

**THE ECONOMICS OF ENFORCING ENVIRONMENTAL
LAWS: A CASE FOR LIMITING THE USE OF CRIMINAL
SANCTIONS**

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I. INTRODUCTION

"[C]riminal enforcement of environmental laws is the most effective means to ensure compliance."¹

It may be the case that there is no greater legal deterrent for environmental violations than the threat of criminal prosecution and incarceration; however, it does not necessarily follow that criminal enforcement of environmental laws leads to the most favorable outcome for society. Part of the problem with making such a determination is that there are so many interested parties, yet there is no agreement on how much weight should be given to the concerns of each party. Much of the early law-based literature took for granted that the paramount consideration in enforcing environmental regulations was to protect the environment by deterring all violations of environmental laws. In this Note, however, I attempt to balance the interests of firms affected by environmental regulations, consumers of those firms' products, individuals affected by violations of environmental regulations, and the agencies in charge of regulating polluters. I conclude that, in many instances, criminal enforcement of environmental laws is misguided. Instead, I suggest that civil and administrative penalties are preferable means of enforcing environmental violations.

I begin in Part II by explaining the theories used by lawyers and economists to support or oppose criminal enforcement of laws. In Part III, I address the major concerns of the interested parties in the context of environmental regulations so that the reader can consider the social implications of different enforcement schemes. Next, in Part IV, I discuss the various levels of culpability required by environmental statutes in order to impose criminal liability on the offender. In Part V, I explain the basics of benefit-cost analysis as applied by both polluters and enforcers. In addition, I weigh the potential benefits of, and problems with, efficient breaches of environmental regulations.

With all of this theoretical background in place, I continue in Part VI by analyzing U.S. Environmental Protection Agency (EPA) enforcement figures from 2000-2006,² drawing inferences about the EPA's difficult decision between criminal, civil, and administrative enforcement. In so doing, I find that the number of environmental crime investigations has declined since 2002, but that

1. Ethan H. Jessup, *Environmental Crimes and Corporate Liability: The Evolution of the Prosecution of "Green" Crimes by Corporate Entities*, 33 NEW ENG. L. REV. 721, 725 (1999).

2. See *infra* fig.1.

the percentage of investigations resulting in charges has actually increased since 2003.³ I also find that during the period in which criminal investigations decreased, civil judicial penalties were on the rise, suggesting that the EPA may, in fact, be pursuing civil and administrative penalties in many cases, leaving criminal prosecution for the more egregious violations.⁴ In Part VII, I discuss other, less conventional approaches to solving some of the problems addressed in the Note. Finally, I conclude by suggesting areas in which empirical studies could be conducted to aid officials in determining how best to enforce environmental laws.

II. CRIMINAL ENFORCEMENT OF ENVIRONMENTAL REGULATIONS

A. Legal Theories

In order to discuss the appropriate enforcement method for violations of environmental regulations, one must first understand the various enforcement mechanisms in general and the theories behind criminal law.⁵ Laws may be enforced through three bodies of law—criminal, civil/tort, and administrative—each with “its own definitions, standards of proof, procedures, and remedies.”⁶ Generally, criminal laws “require intent, are publicly enforced, and do not require that a victim be harmed”; tort laws, on the other hand, “do not require intent, are privately enforced, and require the plaintiff to establish damages.”⁷

A primary purpose of any criminal law is to deter people from committing crimes.⁸ Because of their power to take away the freedom of the actor, criminal sanctions provide a strong method of deterrence.⁹ Although civil actions can have serious effects, the consequences of a criminal investigation and prosecution are more severe, carrying the possibility of monetary penalties, jail time, and a “stigma of criminality.”¹⁰ This is particularly true for corporate officials, who tend to be especially concerned about their social status.¹¹ In addition, “environmental criminal defendant[s] [may]

3. See *infra* fig.2.

4. See *infra* fig.4.

5. Mark A. Cohen, *Environmental Crime and Punishment: Legal/Economic Theory and Empirical Evidence on Enforcement of Federal Environmental Statutes*, 82 J. CRIM. L. & CRIMINOLOGY 1054, 1057 (1992).

6. *Id.* at 1058.

7. *Id.*

8. Jessup, *supra* note 1, at 730.

9. *Id.*

10. Kevin A. Gaynor et al., *Environmental Criminal Prosecutions: Simple Fixes for a Flawed System*, 3 VILL. ENVTL. L.J. 1, 2 (1992).

11. Kathleen F. Brickey, *Environmental Crime at the Crossroads: The Intersection of*

incur several hundred thousand dollars in attorneys' fees if a case goes to trial."¹² Due to the strength of criminal charges, many regulators view criminal enforcement as the greatest deterrent to environmental violations.¹³

Criminal law is also employed to express "society's sense of moral outrage and condemnation" because it considers the actor's conduct culpable.¹⁴ As a result, society's beliefs are crucial to "determining whether an act is criminal and to what extent that act should be punished."¹⁵ Unfortunately, as public pressure to protect the environment increases,¹⁶ and because criminal prosecutions make "appealing headlines," agencies may seek criminal enforcement when administrative or civil actions are appropriate.¹⁷

Another goal of criminal law is remediation, which becomes an issue when an actor continues to violate an environmental regulation even after an enforcement agency becomes aware of the violation.¹⁸ Persistent violations can create a serious hazard to human health and the environment.¹⁹ Because of the efficiency of the criminal system compared to a civil or administrative action, criminal prosecution may be necessary where a violator does not change its activities once the violations are revealed.²⁰

B. Economic Theories

According to Judge Richard Posner, the distinction between criminal and tort law is not based on intent.²¹ Rather, he posits that the purpose of criminal law in a capitalist society is to prevent

Environmental and Criminal Law Theory, 71 TUL. L. REV. 487, 506 (1996); see also Sean J. Bellew & Daniel T. Surtz, Comment, *Criminal Enforcement of Environmental Laws: A Corporate Guide to Avoiding Liability*, 8 VILL. ENVTL. L.J. 205, 209-10 (1997) (noting that prosecution of white-collar crime may have a greater deterrent effect than prosecution of street crimes because of the "severe personal consequences" that result from criminal investigation and prosecution).

12. Gaynor et al., *supra* note 10, at 2.

13. *Id.* at 2-3.

