SIXTH EDITION

Law&
Economics

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of economic and sociological factors (or possibly biological factors). The appropriate way to minimize the social costs of crime is to attack these root causes of crime—for example, to devote resources to job creation, income maintenance, family counseling, mental health, and drug and alcohol counseling.

Although public debate frames these two hypotheses as mutually exclusive, they might both be correct to some extent. If many variables cause crime, the optimal public policy for reducing it mixes criminal justice and socioeconomic programs.

Which hypothesis is true? We examine the relevant literature and then, at the end of this section, draw a tentative conclusion on the merits of alternative hypotheses. Much of the literature relies on econometrics, which is indispensible in the search for the causes of crime, but also susceptible to misuse and mistake.[16]

A. Deterrence

The usual statistical study of deterrence seeks to explain a certain kind of crime as a function of deterrence, economic, and sociological variables. These explanatory variables include, first, proxies for the probability of punishment (for example, the probabilities of being detected, arrested, and convicted) and the severity of punishment (for example, average prison sentence); second, labor market variables such as the unemployment rate and the income level of the jurisdiction; and third, socioeconomic variables such as the average age, race, and urbanization of the jurisdiction's population. The statistics may be from a single jurisdiction over time, or from different jurisdictions at the same point in time, or both.

Numerous empirical studies have this form. Here we discuss three especially noteworthy examples. First, a famous study by Isaac Ehrlich used data on robbery for the entire United States in 1940, 1950, and 1960 to estimate the deterrence hypothesis and concluded that, holding all other variables constant, the higher the probability of conviction for robbery, the lower the robbery rate.[17] Second, Alfred Blumstein and Daniel Nagin studied the relationship between draft evasion and penalties for that crime in the 1960s and 1970s. They concluded that a higher probability of conviction and a higher level of penalty caused a lower rate of draft evasion.[18] Third, a study by Kenneth

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[16] We mention two general problems with all statistical studies of deterrence. First, the accuracy of the data on the number of crimes differs significantly among jurisdictions at any point in time, and within a jurisdiction at different points in time. For example, some crimes are almost always reported to the authorities; some are rarely reported; and these reporting discrepancies differ over time and among jurisdictions. These inaccuracies may create spurious statistical relationships. (See Web Note 13.1 for more on this topic.) Second, estimated models omit some important but difficult-to-measure variables, such as whether adults were abused as children. If omitted variables correlate with included variables, the estimated relationship will be biased. Over time, improvements in measuring variables and better statistical techniques tend to overcome these two weaknesses in deterrence studies.
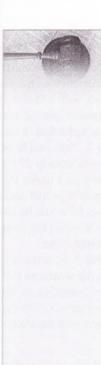
[17] Isaac Ehrlich, *Participation in Illegitimate Activities: A Theoretical and Empirical Investigation*, 81 J. POL. ECON. 521 (1973). Ehrlich also found that there was no deterrent effect attributable to the severity of punishment, as measured by the average length of a prison sentence for robbery in the years 1940 and 1960, but that there was such a deterrent effect in 1950.

[18] Alfred Blumstein & Daniel Nagin, *The Deterrent Effect of Legal Sanctions on Draft Evasion*, 28 STAN. L. REV. 241 (1977).

Wolpin used time-series data from England and Wales over the lengthy period 1894–1967 to test for a deterrent effect in those countries. Wolpin found that crime rates in the United Kingdom were an inverse function of the probability and severity of punishment.[19]

These (and other) studies found a significant deterrence effect. The National Research Council of the U.S. National Academy of Sciences established the Panel on Research on Deterrent and Incapacitative Effects in 1978 to evaluate the many academic studies of deterrence. The panel concluded that "the evidence certainly favors a proposition supporting deterrence more than it favors one asserting that deterrence is absent."[20]

These studies seek to explain the "crime rate," which is a highly aggregated statistic. Rather than studying crime rates, another approach to measuring deterrence studies the behavior of small groups of people. We know that a relatively small proportion of the population commits a large proportion of the crime. Economists have had some success in predicting who will become violent criminals. (See box titled "Guilty of Future Crimes.") We describe two studies on deterring offenses by such people.

