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**ESSAYS IN THE
ECONOMICS OF CRIME
AND PUNISHMENT**

NATIONAL BUREAU OF ECONOMIC RESEARCH

Human Behavior and Social Institutions

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ESSAYS IN THE ECONOMICS OF CRIME AND PUNISHMENT

Edited by

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and

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NATIONAL BUREAU OF ECONOMIC RESEARCH

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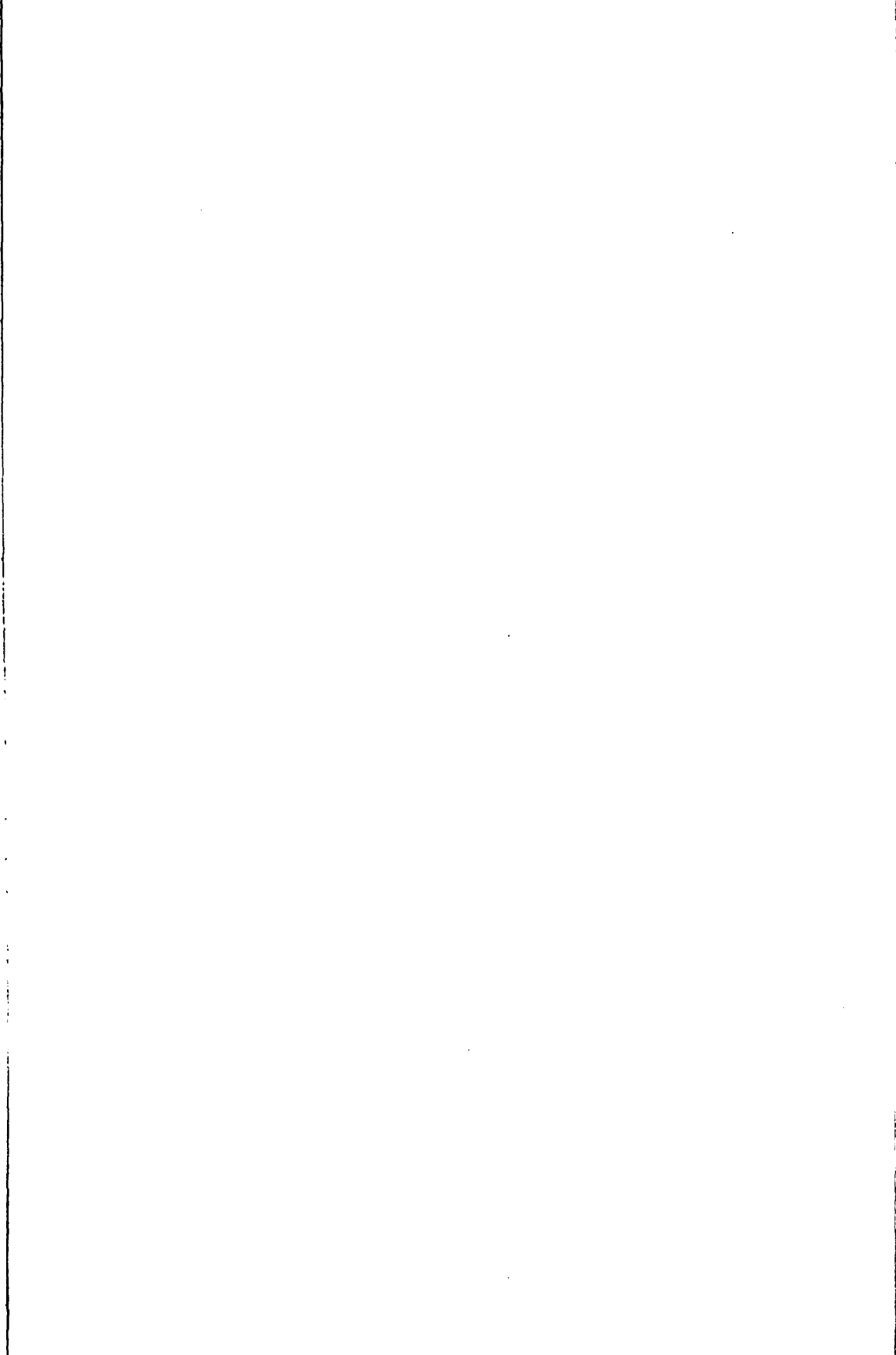
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GARY S. BECKER and WILLIAM M. LANDES