14. Brickey, *supra* note 11, at 506.

15. Jessup, *supra* note 1, at 731.

16. See Eva M. Fromm, *Commanding Respect: Criminal Sanctions for Environmental Crimes*, 21 ST. MARY'S L.J. 821, 823 (1990); see also Bellew & Surtz, *supra* note 11, at 205 n.2.

17. Fromm, *supra* note 16, at 823.

18. See Jessup, *supra* note 1, at 731.

19. *Id.*

20. *Id.*

21. See Richard A. Posner, *An Economic Theory of the Criminal Law*, 85 COLUM. L. REV. 1193, 1194 (1985). Posner asserts that in criminal law, placing the emphasis "on punishing harmless preparatory activity, on the mental state of the accused, and, related to both points, on the moral character rather than the consequences of behavior, suggests a decidedly noneconomic perspective." *Id.* However, Posner disagrees with this distinction and believes both criminal law and common law can be given economic meaning. *Id.*

people from bypassing voluntary exchanges in the “market.”²² Since most of this market bypassing (for example, murders and rapes) cannot be deterred by tort law (because the amount of damages would far exceed the offender’s ability to pay), non-monetary sanctions such as imprisonment are required.²³ If a defendant can afford to pay the social costs of his actions, however, “there still is no social gain from using a criminal sanction.”²⁴

1. *Prices and Sanctions*

In determining how best to enforce a law or regulation, economists often distinguish between prices and sanctions. Professor Robert Cooter has defined a sanction as “a detriment imposed for doing what is forbidden, and a price as money extracted for doing what is permitted.”²⁵ If the forbidden behavior is sanctioned, then an actor’s behavior changes drastically when it moves “from the permitted zone into the forbidden zone.”²⁶ If the forbidden behavior is subject to a price instead of a sanction, however, the actor’s behavior becomes much “more elastic with respect to changes in” the price imposed.²⁷ As a result, Cooter explains, prices should be used “to compel decisionmakers to take into account the external costs of their acts,” whereas sanctions should be imposed “to deter people from doing what is wrong.”²⁸

The difference in behavior elasticity thus becomes important to lawmakers. If they are able to identify socially desirable behavior, but have difficulty accurately assessing the cost of deviations from that behavior, then sanctions should be preferred over prices.²⁹ If, on the other hand, “officials can accurately measure the external cost of behavior, but cannot accurately identify the socially desirable level of it, then prices are preferable to sanctions.”³⁰ For example, in the context of power plant emissions, officials are able to identify the socially desirable behavior—low emission levels—but have difficulty accurately assessing the costs of deviations from that behavior—detriment to air quality and human health from high emissions—so sanctions may be preferable to prices under Cooter’s model.

22. *Id.* at 1203.

23. *Id.*

24. *Id.* at 1204.

25. Robert Cooter, *Prices and Sanctions*, 84 COLUM. L. REV. 1523, 1523 (1984).

26. *Id.*

27. *Id.* at 1523-24.

28. *Id.* at 1523.

29. *Id.* at 1524.

30. *Id.*

2. Conditional Versus Unconditional Deterrence

The Learned Hand formula, which weighs the defendant's cost of avoiding an accident against the plaintiff's loss resulting from the accident, multiplied by the probability of the accident's occurrence, is applied by courts to cases involving unintentional torts.³¹ For criminal acts, however, the value to the defendant is irrelevant because society does not want actors to bypass the market and transfer goods through coercion.³²

Some crimes, on the other hand, result from activities that society does not want to eliminate entirely.³³ If the penalties for engaging in these activities are too severe, then there is a risk that people will engage in them less frequently than is socially desirable.³⁴ As a result, activities can be divided into those that we seek to deter "conditionally" and those we seek to deter "unconditionally."³⁵ A conditionally deterred activity is one in which society benefits from the underlying activity (such as breach of contract) that gives rise to the violation.³⁶ An unconditionally deterred activity (such as murder) is one in which the breaching party should be punished regardless of his or her benefit and the victim's costs.³⁷

Regulatory violations are typically conditionally deterred activities because "society benefits from the underlying activity."³⁸ Therefore, we do not want to increase the price of engaging in socially beneficial activities to a level that would deter firms from engaging in them.³⁹ This is especially true for regulatory violations such as oil spills that may not be entirely within the control of the firm or its employees.⁴⁰ If the costs incurred by oil companies as a result of the sanctions stemming from a spill made it too costly to conduct business, society would suffer from either increased oil prices or oil shortages.

Another issue that arises in the context of conditionally deterred activities is whether to base the enforcement method on the gain to the offender or on the harm to society.⁴¹ If the offender's punishment were based on his or her gain, then all conditionally

31. RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 69 (2d prtg. 1974).

32. Posner, *supra* note 21, at 1195-98.

33. Cohen, *supra* note 5, at 1062.

34. *Id.*

35. *Id.*

36. *See* POSNER, *supra* note 31, at 357-58.

37. *See id.* at 358.

38. Cohen, *supra* note 5, at 1062.

39. *Id.*

40. *Id.*

41. *Id.* at 1062-63.

deterred activities would, in effect, become unconditionally deterred because there would be no opportunity for gain.⁴² Therefore, “the debate over whether to base sanctions on gain or on harm is essentially a debate over whether or not society wishes to ‘conditionally deter’ some crimes.”⁴³

3. *The “Optimal Penalty” Model*

In addition to overdetering socially beneficial activities, criminal enforcement of environmental regulations resulting in jail time may be very costly to society. Jail sentences result not only in resources being expended to build and operate prisons, but also in the lost productivity of the offender who is unable to work.⁴⁴ Although it may be difficult to accurately measure the overall gain that results from incarcerating an offender because of the hard-to-quantify indirect benefits (such as deterrence of potential violators and elimination of possible future infractions by the imprisoned offender), the indirect costs to society raised by the optimal penalty model should certainly be considered by lawmakers when determining the most effective regulatory regime for environmental violations.

III. CONCERNS OF THE INTERESTED PARTIES

One of the problems with determining the appropriate method of enforcing environmental regulations is accounting for the concerns of all of the interested parties. This Part examines those concerns, which should be kept in mind throughout this Note.

