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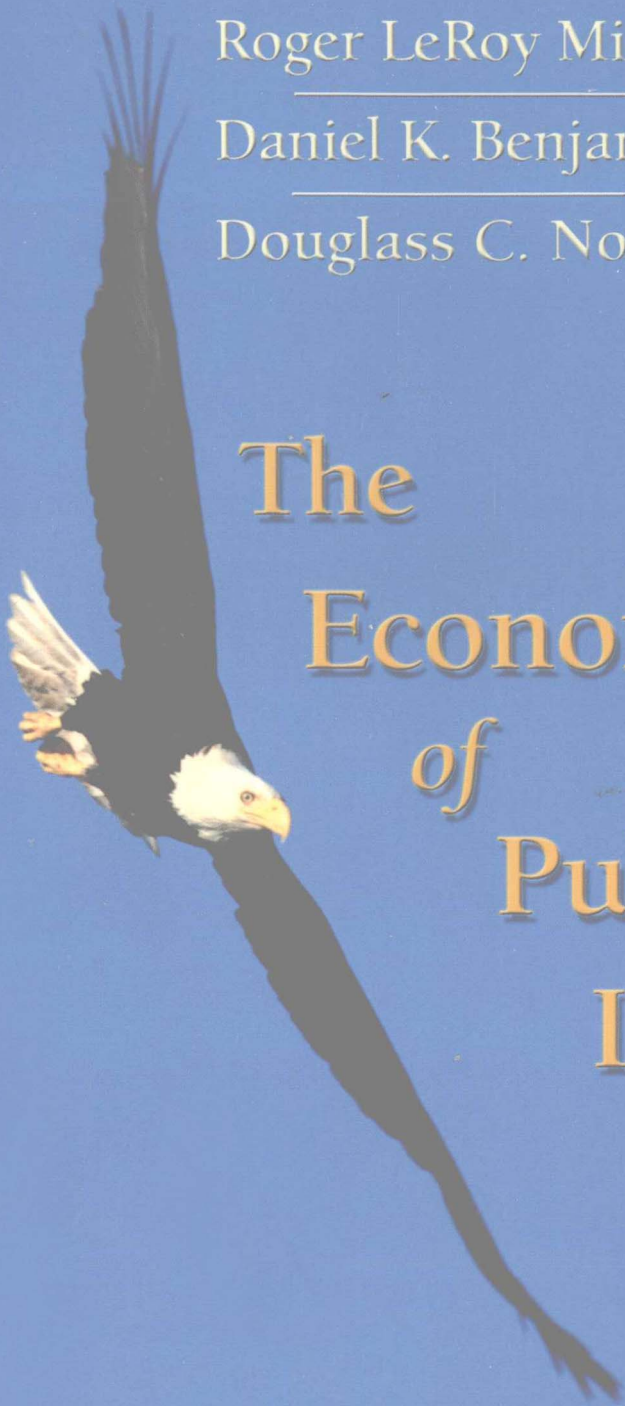

The Economics of Public Issues

TWELFTH EDITION

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Printer and Binder: R.R. Donnelley & Sons
Cover Photo: © PhotoDisc

Library of Congress Cataloging-in Publication Data

Miller, Roger LeRoy.
The economics of public issues / Roger LeRoy Miller, Daniel K. Benjamin, Douglass C. North.— 12th ed.
p. cm.
Includes bibliographical references and index.
ISBN 0-321-07915-9 (pbk.)
1. Economics. 2. Industrial policy. 3. Economic policy.
I. Benjamin, Daniel K. II. North, Douglass Cecil. III. Title.

HB171 .M544 2001
330.973'092—dc21 00-035529

2 3 4 5 6 7 8 9 10—DOH—0 4 0 3 0 2 0 1 0 0

To Rod Kagan, whose sculptures keep getting better with age; thanks for your friendship.

R.L.M

To my students:
Noster patronis emptor est.

D.K.B.

Preface

This book is about some issues of our times. Several of these issues are usually thought of as being inherently non-economic. Others provide classic illustrations of the core of economic science. Many are controversial and thus are likely to evoke non-economic reactions to what we have to say. In our view, however, the one feature that ties all of the issues together is that they illustrate the power of economics in explaining the world around us. And, we might add, we hope all of them illustrate that economics can be entertaining as well as informative.

