburg. During the 1998–1999 academic year the Erasmus Program had students from 27 different countries studying law and economics. There are professional orga-

nizations of scholars doing law and economics in the United States, Europe, Latin and South American and the Caribbean, and in East Asia. Spanish, Japanese, Chinese, Russian, and French editions of this text have appeared or will soon appear. Another important indication of the spreading importance of the subject matter of this book is the new and promising field of law and economic development. Finally, a look at the publications in the *International Review of Law and Economics*, of which Cooter is an editor, will show that authors from a very wide range of countries are doing first-rate scholarship in this area. We are confident that within the next several decades law and economics will become as important in other legal education and legal systems as it has become in the United States.

We have taken the opportunity of this new edition to make many small and several substantive changes in the previous edition. In many instances we have sought to clarify the exposition and to correct small errors, many of which sharp-eyed readers had brought to our attention. We have added references to new literature and incorporated some new ideas into the text. Nonetheless, the basic structure of the book remains unchanged.

There are two important innovations accompanying this third edition. The first is an instructor's manual, which we had promised for the second edition but had not produced. This time we have made good on the promise. The second innovation is the introduction of a site on the World Wide Web devoted to materials related to this text and to law and economics. The Uniform Resource Locator (URL) for the site is *www.cooter-ulen.com*. There you will find some additional material to help in teaching and in learning law and economics. For example, we have posted edited versions of many cases, with discussion questions, that illustrate or extend the text material. We have also included copies of some of our examinations and problem sets. And we intend to add links to other important law-and-economics resources.

The website gives us important flexibility in delivering the text to faculty and students. It allows us, for instance, to make interim corrections and to cite to and summarize new literature and new cases that have appeared since the last edition or that may not be seminal enough to warrant inclusion in the text, but are, nonetheless, sufficiently interesting to warrant comment and thought.

Our intention is to update the site regularly and to take the comments and suggestions of readers very seriously. As some of the material posted on the site indicates, cyberspace is presenting new challenges for intellectual property law and for traditional forms of economic organization. It is also presenting increased opportunities for educational innovation. We shall be eager to see how the website helps to make the experience of learning law and economics easier, more thorough, and more enjoyable. We invite your feedback on that issue and any other having to do with this text. You may contact either of us or the webmaster of the site, whose e-mail address will be listed at the website.

We continue to be extremely grateful to our colleagues at Boalt Hall of the University of California, Berkeley, and at the University of Illinois College of Law for the superb scholarly environments in which we work. Our colleagues there (and elsewhere) have given us hours of their time to help clarify issues. And in one

of the great ongoing miracles of the educational enterprise, we continue to learn much from the students whom we have the pleasure to teach.

It is a daunting but gratifying task to revise one's work. The daunting aspect comes from the discovery that, although there are fewer and fewer errors and infelicities of expression than there were last time, there are, nonetheless, still imperfections. The gratifying aspect comes from being able to get an argument or explanation to be sharper or more meaningful, if not quite perfect, and to be able to include much significant new scholarly work from this vibrant field.

We are grateful to the many readers who have sent in comments and suggestions for improvements. In particular, we would like to thank Professor Ian Ayres of Yale, who endured what was for his co-teacher a delightful semester of teaching this material with Ulen, in the course of which he made many marvelous suggestions. Ian frequently began his lectures with a statement such as this: "Today we will explore the conceptual errors in the last sections of Chapter 4 of Cooter and Ulen." He was usually right, and we are much in his debt for his very kind help. Professor Ed Sattler of Bradley University took great care in reading through the second edition and offering extremely useful comments and corrections.

We have also had the great good help of our secretaries and particularly wish to thank Terri MacFarlane and Sally Cook at Illinois. For their cheerful and timely efforts, we are extremely grateful. Andrea Shaw and Debra Lally of Addison Wesley Longman and Diane Freed of Diane Freed Publishing have been very, very receptive to our suggestions and diligent and efficient in bringing this project to conclusion.

Finally, and most importantly, we thank our families — Blair, Bo, John, and Joe Cooter, and Julia, Ted, and Tim Ulen — for their continuing support and love.

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May, 1999

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Chapter 1

AN INTRODUCTION TO LAW AND ECONOMICS

"For the rational study of the law the black-letter man may be the man of the present, but the man of the future is the man of statistics and the master of economics. . . . We learn that for everything we have to give up something else, and we are taught to set the advantage we gain against the other advantage we lose, and to know what we are doing when we elect."