A primary concern of the offender is fairness.⁴⁵ “Perfect compliance with environmental laws is nearly, if not completely, impossible.”⁴⁶ As a result, a firm may be convicted for a relatively minor violation that it was unaware it had even committed.⁴⁷ Thus, it would be unfair to that firm for the Department of Justice (DOJ) to pursue aggressive criminal sanctions in order to set an example to the many offenders it has neither the time nor the re-

42. *Id.*

43. *Id.*

44. Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169, 179-80 (1968).

45. David C. Fortney, Note, *Thinking Outside the “Black Box”: Tailored Enforcement in Environmental Criminal Law*, 81 TEX. L. REV. 1609, 1615 (2003).

46. *Id.* See generally Richard J. Lazarus, *Meeting the Demands of Integration in the Evolution of Environmental Law: Reforming Environmental Criminal Law*, 83 GEO. L.J. 2407, 2428-40 (1995) (describing the complexity of environmental law).

47. See, e.g., Fortney, *supra* note 45, at 1615-16.

sources to go after.⁴⁸

In addition, firms must worry that criminal liability will be imposed on the entire organization for the uncontrollable acts of one employee.⁴⁹ While it is common to hold employers liable for the acts of their employees committed in the course of employment, vicarious liability “is a doctrine of civil, not criminal, liability.”⁵⁰ Criminal environmental jurisprudence has evolved, nevertheless, to transfer liability to firms and officers without the requisite mental state.⁵¹

The concerns of corporate officers, most notably the mental state required to impose individual criminal liability, must also be accounted for. Facing criminal sanctions merely because of one’s position within an organization is a difficult reality to face.⁵² Although some cases involve officers who participated in, or knew of, the violations, officers can be convicted under most environmental statutes even when this is not the case.⁵³ The idea that someone can be incarcerated “for an act [that he or she] neither committed nor knew about violates the most basic premise of American criminal law—that” sanctions be applied only to those with criminal minds.⁵⁴

The interests of the government are, of course, central to any enforcement scheme. The DOJ and regulatory agencies are forced to work with limited resources, which are spread over a wide range of enforcement activity.⁵⁵ Moreover, in response to public demand for results, the government may focus too much on “easy” cases (such as small business violations) and on corporate defendants with deep pockets.⁵⁶

There remain a number of crucial societal concerns to consider as well. First, the public has an interest in environmental enforcement programs that encourage prevention over punishment because the harm caused, even if compensable, is often permanent.⁵⁷ Next, society has an interest in punishment, as any regulatory scheme is unlikely to stop every offender.⁵⁸ As a result, it

48. *Id.* at 1616.

49. *Id.*

50. *Id.* at 1616-17 (citing W. PAGE KEETON ET AL., PROSSER & KEETON ON THE LAW OF TORTS § 2 (5th ed. 1984)).

51. See discussion *infra* Part IV.B.

52. Fortney, *supra* note 45, at 1617-18.

53. *Id.* at 1618.

54. *Id.* (citing WAYNE R. LAFAVE & AUSTIN W. SCOTT, CRIMINAL LAW §§ 1.2, 3.1 (2d ed. 1986)).

55. *Id.* at 1619.

56. *Id.*

57. *Id.* at 1619-20.

58. *Id.* at 1620.

may be unwise to abolish the ability to prosecute offenders criminally, especially in the case of repeat polluters who refuse to comply.⁵⁹ Finally, society has an interest in the efficient use of taxes.⁶⁰ While “[e]nvironmental protection is an admirable and necessary policy goal, [] it should not be achieved at the cost of bankrupting either American business or American consumers.”⁶¹

IV. CULPABILITY REQUIREMENTS OF ENVIRONMENTAL CRIMES

A. Knowing Violations

Many environmental statutes require “knowing” violations to obtain criminal convictions.⁶² Kevin A. Gaynor, Jodi C. Remer, and Thomas R. Bartman argue, however, that

[g]iven the serious nature of the crimes and the penalties involved, the complexity of the laws, and the broad applicability of the federal environmental laws to American society; a higher level of culpability should be imposed, either as a matter of prosecutorial discretion or through statutory amendment. This higher standard would establish a bright line between those environmental violations that are criminal and those that are civil and administrative, thereby guiding prosecutors and establishing standards of conduct that the public can understand.⁶³

They explain that, in the context of environmental statutes, “knowingly” has been interpreted by courts “not to require knowledge that one is violating the law, but merely requires an awareness of one’s act.”⁶⁴ Under this standard, the government may establish the knowledge element much easier than it could under

59. See generally Susan F. Mandiberg, *Moral Issues in Environmental Crime*, 7 FORDHAM ENVTL. L.J. 881 (1996) (discussing the interaction between regulatory and criminal law doctrines).

60. Fortney, *supra* note 45, at 1620.

61. *Id.*

62. Gaynor et al., *supra* note 10, at 4.

63. *Id.* at 4-5. In further support of changes to the environmental criminal system, they discuss the absence of mechanisms for uniform application of environmental laws. *Id.* at 5-11. While this may be an effective argument, changes could be made by Congress or other regulatory agencies to correct the problem. In addition, some writers argue that the prosecutorial discretion granted by environmental regulations is not really a problem at all. See, e.g., David A. Barker, Note, *Environmental Crimes, Prosecutorial Discretion, and the Civil/Criminal Line*, 88 VA. L. REV. 1387, 1388 (2002). While this issue should be considered, it will not be addressed in detail in this Note.

64. Gaynor et al., *supra* note 10, at 12.

non-environmental criminal statutes requiring knowledge.⁶⁵

The congressional history regarding the adoption of the knowledge standard under the Resource Conservation and Recovery Act (RCRA)⁶⁶, however, indicates that it was intended to give prosecutors the enforcement authority to address more egregious violations, but also protect “the rights of corporate executives whose knowledge of their companies’ waste disposal practices was incomplete.”⁶⁷ Therefore, by modifying the current environmental laws and their enforcement, clear lines could be drawn as to what is criminal and what is not, enabling well-intentioned actors to avoid criminal liability and the government to focus its resources on the worst offenders.⁶⁸

B. The Responsible Corporate Officer Doctrine

“Criminal liability is imputed to [a] corporation when three conditions have been met: a crime has been committed, the defendant employee is acting within the scope of his employment, and the defendant employee intended to benefit the corporation.”⁶⁹ Because corporations have no conscience and can express no remorse, prosecutors sometimes attempt to reach into corporations and impose liability on its officers and directors.⁷⁰ The theory used most commonly to impute responsibility in environmental actions is “the responsible corporate officer doctrine,” which stems from two U.S. Supreme Court cases.⁷¹

In *United States v. Dotterweich*,⁷² the president and general manager of a pharmaceutical company, Dotterweich, was prosecuted under the Federal Food, Drug, and Cosmetic Act.⁷³ Although he was unaware of the violation when it occurred and it was not alleged that he actively participated in the wrongdoing, he

65. *Id.* at 11.