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Preface

The relationship between law and economics has long been a subject of study by economists. At least since the time of Adam Smith's analysis of the Navigation Act in England, economists have used the tools of economic theory to understand and to evaluate the effects of laws and alternative legal arrangements on the workings of an economic system. Moreover, with the rapid growth of empirical methods in recent years, economists have produced a large number of studies that attempt to quantify the actual effects of the laws. However, both the theoretical and quantitative investigations have generally taken for granted the question of enforcement. Laws are assumed to be enforced, or incomplete enforcement is acknowledged but viewed as beyond the expertise of the economist. This failure to study enforcement has been a serious deficiency, because enforcement is an essential link in the relationship between a legal and an economic system.

The distinguishing and unifying feature of the essays in this volume is the systematic study of enforcement as an economic problem. The core of the economic approach to enforcement is the application of the principle of scarcity. Because enforcement of legal rules and regulations and the adaptation to them by individuals use scarce resources, choices must be made concerning the nature of the rules to be enforced, the methods to be used in detecting violations, the types of sanctions to be imposed on violators, and the procedures to be employed in adjudicating disputes on whether violations have occurred. Taking the fundamental notion of scarcity, combined with the specification of decision rules for governments and individuals, the economic theory of resource allocation can be used to analyze enforcement, to provide insights into the operation of the legal system, and to derive testable hypotheses for empirical analysis.

All the studies in this volume embody the essentials of the economic approach, although they differ in the emphasis placed on theoretical and empirical analysis. The studies cover a variety of subjects on enforcement, including the design of optimal rules for enforcing laws, quantitative estimates of the deterrent effect of law enforcement, the role of the bail and court system in the enforcement of laws, and the behavior of adminis-

trative agencies in enforcing violations. The following is a brief description of the material presented here.

In the first essay, Gary Becker utilizes the economic theory of resource allocation to develop optimal public and private policies to combat illegal activities. Optimal policies are defined as those that minimize the social loss from crime. That loss depends on the net damage to victims; the resource costs of discovering, apprehending, and convicting offenders; and the costs of punishment itself. These components of the loss, in turn, depend upon the number of criminal offenders, the probability of apprehending and convicting offenders, the size and form of punishments, the potential legal incomes of offenders, and several other variables. The optimal supply of criminal offenses—in essence, the optimal amount of crime—is then determined by selecting values for the probability of conviction, the penalty, and other variables determined by society that minimize the social loss from crime. Within this framework, theorems are derived that relate the optimal probability of conviction, the optimal punishments, and the optimal supply of criminal offenses to such factors as the size of the damages from various types of crimes, changes in the overall costs of apprehending and convicting offenders, and differences in the relative responsiveness of offenders to conviction probabilities and to penalties. The form of the punishment is analyzed as well, with particular reference to the choice between fines and other methods.

Optimal enforcement is also the subject of the second essay. Here, George Stigler considers (a) the effects on enforcement of cost limitations; (b) the appropriate definition of enforcement costs; (c) the optimal structure of penalties and probabilities of conviction for crimes of varying severity; and (d) the determinants of supply of offenses. He shows, among other things, that an optimal enforcement policy must incorporate the principle of marginal deterrence—the setting of higher penalties and conviction probabilities for more serious offenses—to account for the offender's ability to substitute more serious for less serious offenses. In the final part of his paper, Stigler develops a model for determining the optimum enforcement policy for agencies charged with economic regulation. He provides some evidence indicating that maximum statutory penalties for violations of economic regulations have little relationship to optimal penalties.

The third essay, by Isaac Ehrlich, develops in greater detail the supply function for criminal activities that is central to Becker's and Stigler's models of optimal law enforcement. In Ehrlich's model, legal and illegal activities both yield earnings, but the distinguishing feature of illegal activities is assumed to be their uncertain outcome due to possible

punishment. Individuals may specialize in illegal or legal activities or participate in both, depending upon the alternative that maximizes their expected utility. Increases in punishments and probabilities of conviction, other things remaining constant, will lower the return from illegal activities and thereby reduce the incentive to participate in them. The main contribution of Ehrlich's study is his empirical analysis of deterrence. The continuing debate over whether punishments and conviction probabilities deter illegal behavior has been conducted with little evidence presented by either side. Using data from the 1940, 1950, and 1960 Uniform Crime Reports, and employing several statistical techniques, Ehrlich is able to measure across states, at different points in time, the response of specific felony rates to changes in variables reflecting deterrents and gains to crime. Ehrlich's results support the basic hypotheses of the economic model: crime rates appear to vary inversely with estimates of penalties, probabilities of conviction, and legal opportunities.