Guilty of Future Crimes

Social scientists have modestly increasing abilities to predict crime. For example, Peter Greenwood's study for RAND titled SELECTIVE INCAPACITATION (1982) found that high-rate criminal offenders could be predicted as having seven characteristics: (1) conviction of a crime while a juvenile; (2) use of illegal drugs as a juvenile; (3) use of illegal drugs during the last two years; (4) employment less than 50 percent of the time in the previous two years; (5) incarceration in a juvenile facility; (6) imprisonment during more than 50 percent of the last two years; and (7) a previous conviction for the current offense.

A controversial conclusion that some people reach is that criminals with these characteristics should be incapacitated in prison for a longer period than other criminals. For example, M. Moore, S. Estrich, D. McGillis, and W. Sperlman give "qualified endorsement" to a policy of "selective incapacitation" in DANGEROUS OFFENDERS: THE ELUSIVE TARGET OF JUSTICE (1985). Of course, decisions about whether to grant bail, about the severity of punishment, and about parole are all currently made on the basis of predictions about the criminal disposition of the offender. In *Barefoot v. Estelle,* 463 U.S. 880 (1983), *reh. den.* 464 U.S. 874 (1983), the U.S. Supreme Court allowed psychiatric testimony on an individual's likely future dangerousness to be put before a jury that was deciding whether the defendant should be given the death penalty.

QUESTION 13.5: Does efficiency require the adjustment of punishment according to predictions about future crime? Is doing so unfair?

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[19] Kenneth Wolpin, *An Economic Analysis of Crime and Punishment in England and Wales 1894–1967,* 86 J. Pol. Econ. 815 (1978). The data were better than any comparable data from the United States and, because of the length of the time period covered, allowed for considerable flexibility in the hypotheses tested.

[20] BLUMSTEIN, COHEN, & NAGIN, EDS., DETERRENCE AND INCAPACITATION: ESTIMATING THE EFFECTS OF CRIMINAL SANCTIONS ON CRIME RATES (1978). A critique of that report may be found in Ehrlich & Mark, *Fear of Deterrence,* 6 J. LEGAL STUD. 293 (1977).

First, Professor Ann Witte followed the post-release behavior of 641 convicted criminals for three years. She gathered information on whether the men were arrested again during that period (about 80 percent were), on their previous convictions and imprisonments, on their labor-market experience after release, and on whether they were addicted to alcohol or drugs. Professor Witte tested the hypothesis that conviction and imprisonment induced these high-risk offenders to engage in fewer crimes in the future. She concluded that the higher the probability of conviction and imprisonment, the lower the number of subsequent arrests per month out of prison.[21]

Second, Charles Murray and Louis Cox, Jr., tracked the records of 317 Chicago males, with an average age of 16, who had been imprisoned for the first time by the Illinois Department of Corrections. Notwithstanding their youth, this was a hardened group of young men: Before receiving their first prison sentences, they averaged 13 prior arrests per person; as a group, they had been charged with 14 homicides, 23 rapes, more than 300 assaults, more than 300 auto thefts, almost 200 armed robberies, and more than 700 burglaries. The average sentence for their offenses was 10 months. Murray and Cox followed these young offenders for about 18 months after their release and found that during that period, the group's arrest record fell by two-thirds. The authors concluded that imprisonment served as a deterrent to future crime for this high-risk group.[22]

Governments seldom conduct experiments for social scientists by changing criminal laws in order to test for deterrence effects. Sometimes, however, governments change such laws for political reasons, and the change presents social scientists with a "natural experiment" to test for deterrence. In July 2006, the Italian Parliament passed the Collective Clemency Bill, which provided for an immediate three-year reduction in the prison sentences of all inmates who had committed a crime before May 2, 2006, and been sentenced to imprisonment for a term of greater than three years. Approximately 22,00 inmates—about 40 percent of the Italian prison population—were released under the bill's terms on August 1, 2006. The bill further said that if a former inmate who had been released under the bill committed a crime within five years of his release, he would be required to serve the remaining sentence suspended by the pardon (which varied between one month and 36 months) and the sentence given for the newly committed crime.