66. 42 U.S.C. §§ 6901-6992 (2000).

67. Christopher Harris et al., *Criminal Liability for Violations of Federal Hazardous Waste Law: The “Knowledge” of Corporations and Their Executives*, 23 WAKE FOREST L. REV. 203, 207 (1988).

68. Gaynor et al., *supra* note 10, at 30-31.

69. Janet L. Woodka, Comment, *Sentencing the CEO: Personal Liability of Corporate Executives for Environmental Crimes*, 5 TUL. ENVTL. L.J. 635, 647 (1992).

70. *Id.* at 648.

71. *Id.* at 649. For a detailed description of the responsible corporate officer doctrine as applied to environmental law, see generally Lisa Ann Harig, Note, *Ignorance Is Not Bliss: Responsible Corporate Officers Convicted of Environmental Crimes and the Federal Sentencing Guidelines*, 42 DUKE L.J. 145 (1992) (arguing that the responsible corporate officer doctrine should only be applied to crimes having a scienter requirement insofar as it advances the goals of the criminal justice system and in favor of downward departures in sentencing under the Guidelines).

72. 320 U.S. 277 (1943).

73. *Id.* at 278.

was nevertheless held responsible as a result of his position in the company.⁷⁴ In *United States v. Park*,⁷⁵ another president of a large corporation, Park, was held liable under the Federal Food, Drug, and Cosmetic Act, despite his having delegated responsibility to lower level employees.⁷⁶ The Court explained that since Park was aware of previous violations and was in a supervisory position, he had a duty both to seek out violations and “to implement measures that will insure that violations will not occur.”⁷⁷ Moreover, the public has a right to expect that its health and well-being will be considered by “those who voluntarily assume positions of authority in business enterprises.”⁷⁸

Since *Park*, there has been “a ‘should have known’ standard of responsibility on corporate officers for activities or violations that they supervise.”⁷⁹ “Such an apparent abandonment of any mens rea standard raises disturbing questions when these officers are incarcerated without reference to whether or not they possessed culpable states of minds.”⁸⁰ The case has also been used, however, as a “defense to corporate officers because the presumption of responsibility arising from a corporate position may be rebutted with evidence that the corporate officer was “powerless” to prevent or correct the violation.”⁸¹ Moreover, the doctrine may be restricted to cases where the director either had direct control over the actions of the corporation or knew of previous violations.⁸²

C. Negligent Violations

Some statutes impose criminal liability merely by a showing of negligence.⁸³ Employing a negligence standard to criminally sanction corporate officers raises serious issues, namely whether it is just to imprison corporate officers for accidents that result from

74. *Id.* at 280-81.

75. 421 U.S. 658 (1975).

76. *Id.* at 660, 677.

77. *Id.* at 672.

78. *Id.*

79. Woodka, *supra* note 69, at 650.

80. Truxtun Hare, Comment, *Reluctant Soldiers: The Criminal Liability of Corporate Officers for Negligent Violations of the Clean Water Act*, 138 U. PA. L. REV. 935, 936 (1990). But see Jeffrey R. Escobar, Note, *Holding Corporate Officers Criminally Responsible for Environmental Crimes: Collapsing the Doctrines of Piercing the Corporate Veil and the Responsible Corporate Officer*, 30 NEW ENG. J. ON CRIM. & CIV. CONFINEMENT 305, 307 (2004) (arguing that RCRA and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) have made it nearly impossible to criminally prosecute corporate officers and advocating for a lower requisite mens rea than is statutorily provided).

81. Woodka, *supra* note 69, at 650 (quoting *Park*, 421 U.S. at 673).

82. *Id.* (citing *Park*, 421 U.S. at 673).

83. Gaynor et al., *supra* note 10, at 11; see also Federal Water Pollution Control Act, 33 U.S.C. § 1319(c)(1) (2000).

negligent decisions or actions and what is the requisite degree of negligence for criminal culpability.⁸⁴ Although some scholars argue that a negligence standard is necessary to deter people from engaging in particularly harmful activities,⁸⁵ others maintain “that to punish conduct without clear reference to an actor’s state of mind ‘is both inefficacious and unjust’ and will not deter others from behaving similarly in the future.”⁸⁶

V. BENEFIT-COST ANALYSIS IN THE DECISION-MAKING PROCESS OF POLLUTERS AND ENFORCERS

If economists are to advocate what they believe to be effective regulatory policy to environmental agencies and the legislature, they need to have an effective and reliable method of reaching their conclusions. One approach often employed by economists is benefit-cost analysis, which is “an economic tool for comparing the desirable and undesirable impacts of proposed policies.”⁸⁷ Environmental benefits are often defined as the value of obtaining a cleaner environment, while costs are measured by the increased prices of meeting a regulatory objective.⁸⁸

Problems arise, however, in measuring the benefits and costs of environmental programs.⁸⁹ For one, many benefits and costs involve elements (such as health and aesthetics) for which there are no market values.⁹⁰ In addition, policy makers are often reluctant to attach monetary values to things such as human life.⁹¹ In response, economists have developed techniques for measuring the benefits of pollution control by determining the relationships between environmental quality and various goods.⁹² They have also directly questioned individuals about their valuation of environmental goods in an attempt to determine the value placed on an

84. Hare, *supra* note 80, at 938. Hare also questions whether a criminal negligence standard coupled with the responsible corporate officer doctrine violates the due process principles of the Constitution. *Id.* at 973-75.

85. *Id.* at 960 (citing 1 HOLMES-LASKI LETTERS 806 (M. Howe ed. 1953)).

86. *Id.* at 965 (quoting Herbert L. Packer, *Mens Rea and the Supreme Court*, 1962 SUP. CT. REV. 107, 109 (1962)).

87. Kenneth J. Arrow et al., *Is There a Role for Benefit-Cost Analysis in Environmental, Health, and Safety Regulation?*, 272 SCI. 221, 221 (1996). See generally Karen Palmer et al., *Tightening Environmental Standards: The Benefit-Cost or the No-Cost Paradigm?*, 9 J. ECON. PERSPECTIVES 119 (1995) (discussing the benefit-cost approach).