Oliver Wendell Holmes, The Path of the Law,
10 HARVARD LAW REVIEW 457, 469, 474 (1897)[1]

"To me the most interesting aspect of the law and economics movement has been its aspiration to place the study of law on a scientific basis, with coherent theory, precise hypotheses deduced from the theory, and empirical tests of the hypotheses. Law is a social institution of enormous antiquity and importance, and I can see no reason why it should not be amenable to scientific study. Economics is the most advanced of the social sciences, and the legal system contains many parallels to and overlaps with the systems that economists have studied successfully."

Judge Richard A. Posner, in Michael Faure
and Roger Van den Bergh, eds.,
ESSAYS IN LAW AND ECONOMICS (1989)

UNTIL RECENTLY, LAW confined the use of economics to the areas of antitrust law, regulated industries, tax, and the determination of monetary damages. Law needed economics in these areas to answer such questions as "What is

[1] Our citation style is a variant of the legal citation style most commonly used in the U.S. Here is what the citation means: the author of the article from which the quotation was taken is Oliver Wendell Holmes; the title of the article is "The Path of the Law"; and the article may be found in volume 10 of the *Harvard Law Review*, which was published in 1897, beginning on page 457. The quoted material comes from pages 469 and 474 of that article.

the defendant's share of the market?", "Will price controls on automobile insurance reduce its availability?", "Who really bears the burden of the capital gains tax?", and "How much future income did the children lose because of their mother's death?"

This limited interaction changed dramatically in the early 1960s when the economic analysis of law expanded into the more traditional areas of the law, such as property, contracts, torts, criminal law and procedure, and constitutional law.[2] This new use of economics in the law asked such questions as, "Will private ownership of the electromagnetic spectrum encourage its efficient use?", "What remedy for breach of contract will cause efficient reliance upon promises?", "Do businesses take the right amount of precaution because the law holds them strictly liable for injuries to consumers?", "Will harsher punishments deter violent crime?", and "How does bicameralism affect the discretionary power of courts?"

Economics has changed the nature of legal scholarship, the common understanding of legal rules and institutions, and even the practice of law. As proof, consider these indicators of the impact of economics on law. By 1990 at least one economist was on the faculty of each of the top law schools in North America and some in Western Europe. Joint degree programs (a Ph.D. in economics and a J.D. in law) exist at many prominent universities. Law reviews publish many articles using the economic approach, and there are several journals devoted exclusively to the field.[3] Recently, an exhaustive study found that articles using the economic approach are cited in the major American law journals more than articles using any other approach.[4] Most law school courses in America now include at least a brief summary of the economic analysis of law. By the early 1990s, there were professional organizations in law and economics in Europe, Canada, the United States, Latin America, and Australia. The field received the highest level of recognition in 1991 and 1992 when consecutive Nobel Memorial Prizes in Economic Science were awarded to economists who helped to found the economic analysis of law — Ronald Coase and Gary Becker. Summing this up, Professor Bruce Ackerman of the Yale Law School described the economic approach to law as "the most important development in legal scholarship of the twentieth century."

The new field's impact extends beyond the universities to the practice of law and the implementation of public policy. Economics provided the intellectual foundations for the deregulation movement in the 1980s, which resulted in such dramatic changes in America as the dissolution of regulatory bodies that set prices and routes for airlines, trucks, and railroads. In another policy area, a commission created by Congress in 1984 to reform criminal sentencing in the federal courts explicitly used the findings of law and economics to reach some of its results. Fur-

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[2]The modern field is said to have begun with the publication of two landmark articles — Ronald H. Coase, *The Problem of Social Cost*, 3 JOURNAL OF LAW AND ECONOMICS 1 (1960) and Guido Calabresi, *Some Thoughts on Risk Distribution and the Law of Torts*, 70 YALE LAW JOURNAL 499 (1961).

[3]For example, the JOURNAL OF LAW AND ECONOMICS began in 1958; the JOURNAL OF LEGAL STUDIES in 1972; and RESEARCH IN LAW AND ECONOMICS, the INTERNATIONAL REVIEW OF LAW AND ECONOMICS, and the JOURNAL OF LAW, ECONOMICS, AND ORGANIZATION in the 1980s.