Francesco Drago, Roberto Galbiati, and Pietro Vertova recognized that these terms created an interesting experiment in deterrence. The possible variations in the sentences that might be imposed on former inmates for the same crime in the future (consisting of the mandated sentence for the new crime plus the add-on from the time not served from the previous conviction) created a natural experiment that might be used to measure the effects

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[21] Ann Witte, *Estimating the Economic Model of Crime with Individual Data*, 94 Q. J. ECON. 57 (1980). Additionally, she discovered that the strength of the deterrent effect varied between different classes of potential offenders. For those who engaged in serious, including violent, crimes, severity of punishment had a stronger deterrent effect than certainty of punishment. For those who engaged in property crimes, certainty of arrest and conviction had a stronger deterrent effect than severity of punishment. The deterrent effect was weakest for drug addicts. Lastly and somewhat surprisingly, the ease of subsequent employment had no significant effect on future criminal offenses.

[22] C. A. MURRAY & L. A. COX, JR., BEYOND PROBATION: JUVENILE CORRECTIONS AND THE CHRONIC DELINQUENT (1979). Note that Murray and Cox found that rearrest rates were higher for comparable juveniles who had *not* been imprisoned but instead were put on probation.

of increased prison sentences on the decision to commit a crime. Their statistical analysis concluded that "a marginal [one month] increase in the remaining sentence reduce[d] the probability of recidivism by 0.16 percent points." The authors went on to estimate an elasticity of crime with respect to prison sentences and found that figure to be approximately −0.74—that is, a 10 percent increase in prison sentence for committing a particular crime could be expected to lead to a 7.4 percent decrease in the amount of that crime committed.[23]

Economics has assimilated findings in cognitive psychology that are changing the analysis of deterrence. Perhaps the most important finding is that people are too short-sighted to be deterred by long criminal sentences. If the punishment increases from, say, two years in prison to three years, the additional years has little affect on deterring criminals, especially the young men who commit most violent crimes. Lee and McCrary demonstrated this fact in a remarkable study. The length of the sentence faced by a person who commits a crime increases sharply on the criminal's eighteenth birthday. Consequently, the deterrence hypothesis predicts a sharp decrease in crime when juvenile delinquents turn eighteen. A careful statistical analysis of Florida arrest data shows no discontinuity in the probability of committing a crime at the age of majority. So, the longer punishments when the criminal turns eighteen apparently are not deterring them from committing crime. This fact has a simple, powerful implication for criminal justice policy: Shortening sentences and redirecting expenditures away from prisons and towards police, which would decrease the severity of the punishment and increase its certainty, would deter more crimes at no more expense to taxpayers.[24]

In the same spirit as the Lee and McCrary finding, Paul Robinson of the University of Pennsylvania School of Law and John Darley of the Department of Psychology at Princeton University have argued that criminal law does not deter.[25] Let us be very careful about what the authors claim: They believe that the criminal justice system probably does deter crime, but they are very doubtful that criminal *laws* deter crime. They want to draw a distinction between such actions as the legislative manipulation of sentence length, which they believe does *not* have a deterrent effect, and such actions as increasing police patrols or the harshness of prison conditions, which they believe might deter crime.

The authors base their contention on findings in the behavioral sciences. They write that for criminal law to have a deterrent effect on a potential criminal's conduct choices, the "following three questions must all be answered in the affirmative:

1. Does the potential offender know, directly or indirectly, and understand the implications for him, of the law that is meant to influence him? That is, does the potential offender know which actions are criminalized by criminal

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[23] Drago, Galbiati, & Vertova, *The Deterrent Effects of Prison: Evidence from a Natural Experiment*, 119 J. POL. ECON. 257 (2009).

[24] David Lee and Justin McCrary, "Crime, Punishment, and Myopia," NBER Working Paper No. W11491 (2005). An earlier study found some effect of harsher punishments at the age of majority. See Steven Levitt, *Juvenile Crime and Punishment*, 106 J. POL. ECON. 1156 (1998).

[25] Robinson & Darley, *Does Criminal Law Deter?: A Behavioral Science Investigation*, 24 OXFORD J. LEGAL STUD. 173 (2004).

codes, which actions are required, and which conditions will excuse actions which are otherwise criminal?