88. Arrow et al., *supra* note 87, at 221.

89. Maureen L. Cropper & Wallace E. Oates, *Environmental Economics: A Survey*, 30 J. ECON. LIT. 675, 677 (1992).

90. *Id.*

91. *Id.*

92. *Id.*

improved environment.⁹³

This benefit-cost framework for environmental programs, however, may not translate well to determining the appropriate punishment (for example, fines, imprisonment, and taxes) for environmental violations. That is, we do not necessarily want to ensure compliance with environmental regulations across the board; rather, we want to ensure compliance when society is best off without a breach and ensure just compensation to the parties harmed when society is better off if the actor does not comply with the regulation.

A. “Efficient Breach” of Environmental Regulations

Frank H. Easterbrook and Daniel R. Fischel have written that “[m]anagers have no general obligation to avoid violating regulatory laws, when violations are profitable to the firm.”⁹⁴ Under this theory, which is referred to as “efficient breach of public law,”⁹⁵ they explain:

[M]anagers do not have an ethical duty to obey economic regulatory laws just because the laws exist. They must determine the importance of these laws. The penalties Congress names for disobedience are a measure of how much it wants firms to sacrifice in order to adhere to the rules; the idea of optimal sanctions is based on the supposition that managers not only may but also should violate the rules when it is profitable to do so.⁹⁶

Other scholars have relied upon the idea of “efficient investment in compliance,”⁹⁷ which suggests that the maximum amount of money a firm should invest in order to comply with the law is determined by the maximum penalty for violations of a particular law, since it would be inefficient to invest more in compliance than one risks in fines.⁹⁸

Both of these views, however, have been subject to criticism for

93. *Id.*

94. Frank H. Easterbrook & Daniel R. Fischel, *Antitrust Suits by Targets of Tender Offers*, 80 MICH. L. REV. 1155, 1168 n.36 (1982).

95. Cynthia A. Williams, *Corporate Compliance with the Law in the Era of Efficiency*, 76 N.C. L. REV. 1265, 1324 (1998).

96. Easterbrook, *supra* note 94, at 1177 n.57.

97. Williams, *supra* note 95, at 1342.

98. David L. Engel, *An Approach to Corporate Social Responsibility*, 32 STAN. L. REV. 1, 43-45 (1979).

their lack of sound legal and political foundation.⁹⁹ Professor Cynthia Williams argues, for example, that these theories “understate the significance of law . . . [by] treating vast realms of law as simply a pricing scheme or set of tariffs on behavior.”¹⁰⁰ She refers to these types of theories as “the ‘law-as-price’ view of law”¹⁰¹ and maintains “that regulatory law should not be viewed as . . . something citizens are free to choose to ignore by accepting or risking the known consequences.”¹⁰² Professor Williams, although conceding that “[l]aw is functionally voluntary in the sense that each decision to follow the law is undertaken voluntarily,” argues that “[it] is not voluntary in the sense advocated by the law-as-price view, at least not in any serious philosophical way.”¹⁰³

While there may be morality problems and philosophical pitfalls with the price-as-law theories, they must not be dismissed on these bases alone. One of the main arguments against efficient breaches of environmental regulations is that economic arguments are steeped in theories that are either not supported by empirical data or, if relied upon by individuals and firms in their decision-making process, would create serious and irreversible problems in the “real world.” The rationales propounded by people who oppose the economic view (such as Professor Williams) are, however, similarly based on irrefutable theoretical and philosophical arguments.

In addition, those who oppose the economic view often fail to recognize the overall benefit to society that may be derived from an efficient breach, instead focusing only on the profits reaped by the offending firm. In deciding to take an economic opportunity that violates a law or regulation—or even acting in a way that negligently poses a risk of doing so—an individual or firm does not serve itself alone. Rather, the consumers of the firm’s products or services also derive some gain. If the cost to the actor becomes too high to engage in the activity,¹⁰⁴ then society is worse off because it is unable to receive the goods or services provided by that firm or is forced to do so at a higher price. By imposing fines instead of criminal sanctions, on the other hand, firms are able to build these costs into their prices, enabling the consumer to decide whether

99. Williams, *supra* note 95, at 1267.

100. *Id.*

101. *Id.*

102. *Id.* at 1270.

103. *Id.* Williams supports her view with the American Law Institute’s Tentative Draft of its Corporate Governance project, which maintains that the law-as-price arguments are “premised on a false view of the citizen’s duty in a democratic state.” *Id.* at 1271-72 (citing AMERICAN LAW INSTITUTE PRINCIPLES OF CORPORATE GOVERNANCE AND STRUCTURE: RESTATEMENT AND RECOMMENDATIONS § 2.01 cmt. f. (Tentative Draft No. 1, 1982)).

104. For example, if officials decide to impose sanctions such as jail time instead of prices such as fines. See *supra* Part II.B.1.

the good or service is worth the price.¹⁰⁵

Moreover, Williams' assertion that even though individuals balance the costs and benefits of their decisions about whether or not to comply with a law on a daily basis, there is something fundamentally wrong with firms doing the same is flawed. Rather, the opposite may in fact be true. Although individuals balance the costs and benefits of compliance, we put our reputation on the line each time we decide to violate a law or regulation. Officers of firms, on the other hand—especially those firms that have shareholders—are forced to make decisions based on what is in the firm's best interest. Therefore, the behavior of an officer or manager of a firm may be completely inelastic in his or her personal life—he or she refuses to break a law regardless of the potential benefit—but he or she may make a decision for the firm to violate a law or regulation because it is in the firm's best interest.¹⁰⁶

As a result, an individual or firm's decision about whether to violate a law or regulation—either intentionally as an efficient breach or by acting in a way that will increase its risk of violation—is going to be based on the type and extent of the enforcement mechanism in place. Although the American Law Institute (ALI) has opposed the law-as-price models, the American Bar Association's (ABA) Committee on Corporate Laws has provided “that criminal law is the only important mandatory law, and that intentional violations of civil law may not be problematic and may even be of social benefit in some instances.”¹⁰⁷ Thus, if economists hope to gather support for their positions that 1) law as price models, in some instances, benefit society as a whole and 2) individuals and firms will only intentionally breach laws (or perhaps even risk violating them) when the penalties imposed are civil as opposed to criminal, then they will have to put forth reliable empirical data proving the validity of these positions.¹⁰⁸

105. *But see* Bellew & Surtz, *supra* note 11, at 209 (arguing that criminal enforcement is preferable to civil fines because they “shatter corporations' belief that civil fines are merely a license to pollute or a business cost that can be passed on to the consumer.”).