[4]William M. Landes and Richard A. Posner, *The Influence of Economics on Law: A Quantitative Study*, 36 J. LAW & ECONOMICS 385 (1993).

thermore, several prominent law-and-economics scholars have become federal judges and use economic analysis in their opinions — Associate Justice Stephen Breyer of the U.S. Supreme Court, Judges Richard A. Posner and Frank Easterbrook of the U.S. Court of Appeals for the Seventh Circuit, Judge Guido Calabresi of the U.S. Court of Appeals for the Second Circuit, Judge Douglas Ginsburg and former Judge Robert Bork of the U.S. Court of Appeals for the D.C. Circuit; and Judge Alex Kozinski of the U.S. Court of Appeals for the Ninth Circuit.

I. WHAT IS THE ECONOMIC ANALYSIS OF LAW?

Why has the economic analysis of law succeeded? Like the rabbit in Australia, economics found a vacant niche in the "intellectual ecology" of the law and rapidly filled it. To explain the niche, consider this classical definition of the law: "A law is an obligation backed by a state sanction."

Lawmakers and adjudicators often ask, "How will a sanction affect behavior?" For example, if punitive damages are imposed upon the maker of a defective product, what will happen to the safety and price of the product in the future? Or, will the amount of crime decrease if third-time offenders are automatically imprisoned? Lawyers answered such questions in 1960 in much the same way as they had in 60 B.C. — by consulting intuition and any available facts.

Economics provided a scientific theory to predict the effects of legal sanctions on behavior. To economists, sanctions look like prices, and presumably, people respond to these sanctions much as they respond to prices. People respond to higher prices by consuming less of the more expensive good, so presumably people respond to heavier legal sanctions by doing less of the sanctioned activity. Economics has mathematically precise theories (price theory and game theory) and empirically sound methods (statistics and econometrics) of analyzing the effects of prices on behavior.

Consider an example. Suppose that a manufacturer knows that his product will sometimes injure consumers. How safe will he make the product? The answer depends upon two costs: first, the actual cost of safety, which depends in turn upon facts about design and manufacture; and the "implicit price" of injuries to consumers imposed through the manufacturer's legal liability. Liability is a sanction for injuring others. The producer will need the help of lawyers to estimate this implicit price. After obtaining the needed information, the producer will compare the cost of safety and the implicit price of accidents. To maximize profits, the producer will adjust safety until the actual cost of additional safety equals the implicit price of additional accidents.

Generalizing, we can say that economics provides a behavioral theory to predict how people respond to changes in laws. This theory surpasses intuition, just as science surpasses common sense.

In addition to a scientific theory of behavior, economics provides a useful normative standard for evaluating law and policy. Laws are not just arcane technical arguments; they are instruments for achieving important social goals. In order to know the effects of laws on those goals, judges and other lawmakers must have a method of evaluating laws' effects on important social values. Economics

predicts the effects of policies on efficiency. Efficiency is always relevant to policy-making, because it is always better to achieve any given policy at lower cost than at higher cost. Public officials never advocate wasting money.

Besides efficiency, economics predicts the effects of policies on another important value: *distribution*. Among the earliest applications of economics to public policy was its use to predict who really bears the burden of alternative taxes. More than other social scientists, economists understand how laws affect the distribution of income and wealth across classes and groups. While economists often recommend changes that increase efficiency, they try to avoid taking sides in disputes about distribution, usually leaving recommendations about distribution to policy-makers or voters.

II. SOME EXAMPLES

To give you a better idea of what law and economics is about, we turn to some examples based upon classics in the economic analysis of law. First, we try to identify the implicit price created by the legal rule in each example. Second, we predict the consequences of variations in that implicit price. Finally, we evaluate the effects in terms of efficiency and, where possible, distribution.

> **Example 1:** A commission has been appointed to consider some reforms of the criminal law. The commission has identified certain white-collar crimes (such as embezzling money from one's employer) that are committed after rational computation of the potential gain and the risk of getting caught and punished. Currently, those convicted of committing these crimes are sentenced to a term in prison. After taking extensive testimony, much of it from economists, the commission decides that a monetary fine, rather than incarceration, is the appropriate punishment for these offenses. The commission ranks each offense by seriousness and determines that the fine should increase with the seriousness of the offense, but by how much?