Over the years, we have sought to select issues for this book that—in addition to the attributes noted above—possess a sense of immediacy. We hope you will find the issues we have added for this edition meet this criterion. The new issues include the following:

- *Slave Redemption in Sudan*
- *Smoking and Smuggling*
- *Caught in Traffic*
- *The E-Commerce Explosion*
- *Pity the Poor Monopolist*
- *Killer Cars and the Rise of the SUV*
- *Superfund Follies*
- *The Economics of Weather Forecasting*
- *Property Rights and Forests*

All of the other chapters in this edition have been partially or completely rewritten, and every chapter is, of course, as up-to-date as we can make it. What you will consistently find is a straightforward application of economic principles as they are taught in virtually all courses in economics, public policy, and the social sciences. This book can be understood by those who have taken a course in economics, are taking a course in economics, or have never taken a course in economics. In other words, we have made it self-contained, as well as accessible to a wide range of students.

The chapters in this edition are organized into seven parts. Part One examines the foundations of all economic analysis, including the concepts of scarcity, trade-offs, opportunity cost, marginal analysis, and the like. In a sense, the four chapters in this introductory part set the stage for the remaining twenty-seven chapters. The second through sixth parts of the book cover the topics—such as demand and supply, market structures, environmental issues, and the impact of government policies—that are integral to virtually every course in which economics plays a role. At the end of the book, Part Seven examines the international scene, because international issues have become an essential part of the public issues of today.

Every part has a several-page introduction that prepares the reader for the material that is included in the following chapters. These part openers summarize and tie together the relevant issues, thus serving as launching pads for the analyses that follow. We hope you will have your students read these part openers before embarking on any of the chapters they precede.

Every instructor will want to order a copy of the *Instructor's Manual* that accompanies *The Economics of Public Issues*. In writing this manual we have tried to incorporate the very best of the teaching aids that we use when we teach from *The Economics of Public Issues*. For each chapter, the features of this manual are:

- A synopsis that cuts to the core of the economic issues involved in the chapter.
- A concise exposition of the "behind the scenes" economic analysis on which the discussion in the text is based. For almost all of the chapters, this exposition is supplemented with one or more diagrams that we have found to be particularly useful as teaching tools.
- Answers to the Discussion Questions posed at the end of the chapter—answers that further develop the basic economic analysis of the chapter, and almost always suggest new avenues of discussion.

The world of public issues continues to evolve. By the time you read this preface, we will be working on the next edition. If you have any particular subjects you would like to see included in the future, let us know by writing us in care of Addison Wesley Longman.

Several chapters in this edition draw on the "Tangents" column that Daniel K. Benjamin writes for *PERC Reports*. We are grateful to the Political Economy Research Center (PERC) for permission to use that material. In addition, literally dozens of kind users of the last edition of this book, as well as several extremely diligent and thoughtful reviewers, offered suggestions for the current edition. Although scarcity precluded us from adopting all of their recommendations, we believe the reviewers—James Bruehler (Eastern Illinois University), Kenny Christianson (Ithaca College), Richard Coffman (University of Idaho), Michael Davis (Southern Methodist University), Jan Gerson (University of Michigan), Tawni Hunt Ferrarini (Northern Michigan University), Dianne Long (California Polytechnic State University), James McBrearty (University of Arizona), Valerie Ramey (University of California, San Diego), and Allen Sanderson (University of Chicago)—will be able to identify the impact they each had on this edition. To them and to our users who wrote to us—especially Andy Herr's students at St. Vincent College—we offer our sincere thanks and hope that the end result was worthy of their time and concern. We also thank Rebecca Ferris for shepherding the project, and Robbie Benjamin, whose editorial skills once again have improved the final product. All errors remain, of course, solely our own.

R.L.M.
D.K.B.
D.C.N.