106. See, for example, *Smith v. Nat'l Transp. Safety Bd.*, 981 F.2d 1326, 1328 (D.C. Cir. 1993), in which Judge Douglas H. Ginsburg explained that the purpose of giving the public notice of the law

is so that each individual can act accordingly. Usually that means conforming to the law, but sometimes it means violating the law (or coming close and risking a violation) and accepting the known consequences of doing so—especially where a regulatory rather than a moral or criminal norm is concerned.

107. Williams, *supra* note 99, at 1275 (citing ABA Committee on Corporate Laws, *Changes in the Revised Model Business Corporation Act—Amendment Pertaining to the Liability of Directors*, 45 BUS. LAW. 695, 700-703 (1990)).

108. See Bruce L. Hay et al., *The Four Questions of Corporate Social Responsibility: May They, Can They, Should They, Do They?*, in ENVIRONMENTAL PROTECTION AND THE

*B. Problems with Efficient Breaches and with Eliminating
Environmental Crimes*

From an economic efficiency standpoint, society would be better off in many instances without criminal enforcement of environmental laws. Criminal sanctions deter actors from undertaking economic opportunities that benefit both themselves and consumers. Moreover, the threat of incarceration and the stigma that results from criminal prosecution can deter actors from engaging in behavior that merely creates a possibility that they will be subject to criminal enforcement—either because of the negligent behavior of an employee or because of liability under the responsible corporate officer doctrine. With all that said, however, serious problems may arise if environmental regulations are restricted to civil and administrative enforcement alone.

For one, the environment is not an unlimited resource. As a result, if individuals and firms are permitted to make decisions based on their overall benefit to society, then even taking into account the harm to the environment, the damage resulting from those decisions may have an increasing effect as natural resources are tainted and depleted. Not only are certain aspects of the environment limited in quantity, but some harm may be irreversible. For example, if a power company violates emissions regulations because it is less expensive to pay fines and/or civil penalties than to comply with the regulations, it may be impossible to ever return the air quality to the pre-pollution level. Further, even if the fines and civil penalties are allocated towards eradicating the harm caused by the breach, there is a strong likelihood that those funds will be diverted elsewhere or wasted as they move through the government bureaucracy.

Another problem presented by efficient breaches of environmental regulations is that the actors, even assuming they are altruistic, may still err in calculating the costs and benefits. One has to question whether we really want people to be guided by something other than the law.¹⁰⁹ If so, and a firm is incorrect in assessing the cost of the harm to the environment, then leading that firm to engage in some activity in which the costs actually outweigh the benefits means that not only is society not better off,

SOCIAL RESPONSIBILITY OF FIRMS: PERSPECTIVES FROM LAW, ECONOMICS, AND BUSINESS 1, 2 (Bruce L. Hay et al. eds., 2005) (“[T]heoretical arguments frequently have failed to take account of whether there is relevant, supporting empirical evidence.”).

109. See Daniel C. Esty, *On Portney’s Complaint: Reconceptualizing Corporate Social Responsibility*, in ENVIRONMENTAL PROTECTION AND THE SOCIAL RESPONSIBILITY OF FIRMS, *supra* note 108, at 137, 137-43.

but the harm to the environment may be substantial and irreversible.

Moreover, issues arise with quantifying cost and benefit. First, there will almost always be an argument over what factors should be included in each calculation. Even if the factors are settled, however, there is the difficulty of placing a number on the harm to the environment as well as the detriment to human health and well-being due to that harm. Finally, in the unlikely instance that the factors have been agreed upon and the costs and benefits are quantifiable, the issue of unpredictability arises. That is, although a firm may be able to identify a specific cost per unit of pollution, for example, it is unlikely that the firm will be able to predict exactly how many units of pollution will, in fact, be caused by the activity.

VI. EMPIRICAL DATA ON THE EPA'S ENFORCEMENT PROGRAMS

While recognizing that there could be a myriad of explanations for some of the trends in the data as well as the potential problems created by the limited number of years I observed to draw inferences about those trends, the EPA's enforcement figures¹¹⁰ actually lend themselves to some favorable conclusions for economists. First, the number of environmental crime investigations undertaken is on the decline.¹¹¹ Second, the number of defendants charged with environmental crimes has decreased, although not as steadily as the number of investigations.¹¹² Third, the percentage of investigations resulting in defendants being charged has increased significantly since 2003,¹¹³ which demonstrates that the EPA may only be choosing to pursue the most egregious offenders who will be most easily prosecuted. Fourth, although it is difficult to draw inferences about the number of years of incarceration without more information, namely the number of defendants convicted as well as the years of incarceration each defendant faced), the figures somewhat resemble those of the number of defendants charged.¹¹⁴ If true, this would suggest that prison sentences have not grown harsher. Finally, the level of civil judicial penalties rose between 2002 and 2005, while the administrative penalties have similarly increased since 2003.¹¹⁵

110. *See infra* fig.1.

111. *See infra* fig.2.

112. *See id.*

113. *See id.*

114. *See infra* fig.3.

115. *See infra* fig.4.

A number of the inferences I draw from the EPA's figures are appealing from an economist's point of view. The fact that the number of environmental crime investigations has decreased steadily since 2002 suggests that the EPA may be seeking to enforce its regulations less through criminal sanctions and more through civil and administrative penalties. One could argue, perhaps, that the prior criminal prosecutions served a deterrent effect, causing individuals and firms to violate environmental regulations less frequently, which in turn forced the EPA to taper its criminal enforcement without actually choosing to do so. However, the significant increase in civil judicial penalties from 2002 through 2005 suggests that the EPA may in fact have intentionally sought civil penalties in instances in which it had previously sought criminal prosecution of the offender.