The economists who testified before the commission persuaded the members that certain white-collar crimes occur only if the expected gain to the criminal exceeds the expected cost. The expected cost depends upon two factors: the probability of being caught and convicted and the magnitude of the punishment. We can define the expected cost of crime to the criminal as the product of the probability and the magnitude of the punishment.

Suppose that the probability of punishment decreases by 5% and the magnitude of punishment increases by 5%. In that case, the expected cost of crime to the criminal remains the same. Because of this, the criminal will presumably respond by committing the same amount of crime. (Later we shall explain the exact conditions for this conclusion to be true.)

So far, we have described the implicit price of a criminal sanction and predicted its effect on behavior. Now we evaluate the effect with respect to economic efficiency. When a decrease in the probability of punishment offsets an increase in the magnitude of punishment, then the expected cost of crime remains the same for criminals. But the costs of crime to the criminal justice system may change.

The probability of being caught and convicted depends in large part on the resources devoted to apprehending and prosecuting white-collar criminals — for example, on the number and quality of auditors, tax and bank examiners, police, prosecuting attorneys, and the like. These resources are costly. By contrast, administering fines is relatively cheap. These facts imply a prescription for holding white-collar crime down to any specified level at least cost to the state: invest little in apprehending and prosecuting offenders, and fine severely those who are apprehended. Indeed, it can be shown that the most serious offense should be punished by the maximum monetary fine that the offender can bear. (Professor Gary Becker derived this result in a famous paper cited by the Nobel Prize Committee in its award to him.) Furthermore, it can be shown that incarcerating any criminal — not just white-collar criminals — is inefficient unless the ability to pay fines has been completely exhausted. Thus, the commission might recommend very high monetary fines in its schedule of punishments for white-collar offenses. We shall discuss these findings in much more detail in Chapters 11 and 12.

> **Example 2:** An oil company signs a contract to deliver oil by a certain date from the Middle East to a European manufacturer. Before the oil is delivered, war breaks out in the exporting country, so that the oil company cannot perform the contract as promised. The lack of oil causes the European manufacturer to reduce production and lose profits. The manufacturer brings an action (*i.e.*, files a lawsuit) against the oil company for breach of contract and asks the court to award it a sum of money, called "damages," that is equal to the amount of profits the manufacturer would have realized if the oil had been delivered as promised. Unfortunately, the contract is silent about the risk of nonperformance in the event of war, so that the court cannot simply read the contract and resolve the dispute on the contract's own terms. In resolving the suit, the court must decide whether to excuse the oil company from performance on the ground that the war made the performance "impossible" or to find the oil company in breach of contract and to require the oil company to compensate the manufacturer for lost profits.[5]

For an economist analyzing this case, the crucial point is that the parties failed to allocate between themselves the risk of a contingency — in this instance, war — that has arisen to frustrate performance of the contract. War is a risk of doing business in the Middle East, a risk that must be borne by one of the parties to the contract. Because the contract is silent about the allocation of this risk, the court must allocate it, and, depending on how the court decides the case, one party or the other will have to bear the costs of that risk.

What are the consequences of different court rulings on how to allocate the loss? If the court excuses the oil company from responsibility for performing the contract, then the manufacturer is going to bear the losses that arise from the

[5] For a full discussion of the cases on which this example is based, see Richard Posner and Andrew Rosenfield, *Impossibility and Related Doctrines in Contract Law*, 6 JOURNAL OF LEGAL STUDIES 88 (1977).

nondelivery of oil. On the other hand, if the court holds the oil company responsible for compensating the European manufacturer for the profits lost because of the failure to deliver the oil, then the oil company bears the losses that arise from nondelivery of the oil. Therefore, the way the court decides the case accomplishes an apportionment of losses between the two parties.

Can economics provide a method for the court to decide which apportionment is better? From the standpoint of economic efficiency, the court should assign the loss from nondelivery so as to make future contractual behavior more efficient. A rule for doing this assigns the losses to the party that could have borne the risk at less cost.[6] One way to make risk more bearable is to take precaution against it. The company doing business in the Middle East is probably in a better position than a European manufacturer to assess the risk of war in that region and to take precaution against it. For example, the oil company could have arranged for alternative shipping routes that might not have been blocked by a Middle Eastern war. The oil company also could have arranged to purchase oil elsewhere in the event of war in the Middle East.