In the fourth essay, William Landes develops a model of an optimal bail system, using the same basic framework as Becker. Landes derives a social benefit function for the bail system that incorporates both the gains to defendants from being released on bail and the costs and gains to the rest of the community from the release of defendants. The optimal level of resource expenditures on the bail system and the optimal number of defendants to be released are determined by maximizing the social benefit. The main contribution of this essay, however, is the development of alternative methods for selecting defendants for release. Two basic methods and variations on them are analyzed. Both are consistent with the criterion of maximizing the social benefit function. The first, which corresponds to most existing bail systems, requires defendants to pay for their release. The second compensates defendants for their detention by means of monetary or other payment. There are several advantages to a system in which defendants are paid. The major advantage is a reduction in the punitive aspect of the bail system (since those detained are compensated for their losses from detention) that still allows the detention of persons in cases in which the potential damage to the community exceeds the gains from their release. Other advantages include reduced discrimination against low-income defendants and greater economic incentive for the state to improve pretrial detention facilities. The final part of Landes' paper considers the advantage of crediting a defendant's pretrial detention against his eventual sentence, the possibility of tort suits by detained defendants who are acquitted, and the role of bail bonds and bondsmen.

The development of a positive theory of legal decision-making as

applied to enforcement decisions is the common theme of the remaining two essays. In Landes' study of the court system, a utility-maximization model is developed that explains the determinants of the choice between a trial and pretrial settlement in both criminal and civil cases, the terms of a settlement, and the outcome of a trial. For criminal cases, these decisions are shown to depend on such factors as estimates of the probability of conviction by trial, the severity of the crime, the availability and productivity of resources allocated to the resolution of legal disputes, trial versus settlement costs, and attitudes toward risk. The effects of the existing bail system and court delay are analyzed within the framework of the model, as well as the likely effects of a variety of proposals designed to improve the bail system and reduce court delay. Multiple regression techniques are used on data from both state and federal courts to test several hypotheses derived from the model. Considerable empirical evidence is adduced to support the hypothesis that the cost differential between a trial and settlement in criminal cases is a significant determinant of the choice between going to trial and settling. Cost differentials, which include the implicit value of time, were measured by court queues, pretrial detention, and the subsidization of legal fees. Landes also undertakes an empirical analysis of conviction rates in criminal cases, and of the trial versus settlement choice in civil cases.

Richard Posner's study of administrative agencies employs a model similar to the one used by Landes to analyze the court system. Posner assumes that an agency maximizes expected utility subject to a budget constraint. The agency's expected utility is defined to be a positive function of both the expected number of successful prosecutions and the public benefit from winning various types of cases. Posner's model is used to predict an agency's budgetary allocation across classes of cases, the agency's dismissal rate and successful prosecution rate for different types of cases, and the effects of assigning to a single agency both prosecution and adjudication functions. The major part of the empirical analysis is devoted to examining the thesis that an agency that both initiates and decides cases will bias adjudication in favor of the agency, as compared with an agency in which these functions are separated. In the context of the model, Posner derives numerous testable implications of the "bias" hypothesis. Using data from the National Labor Relations Board, which after 1947 no longer initiated complaints, and the Federal Trade Commission, Posner finds little evidence in support of the bias hypothesis.

The essays in this volume were written by members of the National Bureau's program of basic research in law and economics. This research program, begun in 1971, applies analytical and quantitative techniques of

economics to the study of the deterrent effects of criminal sanctions, the functioning of the court and bail systems, the behavioral effects of legislation, and legal decision-making. These essays represent part of the research output of this project; each has been published over the past few years in one of several professional journals. We feel that the publication of the volume provides convincing evidence of the power of economic tools in analyzing the enforcement of law. We expect this to be the first of several volumes reporting the results of this program of research to National Bureau subscribers and to students of legal behavior and institutions. The law and economics research program is one of several housed within the National Bureau's new Center for Economic Analysis of Human Behavior and Social Institutions.

William M. Landes



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