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Part One

The Foundations of Economic Analysis

INTRODUCTION

Our world is one of **scarcity;** we want more than we have. The reason is simple. Although we live in a world of limited **resources,** we have unlimited wants. This does not mean we all live and breathe solely to drive the fastest cars or wear the latest clothes. It means that we all want the right to make decisions about how resources are used—even if what we want to do with those resources is to feed starving children in Third World nations.

Given the existence of scarcity, we must make choices; we cannot have more of everything, so to get more of some things, we must give up other things. Economists express this simple idea by saying that we face **trade-offs.** For example, a student who wants higher grades generally must devote more time to studying and less time to, say, going to the movies; the trade-off in this instance is between grades and entertainment.

The concept of a trade-off is one of the (surprisingly few) basic principles you must grasp to understand the economics of public issues. We illustrate the simplicity of these principles with Chapter 1, "Killer Airbags." It is possible you thought that the government mandated the use of automobile airbags to save people's lives. Indeed, that may well have been the motivation. But it turns out that airbags also kill some automobile occupants and induce drivers

of airbag-equipped cars to drive in ways that endanger themselves and other persons. So, like many of the issues explored in this book, there is more to automobile safety—and government policy making—than meets the eye, but with the use of some simple economic principles, you can greatly expand both your vision and your understanding of them.

Chapter 2, "Terrible Trade-off," examines a behind-the-scenes trade-off made every day on our behalf by the U.S. Food and Drug Administration (FDA). This federal government agency is charged with ensuring that the new prescription medicines that reach the market are both safe and effective. In carrying out its duties, the FDA requires pharmaceutical companies to subject proposed new drugs to extensive testing before the drugs may be introduced to the market. When the FDA requires more exhaustive testing of a drug, this improves the chances that the drug will be both safe and effective. But additional testing slows the approval of new drugs, thus depriving some individuals of the ability to use the drugs to treat their illnesses. The drug approval process undoubtedly reduces pain and suffering for some people, and even saves the lives of others, because it reduces the chances that an unsafe or ineffective drug will reach the market. Yet because the process also reduces the rate at which drugs reach the market (and may even prevent some safe, effective drugs from ever being introduced), the pain and suffering of other individuals is increased. Indeed, some individuals die as a result. This, then, is the terrible trade-off we face in Chapter 2: Who shall live and who shall die?

If trade-offs, or choices, are present in all our activities, we must face the question of how we may make the best choices. Economists argue that doing so requires the use of what we call **marginal analysis:** The term *marginal* in this context means incremental, or additional. All choices involve costs and benefits—we give up something for anything that we get. As we engage in more of any activity (eating, studying, or sleeping, for example) the **marginal benefits** of that activity eventually decline: The *additional* benefits associated with an *additional* unit of the activity get lower. In contrast, the **marginal costs** of an activity eventually rise as we engage in more and more of it. The best choices are made when we equate the marginal benefits and marginal costs of activ-

ity; that is, we try to determine when engaging in any more of a given activity would produce additional costs in excess of the additional benefits.

In Chapter 3, "Flying the Friendly Skies?", we apply the principles of marginal analysis to the issue of airline safety. How safe is it to travel at 600 miles per hour 7 miles above the ground? How safe *should* it be? The answers to these and other questions can be explored using marginal analysis. One of the conclusions we reach is that *perfect* safety is simply not in the cards: Every time you step into an airplane (or even across the street) there is some risk that your journey will end unhappily. As disconcerting as this might sound at first, we think you will find after reading this chapter that once the costs and benefits are taken into account you would have it no other way.

Armed with the principles laid out in the first three chapters, we see in Chapter 4, "Choosing Crime," how they may be applied in yet another surprising venue: crime control. When politicians pat themselves on the back for how much they are spending on crime control, they are hoping you will ignore how much they are *not* spending; after all, as long as crime exists, there could be *less* crime. Of course, if we choose to have more crime control, we must have less of other things—trade-offs are present here, too. In the short run, having fewer burglaries may mean that we end up with more murders. In the long run, the trade-off may be that of accepting poorer schools in return for better law enforcement.