Next, the number of defendants charged with environmental crimes has declined from its 2000 level, but not at the rate at which the number of investigations has decreased. Taken together, these figures indicate that the percentage of investigations resulting in defendants charged has increased since 2003. As mentioned above, this may suggest that the EPA is only choosing to investigate the most egregious violators against whom it will have the easiest time building a case. If this inference is true, and the EPA is seeking criminal enforcement against repeat offenders, one of the legal goals of criminal laws—remediation—may be served. Moreover, by pursuing fewer criminal investigations, the EPA is saving valuable resources and tax dollars as well as leaving individuals to serve as productive members of society rather than as a drain on tax dollars in prison.

VII. SUGGESTIONS FOR EFFECTIVE ENFORCEMENT OF ENVIRONMENTAL REGULATIONS

Throughout this Note I have pointed out the problems that hinder effective enforcement of environmental laws. In this Part, I discuss some ideas that have been proposed in order to improve, and in some instances revolutionize, the enforcement scheme of environmental laws.

A. Elevated Mens Rea Standard

Elevating the culpability level necessary for criminal conviction of environmental regulations could go a long way to protect firms from arbitrary and overly harsh sanctions. By forcing the government to demonstrate a higher standard of specific intent, a bright

line between criminal enforcement and civil or administrative enforcement would be created.¹¹⁶ As a result, the government could focus its resources on the worst offenders—those who know that their actions violate the law.¹¹⁷ Alternatively, Congress could specify that “knowingly” means knowledge of the law being violated, which would also indicate to law enforcement agencies that the level of culpability must be substantial before criminal prosecution can be pursued.¹¹⁸

B. Tailored Enforcement

Critics of applying traditional criminal theories to environmental regulations have suggested that the two cannot be combined because it is like trying to fit a square peg into a round hole. That is, environmental criminal laws approach corporate decisions and actions as being just as unitary and rational as an individual’s when few would actually argue that such is the case.¹¹⁹ Scholars refer to this disconnect as the “black-box” theory of the firm.¹²⁰ Under the black-box line of argument, environmental criminal sanctions of corporations are justified because the corporations are rational polluters that violate environmental laws if it proves to be more cost-effective.¹²¹ Evidence has shown, however, that corporate decisionmakers do, in fact, account for non-monetary factors.¹²² Therefore, the black-box model of firm behavior is a major flaw in the environmental criminal law system.¹²³

If we accept that the black-box model is the “root cause” of the problems with the current environmental enforcement scheme, then implementing a new and more realistic model seems to be the only acceptable option.¹²⁴ Rather than using a “one-size-fits-all” enforcement regime, perhaps it is more appropriate to penalize offenders differently for the same offense according to their organization type.¹²⁵ This idea is described as “tailored enforcement.”¹²⁶ Because organizations have different motives, structures, and decision-making processes, they respond differently to incentives and

116. Gaynor et al., *supra* note 10, at 29.

117. *Id.*

118. *Id.* at 30.

119. Fortney, *supra* note 45, at 1629.

120. *Id.*

121. David B. Spence, *The Shadow of the Rational Polluter: Rethinking the Role of Rational Actor Models in Environmental Law*, 89 CAL. L. REV. 917, 919-21 (2001).

122. *Id.* at 970.

123. Fortney, *supra* note 45, at 1630.

124. *Id.* at 1631.

125. *Id.*

126. *Id.*

sanctions.¹²⁷ Therefore, by recognizing “target” enforcement strategies for each organization type, some of the disparate impact caused by enforcement of environmental crimes will be eliminated.¹²⁸ Moreover, tailored enforcement would enable the government to accomplish its goals more effectively with its limited resources.¹²⁹

C. Financial Assurance or “Bonding”

A fundamental principle of environmental regulation is that pollution costs should be paid for by their creators.¹³⁰ Problems arise, however, when environmental obligations are avoided because of the polluter’s bankruptcy, corporate dissolution, or outright abandonment.¹³¹ Financial assurance rules, or bonding requirements, may address these problems.¹³²

“Assurance rules require potential polluters to demonstrate—before the fact—financial resources adequate to correct and compensate for environmental damages that may arise in the future.”¹³³ Assurance rules enable firms to determine on their own whether and to what extent they will engage in activities that harm the environment.¹³⁴ This freedom, however, is checked by “the expertise and scrutiny of private, third-party financial providers,” such as “the insurers, sureties, and banks that provide the financial products used to demonstrate compliance.”¹³⁵ Thus, “assurance rules can yield a flexible, market-based approach to compliance and monitoring.”¹³⁶ In addition, mandatory assurance addresses insolvency directly and increases the effectiveness of environmental regulation.¹³⁷

VIII. CONCLUSION

As the environment moves to the forefront of social concern and

127. *Id.*

128. *Id.* at 1632-33.

129. *Id.* at 1634. For a full discussion of the theory of tailored enforcement see *id.* at 1631-35.

130. James Boyd, *Financial Responsibility for Environmental Obligations: Are Bonding and Assurance Rules Fulfilling Their Promise?* 1 (Res. for the Future Discussion Paper No. 01-42, 2001), available at <http://www.rff.org/Documents/RFF-DP-01-42.pdf>.

131. *Id.*

132. *Id.*

133. *Id.*

134. *Id.*

135. *Id.*

136. *Id.* at 2.

137. *Id.* at 3.

political debate, the decision concerning what methods should be available for enforcement of environmental statutes is paramount. In order to make the best policies for all of the interested parties, it is essential that officials are aware of the breadth of legal and economic arguments. As a result, scholars must continue to explore the efficacy of criminal, civil, and administrative enforcement of the many environmental regulations. They should do so, however, not merely by discussing theories—and not even by presenting empirical data alone—but by performing empirical studies and relating their results to theory and policy in a meaningful way.¹³⁸ Some important questions to examine in determining the appropriate enforcement mechanism of each potential violation include 1) the desired level of deterrence; 2) the extent of harm that would be caused to the environment and public health by a violation; 3) the benefit to society that would result from breach; 4) the designated culpability/mens rea requirement; and 5) the amount of resources required to successfully carry out the enforcement program. Finally, as scholars and officials continue to examine different theories, policies, and outcomes, they should remain open to the possibility that this unique area of the law requires its own unique system of regulation.