2. If he does know, will he bring such understanding to bear on his conduct choices at the moment of making his choices?

3. If he does know the rule and is able to be influenced in his choices, is his perception of his choices such that he is likely to choose compliance with the law rather than commission of the criminal offense? That is, do the perceived costs of noncompliance outweigh the perceived benefits of the criminal action so as to bring about a choice to forgo the criminal action?"[26]

Robinson and Darley argue that there is evidence that none of these premises is true. First, they report on surveys that they and others have conducted in different states about a limited number of legal rules to ascertain how well a random sample of citizens know prevailing criminal laws. One survey found that a survey of a "target population" (not the general population) of potential offenders found that 18 percent of them had no idea what the sanctions for several crimes would be; 35 percent said that they did not pay attention to what the sanction would be; and only 22 percent thought they knew exactly what the punishment would be. So, the authors conclude that "people rarely know the criminal law rules."[27]

Robinson and Darley also point out that the overall rate of conviction for crimes is extremely low—approximately 1.3 percent of all crimes result in a conviction, and the chances of a convicted criminal's receiving a prison sentence is about 100-to-1 for most offenses; "even the most serious offenses, other than homicide, have conviction rates of single digits." Many in the general population may not know these facts. Rather, they may believe that the chances of being detected, arrested, and convicted are much higher and are, therefore, deterred from committing crime. But career criminals and their friends and relatives are likely to know how low the conviction and punishment rates really are.

One of the most intriguing points that Robinson and Darley make is that the duration of prison sentences may not have a deterrent effect. They note that people adapt fairly quickly to changed circumstances; for instance, there is evidence that within six months of incarceration prisoners have returned to their pre-incarceration level of subjective well-being. And there is compelling evidence that in remembering experiences, we all suffer from "duration neglect"—that is, we do not accurately remember the duration of good or bad experiences. So, thoughts of imprisonment may deter those of us who have not been "inside," but perhaps those who have been imprisoned recall the experience as not as bad as they had anticipated.

Robinson and Darley summarize unpublished work by Anup Malani of the University of Chicago Law School on the deterrent effect of the felony-murder rule. That rule penalizes *any* death that occurs during the commission of a crime as if it were an intentional killing. Clearly, legislators passed the felony-murder rule in the hope that criminals would take greater care during the commission of a crime by, for example, not carrying a gun and might be deterred from committing serious crimes altogether. So, the hope was that the

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[26] Id. at 175.

[27] They recognize that this is an overgeneralization. Many people know about important inflection points in the criminal sanctions, that, for example, the penalties for a given crime jump considerably when a juvenile becomes an adult. So, it should not be surprising to learn that when juveniles pass the age to become an adult, they commit fewer crimes. See Levitt, *supra* n. 24.

rule might not only lower the rate of serious injury in the commission of crimes but also lower the rate of serious crimes, such as robbery. Malani gathered data to see if he could establish the effects of the felony-murder rule on serious crime. Surprisingly, he found that the rule has had the perverse effect of "increase[ing] the rate of deaths during a robbery." Similarly with regard to rape, the overall effect of the rule was to increase the total deaths during rape by 0.15–0.16 percent. Why these perverse results obtain is still unclear.[28]

Web Note 13.2

We provide some additional information on the behavioral analysis of crime and punishment on our website.

B. Economic Conditions and Crime Rates

Committing a crime takes time and effort that could go elsewhere, such as earning money legally. A rational, amoral criminal responds to the opportunity cost of crime; so, an increase in the opportunities for earning income legally should cause a decrease in criminality. If opportunity cost has a powerful effect, then among the best policies for reducing the amount of crime are those that ameliorate economic and social conditions. For example, from 1991 to 2001 the United States had the longest period of peace-time prosperity without a recession in its history, and, as we know, this corresponded with a dramatic downturn in all sorts of crime, both violent and nonviolent. Was the economic prosperity a cause of the downturn in crime? We review briefly some empirical studies of the extent to which employment and income-enhancing policies reduce the amount of crime. (We do not discuss the statistical studies of the influence of early family life, heredity, and other noneconomic factors on crime rates.[29])

Perhaps unemployed workers commit crimes to gain income or to deal with their idle time and frustration, so that worsening employment conditions lead to an increase in the amount of property crimes. Is there a discernible relationship between cyclical fluctuations in economic conditions and crime rates? There is mixed evidence on this point. In a 1981 survey of the literature up to that date, Thomas Orsagh and Ann Witte found little evidence of a significant relationship.[30] Cook and Zarkin found a small increase in the number of burglaries and robberies during recent recessions, no correlation between the business cycle and homicides, and a countercyclical relationship between economic conditions and auto theft. They also found that long-term trends in crime rates were independent of the

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[28] Randi Hjalmarsson, *Crime and Expected Punishment: Changes in Perceptions at the Age of Criminal Majority*, Am. L. & Econ. Rev. (forthcoming 2010).