Chapter 4 also illustrates that the economic principles that are so powerful in understanding the operation of markets are also enlightening when applied to nonmarket settings, such as decision making by government agencies. Indeed, many governments are using the very economic principles we are discussing to make their agencies work more like private markets. We are led to conclude that in a world of scarcity, virtually every aspect of human behavior can be better understood through the application of the principles of economics.

1

Killer Airbags

Federal law requires that new cars be equipped with devices that kill drivers and passengers. If this sounds odd, the story gets stranger when you realize these devices are supposed to—and sometimes do—*save* lives. The devices in question are airbags, and their saga illustrates almost all of the important principles you should know to understand the economics of public issues.

The airbag story begins in 1969, when the Nixon Administration first proposed requiring "passive" restraints that would protect motorists during collisions even if they took no actions to protect themselves. The ideal system was thought to be airbags that would automatically inflate in the event of a collision. But a special government study commission found the airbags then available were not only extremely costly and unreliable but were in fact dangerous to the occupants of cars, especially to young children.[1] So, instead of airbags, the government tried requiring seat belts that prevented cars from being started unless the belts were fastened. Inconvenienced consumers who disliked seat belts quickly rejected these, and the idea of airbags was revived and eventually mandated by the federal government. In anticipation of the requirements that 1998 cars have them on both the driver and

[1] *Cumulative Regulatory Effects on the Cost of Automobile Transportation (RECAT): Final Report of the Ad Hoc Committee,* Office of Science and Technology, Washington, D.C., 1972.

passenger sides, carmakers began installing airbags on selected models in 1989. By 1997, more than 65 million cars had driver-side bags, and about 35 million had them on the passenger side, too.

At first it seemed as though the earlier problems with airbags had been solved. The installed cost of about $400 apiece was far less than it would have been when the bags were initially proposed, and their reliability was dramatically increased. News reports soon began appearing with stories of seemingly miraculous survival by occupants of airbag-equipped cars in collisions. By the end of 1995, it was estimated that airbags had saved more than 1500 lives since 1989.

As the population of cars with airbags grew, however, another set of stories began to appear: Airbags deploy at speeds up to 200 mph and are designed to be most effective when used in conjunction with seat belts. It soon became apparent that people who failed to use belts, people who sat closer than the normal distance from the steering wheel or dashboard, and—most ominously—children anywhere in the front seat were at increased risk of serious injury or death due to airbag deployment. By late 1997 it was estimated that although a total (since 1989) of perhaps 2600 people owed their lives to airbags, there were more than 80 people, most of them children, who had been killed by the force of normally deploying airbags.

The outcry over the deaths of children killed in low-speed crashes by the very devices that were supposed to protect them generated action by both the private sector and the federal government. Auto manufacturers and their suppliers began developing "smart" airbags that sense the severity of a collision, the size of the person in the front seat, and whether the person is properly belted. Then, depending on the results of those measurements, the bag decides whether to deploy and at what speed it will do so. As an interim solution, in November 1997 (four and a half years after the first documented airbag fatality) the Department of Transportation announced that consumers would be allowed to apply for permission to have airbag cutoff switches installed in their vehicles. The estimated cost to consumers who have the switches installed is $150 to $200 per car.

Beginning with the 1998 model year, manufacturers also began installing less powerful airbags that inflate 22 percent less quickly

on the driver side and 14 percent less quickly on the passenger side. The result has been a sharp reduction in (although not an elimination of) airbag-induced fatalities. By 2000, airbags had been credited with saving more than 4700 lives in serious, high-speed crashes since 1989, at a cost of about 150 children killed by airbag deployments in low-speed crashes.

What can we learn from the airbag episode that will guide us in thinking about other public issues of our times? There are several general principles:

1. *There is no free lunch.* Every choice, and thus every policy, entails a **cost**—something must be given up. In a world of scarcity, we cannot have more of everything, so to get more of some things, we must give up other things. Simply put, we face trade-offs. In this case, although airbags increase the safety of most adults, there is both a monetary cost of $800 per car and a reduced level of safety for children riding in the front seat.