Because the oil company is better able to bear the risk of war, economic efficiency requires the court to hold the oil company liable for breach of contract and, therefore, make it responsible for paying for the European manufacturer's lost profits due to nonperformance. This conclusion is consistent with the outcome of some actual cases that arose as a consequence of the 1967 war in the Middle East. Notice that these beneficial effects of the court's general rule extend beyond the market for oil to include all contracts where performance might be impossible. We shall consider the principles underlying this example in detail in Chapters 6 and 7.

> **Example 3:** *Eddie's Electric Company* emits smoke, which dirties the wash hanging at nearby *Lucille's Laundry*. *Eddie's* can abate the pollution by installing scrubbers on its stacks, and *Lucille's* can reduce the damage by installing filters on its ventilation system. The installation of scrubbers by *Eddie's* or filters by *Lucille's* completely eliminates pollution or the damage from it. Installing filters is cheaper than installing scrubbers. No one else is affected by pollution because *Eddie's* and *Lucille's* are near to each other and far from anyone else. *Lucille's* initiates court proceedings to have *Eddie's* declared to be a "nuisance." If the action succeeds, the court will order *Eddie's* to abate its pollution. Otherwise, the court will not intervene in the dispute.

First, assume that *Eddie's* and *Lucille's* cannot bargain together or cooperate. If *Lucille's* wins the action and the court orders *Eddie's* to abate the pollution, *Eddie's* will have to install scrubbers, thus reducing its profits. However, if *Lucille's* loses the action, then *Lucille's* will have to install filters, thus reducing its profits. We assume that installing filters is the cheaper of the two ways to eliminate the damage from pollution. Consequently, it is efficient for *Lucille's* to lose the action.

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[6] We assume in this example that the entire loss from nonperformance must be allocated by the court to one of the parties. Alternatively, the court might divide the loss between the parties.

Now, consider how the analysis changes if *Eddie's* and *Lucille's* can bargain together and cooperate. Their joint profits (the sum of the profits of *Eddie's* and *Lucille's*) will be higher if they choose the cheaper means of eliminating the harm from pollution. When their joint profits are higher, they can divide the gain between them in order to make both of them better off. The cheaper means is also the efficient means. As a result, efficiency is achieved in this example when *Lucille's* and *Eddie's* bargain together and cooperate, regardless of the rule of law. (Ronald Coase derived this result in a famous paper cited by the Nobel Prize Committee when he received the award.)

III. WHY SHOULD LAWYERS STUDY ECONOMICS? WHY SHOULD ECONOMISTS STUDY LAW?

The economic analysis of law is an interdisciplinary subject that brings together two great fields of study and facilitates a greater understanding of both. Economics helps us to perceive law in a new way, one that is extremely useful to lawyers and to anyone interested in issues of public policy. You probably are already accustomed to thinking of rules of law as tools for justice. Indeed, many people view the law *only* in its role as a provider of justice. This book will teach you to view laws as incentives for changing behavior (implicit prices) and as instruments for policy objectives (efficiency and distribution).

While our main focus will be on what economics can bring to the law, we shall also find that law brings something to economics. Economic analysis often takes for granted such legal institutions as property and contract, which dramatically affect the economy. For example, the absence of secure property and reliable contracts paralyzes the economies of some nations in Eastern Europe and the third world. As another illustration, differences in laws cause capital markets to be organized very differently in Japan, Germany, and the United States, and these differences can contribute to differences in those countries' economic performance.

Besides substance, economists can learn techniques from lawyers. Lawyers spend much of their time trying to resolve practical problems, and the techniques of legal analysis have been shaped by this devotion to practice. The outcome of a case often turns upon the labels used to describe the facts, so law students learn sensitivity to verbal distinctions. These verbal distinctions, which sometimes strike nonlawyers as sophistry, are based on subtle but important facts that economists have ignored. To illustrate, economists frequently extol the virtues of voluntary exchange, but economics does not have a detailed account of what it means for exchange to be voluntary. As we shall see, contract law has a complex, well-articulated theory of volition. If economists will listen to what the law has to teach them, they will find their models being drawn closer to reality.

IV. THE PLAN OF THIS BOOK

The benefits of interdisciplinary study can be had only at a cost: lawyers must learn some economics, and economists must learn something about the law. We ask the reader to incur this cost in the next two chapters. Chapter 2 is a brief review of