138. See Steven P. Solow, *The State of Environmental Crime Enforcement: An Annual Survey*, 37 ENVTL. REP. 1, 2 (2006):

The lack of data, however, is not the complete answer. Data by itself does not “prove” anything. Data can serve to support, or not, a particular theory. Thus, what any of us knows or does not know about white-collar (or the subset of environmental) crime is not simply a result of the lack of good data. It is because there has never been a sufficient effort to marry data gathering with a meaningful *theory* about the causes and cures of corporate crime. Without that effort, the mere aggregation of data does little. In the absence of data, many of the theories about corporate crime control are either based on adherence to one doctrinaire approach or another, or on the wide-spread process of reasoning by anecdote.

FIGURE 1**Criminal Penalties:**

<i>Year</i>	<i>Years of Incarceration</i>	<i>Environmental Criminal Investigations</i>	<i>Defendants Charged</i>	<i>Value of Fines and Restitution (millions)</i>
2000	146	477	360	122
2001	212	482	372	95
2002	215	484	325	62
2003	146	471	247	71
2004	77	425	293	47
2005	186	372	320	100
2006	154	305	278	43

Civil/Administrative Penalties (in millions):

<i>Year</i>	<i>Injunctive Relief</i>	<i>Civil Judicial Penalties</i>	<i>Administrative Penalties</i>	<i>Value of SEPs*</i>	<i>Stipulated Penalties</i>
2000	1600	55	29	56	NC**
2001	4500	102	24	89	NC**
2002	3900	64	26	58	4
2003	2900	72	24	65	128
2004	4800	121	28	48	68
2005	10,000	127	27	57	4
2006	4900	82	42	78	10

Total Monetary Penalties (in millions):

<i>Year</i>	<i>Total Monetary Penalties</i>	<i>Total without Injunctive Relief</i>
2000	2699.5	258.5
2001	4611	310
2002	4070	200
2003	3168	360
2004	5065	312
2005	10,215	315
2006	5112	255

* Supplemental Environmental Projects

** Not Collected

Source: U.S. Environmental Protection Agency, Data, Planning, and Results: Annual Results, <http://www.epa.gov/compliance/data/results/annual/index.html> (last visited Nov. 16, 2007).

For years 2000-2004, see U.S. EPA, END-OF-YEAR ENFORCEMENT AND COMPLIANCE FIVE YEAR TRENDS (2004), available at <http://www.epa.gov/compliance/resources/reports/endofyear/eoy2004/fy045yeartrend.pdf>. For the year 2005, see U.S. EPA, COMPLIANCE AND ENFORCEMENT ANNUAL RESULTS, NUMBERS AT A GLANCE: FISCAL YEAR 2005 (2005), available at <http://www.epa.gov/compliance/resources/reports/endofyear/eoy2005/2005numbers.pdf>. For the year 2006, see U.S. EPA, COMPLIANCE AND ENFORCEMENT ANNUAL RESULTS, NUMBERS AT A GLANCE: FISCAL YEAR 2006 (2006), available at <http://www.epa.gov/compliance/resources/reports/endofyear/eoy2006/fy2006numbers.pdf>.

FIGURE 2

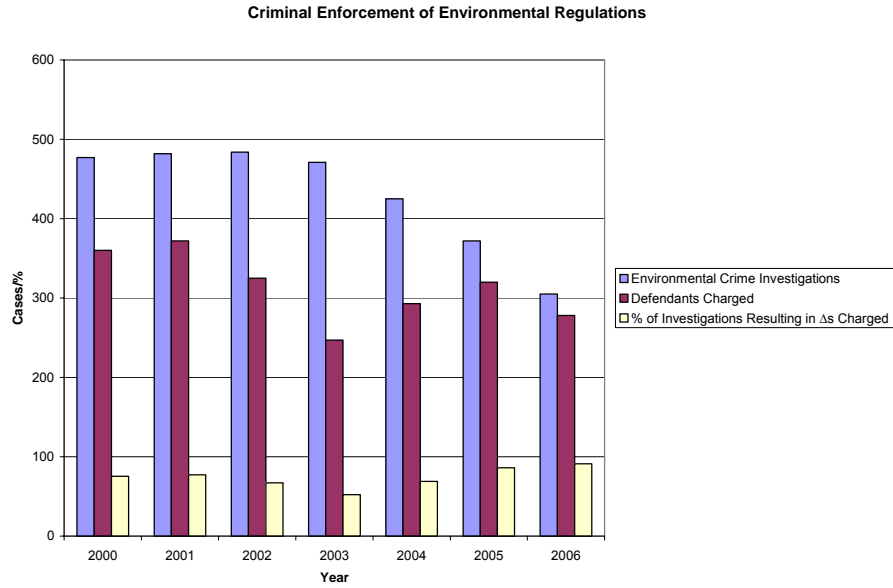


FIGURE 3

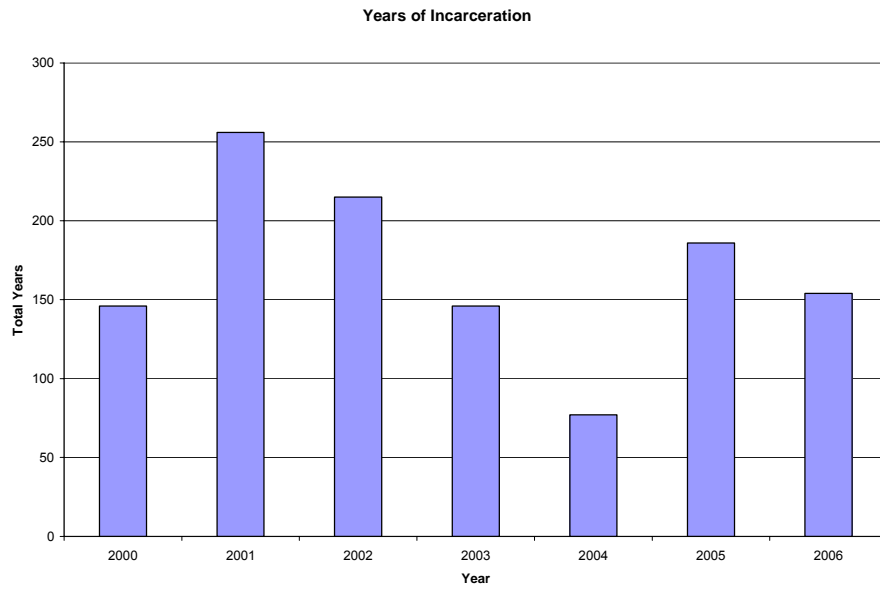


FIGURE 4