2. *The cost of an action is the alternative that is sacrificed.* Economists often express costs (and benefits) in terms of dollars, because this is a simple means of accounting for and measuring them. But that doesn't mean costs have to be monetary, nor does it mean economics is incapable of analyzing costs and benefits that are very human. In the case of airbags, the cost that induced action by consumers, manufacturers, and government officials was the lost lives of scores of children.

3. *The relevant costs and benefits are the marginal (or incremental) ones.* The relevant question is not whether safety is good or bad; it is instead how much safety we want—which can only be answered by looking at the added (or marginal) benefits of more safety compared to the added (marginal) costs. One possible response to the child fatalities would have been to outlaw airbags on new cars and mandate that all installed airbags be deactivated. That would have guaranteed that no more children would have been killed by airbags. But for many people (such as those without young children), this solution to airbag fatalities would not be sensible, because the marginal cost would exceed the marginal benefit.

4. *People respond to incentives.* A rise in the apparent costs of using airbags (due to airbag fatalities among children) reduced consumers' desire to utilize airbags and induced them to put pres-

sure on the federal government—pressure that convinced the Department of Transportation to change the regulations. Moreover, the simultaneous rise in the rewards of developing alternatives to today's airbags sent suppliers scurrying to find those alternatives, including "smart" airbags.

5. *Policies always have unintended consequences, and as a result, their net benefits are almost always less than anticipated.* Information, like all goods, is costly to obtain, and sometimes the cheapest way to learn more about something is simply to try it. When it is tried, new things will be learned, not all of them pleasant. More importantly, in the case of government regulations, Principle 3 (above) fails to make good headlines. Instead, what gets politicians reelected and regulators promoted are fundamental, *absolute* notions, such as "safety" (and motherhood and apple pie). Thus, if a little safety is good, more must be better, so why not simply mandate that all front-seat passengers in all cars be protected by airbags that are all the same? Eventually, the reality of Principle 3 sinks in, but in this case not before scores of children had lost their lives.

Although these basic principles of public issues are readily apparent when looking at the children who have been killed by airbags, they are just as present in two other features of airbags—neither of which has received much attention. First, most airbag deployments occur in relatively low-speed accidents (under 30 miles per hour), when the added safety benefits to properly belted occupants is low. But once the bags are deployed, they must be replaced, and often so must the windshield (blown out by the passenger-side bag) and sometimes even the dashboard (damaged as the airbag deploys). The added repair cost per car is currently estimated to be between $2000 and $2500. Thus, not only are automobile repair costs soaring due to airbags, many cars that routinely would have been repaired are now being written off completely because it is too costly to fix them.

Second, and more significantly, cars that are airbag-equipped tend to be driven more aggressively, apparently because their occupants feel more secure. The result is more accidents by such cars, more serious accidents (such as rollovers) that kill occupants despite the airbags, and a higher risk of pedestrian fatalities—none of which are accounted for in the lives-saved figures that we

quoted earlier.[2] In addition, when seat belts are worn, they are almost as good as airbags in preventing fatalities among automobile occupants. Belts reduce the fatality rate by 45 percent; adding an airbag increases this only to 50 percent. The net effect is that even though airbags are both better and less costly than they were when first proposed, it is still not clear they yield benefits that exceed their costs.

DISCUSSION QUESTIONS

1. Under what circumstances is it appropriate to trade off human lives against dollars when making decisions about safety?
2. Do you think government action allowing airbag deactivation would have been as swift or as likely if all the fatalities had been among adults rather than chiefly among small children? (Some of the airbag-induced fatalities were petite women who were sitting closer to the steering wheel than allowed for in the design calculations done on the basis of the seating behavior of the average male.)
3. Given estimates that 2600 lives had been saved by airbags, why did it take only 80 airbag-induced fatalities (rather than, say, 2600) to get the government to change the regulations?
4. Most people—and without any government regulation requiring it—have locks on their doors to protect them from intruders. If airbags are so good at protecting people from injuries and death, why were government regulations required to get them installed on automobiles?

[2] Steven Peterson, George Hoffer, and Edward Millner, "Are Drivers of Air-Bag-Equipped Cars More Aggressive? A Test of the Offsetting Behavior Hypothesis," *The Journal of Law & Economics,* October, 1995, pp. 251–264.