[29] See, for example, Wilson & Herrnstein, *supra* n. 14.

[30] Orsagh & Witte, *Economic Status and Crime: Implications for Offender Rehabilitation*, 72 J. Crim. L. & Criminol. 1055 (1981). This study follows up a literature survey by Robert Gillespie. Gillespie found three studies that discovered a significant relationship between unemployment and crime and seven that did not. Robert W Gillespie, *Economic Factors in Crime and Delinquency: A Critical Review of the Empirical Evidence*, pp. 601–626 in Unemployment and Crime: Hearings Before the Subcommittee on Crime of the Committee on the Judiciary (House of Representatives; Washington, D.C.: U.S. Government Printing Office, 1978).

business cycle.[31] And as already noted, the continuing decline in crime through the Great Recession of 2008–2010 seems to indicate that there is a very weak connection between aggregate economic conditions and crime rates.

These negative results do not necessarily contradict the economic theory of deterrence. In that theory, the business cycle influences the opportunity cost of crime and also the opportunities for crime. These two influences work in opposite directions. As the economy worsens, criminals have fewer opportunities for legitimate earnings, and also fewer opportunities for crime. For example, unemployment creates a motive to sell cocaine and also reduces the number of potential customers.[32] It follows that as the economy improves, the opportunity cost of crime increases, but so, too, does the take to be had from successful crime. Which of these forces dominates is still somewhat in doubt. (We return to that connection in Section VII.)

C. Does Crime Pay?

Most people never commit crime, but some people make a career of it. These career criminals apparently believe that the benefits of crime exceed the expected punishments. Why do career criminals reach a different conclusion from the rest of us? Is crime very profitable for them, or is legitimate work unprofitable for them, or do they have special attitudes toward risk and special valuations of time?

To address these questions, James Q. Wilson and Allan Abrahamse (in *Does Crime Pay?* 9 JUSTICE QUARTERLY 359 (1992)) compared the gains from crime and from legitimate work for a group of career criminals in state prisons in three states. Wilson and Abrahamse divided prisoners into two groups: mid-rate offenders and high-rate offenders. Using data from the National Crime Survey's report of the average losses by victims in different sorts of crimes, the authors estimated the annual income for criminals.[33] They then compared these estimates of the income from crime with the prisoners' estimates of their income from legitimate sources. Two-thirds of the prisoners had reasonably stable jobs when they were not in prison and, on average, the prisoners believed that they made $5.78 per hour at those legitimate jobs.

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[31] Philip J. Cook & Gary A. Zarkin, *Crime and the Business Cycle,* 14 J. LEGAL STUD. 115 (1985). This is, perhaps, surprising given the correlation between the business cycle and less serious property crimes and the usual belief that there is a correlation between those property crimes and homicides. See also Richard Freeman, *Crime and Unemployment,* in JAMES Q. WILSON, ED., CRIME AND PUBLIC POLICY (1983), and James Q. Wilson & Philip J. Cook, *Unemployment and Crime—What Is the Connection?,* 79 PUBLIC INTEREST 3 (1985).

[32] An excellent discussion of the literature on deterring crime through increasing the benefits of legal alternatives may be found in WILSON, THINKING ABOUT CRIME (rev. ed. 1983), pp. 137–142.

[33] For example, they estimated that the value of a stolen car was 20 percent of its market value. And following a study of drug dealing in Washington, D.C., they estimated that the net income of the average drug dealer was $2,000 per month. More recent survey evidence by Levitt and Venkatesh suggests that the annual incomes of most drug dealers is much less than that of minimum-wage employees (see *Freakonomics* Ch. 3 ("Why Do Drug Dealers Still Live with Their Moms?") (2006)). Levitt and Venkatesh have also written on the economics of street prostitution, showing that it is not at all financially rewarding (see "An Empirical Analysis of Street-Level Prostitution" (September, 2007) and *Superfreakonomics* Ch. 1 ("How Is a Street Prostitute Like a Department-Store Santa?") (2009)).