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# Sentencing Antitrust Offenders: Reconciling Economic Theory with Legal Theory

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# SENTENCING ANTITRUST OFFENDERS: RECONCILING ECONOMIC THEORY WITH LEGAL THEORY

KENNETH G. DAU-SCHMIDT†

*This Article evaluates two different economic models of criminal law as applied to the enforcement of antitrust laws. The author argues that economic models which propose antitrust punishment be limited to fines and then to fines that are levied against only business entities, are deficient because they account for only the general deterrent effect of punishment and include a value of criminal benefit for the offender, a value not shared by society. He presents, as an alternative, a model that accounts for benefits afforded by incarceration such as the signaling of what is a criminal offense, changes in the criminal's taste for crime, and venting society's desire for retribution. He concludes that incarceration of individual antitrust offenders serves a valuable societal function.*

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## I. INTRODUCTION

The use of incarceration in the sentencing of antitrust offenders is well established in American law. Since 1890, individuals have been held criminally liable for imprisonment under the Sherman Act<sup>1</sup> for various forms of anti-competitive behavior. In addition,

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1. Sherman Antitrust Act, 15 U.S.C. §§ 1-7, 15 (1982). Section 1 of the Act originally read in part:

Every person who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a misde-

thirty-three states have criminal antitrust statutes that provide for jail sentences.<sup>2</sup> Many of these state statutes predate the Sherman Act and some provide for jail terms well in excess of those required by federal law.<sup>3</sup>

The incarceration of individuals for antitrust violations has been recently reaffirmed by Congress and the courts. In the Antitrust Procedure and Penalties Act of 1975, Congress elevated violations of the Sherman Act from misdemeanors to felonies and increased the maximum sentence from one to three years.<sup>4</sup> The courts, hesitant in the past to impose jail terms on antitrust offenders,<sup>5</sup> have lately shown more determination in this matter. Since 1975, the percent of antitrust offenders incarcerated has nearly doubled to twenty-five percent.<sup>6</sup>

Our continued and growing reliance on incarceration for enforcement of antitrust laws has been directed and encouraged for decades by respected legal commentators.<sup>7</sup> Although this encour-

meanor, and, on conviction thereof, shall be punished by fine not exceeding five thousand dollars, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.

Sherman Antitrust Act, ch. 647, § 1, 26 Stat. 209, 209 (1890).

2. The states are Alabama, Arizona, Colorado, Connecticut, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Tennessee, Texas, Utah, Virginia, Wisconsin, and Wyoming. Flynn, *Criminal Sanctions Under State and Federal Antitrust Laws*, 45 TEX. L. REV. 1301, 1343-46, App. B (1967).

3. FLA. STAT. ANN. § 542.05 (1962) (one to ten years per violation; each day of violation a separate offense); GA. CODE ANN. § 26-5008 (Supp.1966) (up to twenty years for some violations). See Flynn, *supra* note 2 at 1306 n.34.

4. Antitrust Procedures and Penalties Act, Pub. L. No. 93-528, 88 Stat. 1706 (codified at 15 U.S.C. § 1-3 (1982)).

5. Between 1890 and 1969, 536 criminal cases were prosecuted in which a defendant was subject to criminal sentencing. Although many paid criminal fines, only 26 were incarcerated. Posner, *A Statistical Study of Antitrust Enforcement*, 13 J. L. & ECON. 365, 391 (1970).

6. Note, *Sherman Act Sentencing: An Empirical Study, 1971-1979*, 71 J. CRIM. L. 244, 250 (1980) (table 2) gives the following statistics:

Period	Individuals subject to criminal sentence	Individuals Incarcerated	% Individuals Incarcerated
1971-75	204	26	12.7
1976-79	227	57	25.1
Totals:	431	83	19.3

It is not clear to the author that this trend in the increased use of incarceration for antitrust offenders will or can continue under the Reagan Administration's very slack enforcement of federal antitrust laws.

7. See, e.g., Baker & Reeves, *The Paper Label Sentences: Critiques*, 86 YALE L.J. 619 (1977); Ball & Friedman, *The Use of Criminal Sanctions in the Enforcement of Economic Legislation: A Sociological View*, 17 STAN. L. REV. 197 (1965); Flynn, *supra* note 2; Kennedy, *The Antitrust Aims of the Justice Department*, 9 N.Y.L.F. 1 (1963).

agement has not been without dissent,<sup>8</sup> the weight of legal scholarly authority has long supported the incarceration of antitrust offenders. In fact, some legal scholars view incarceration as the only effective punishment for antitrust offenders.<sup>9</sup>

Despite the strong acceptance of incarceration in our antitrust laws, the dominant economic theory on the sentencing of antitrust offenders suggests that incarceration for violations, and perhaps our entire antitrust sentencing policy, is inefficient and irrational. In the first attempt to extend modern economic analysis to the theory of crime, Professor Gary Becker makes economic arguments which suggest that our current antitrust sentencing policy is wrong regarding its reliance on incarceration and regarding the criteria for determining the appropriate magnitude of the criminal sanction.<sup>10</sup> Becker's model has been embellished by Professor Richard Posner.<sup>11</sup> Posner argues that the corporation, and not the individual, should be held liable for antitrust violations.<sup>12</sup>

Becker contends that, for all crimes, fines should be preferred over incarceration.<sup>13</sup> He assumes that for every jail term there exists a commensurate fine which not only adequately punishes the offending individual, but saves society the high costs of imprisonment. Thus, society should undergo the costs of imprisonment only when the defendant cannot afford the commensurate fine. Posner suggests that, due to their wealth, Becker's argument should preclude the incarceration of most antitrust offenders.<sup>14</sup>

In contrast, legal theorists and practitioners do not view a fine as a perfect substitute for incarceration. Incarceration is important for the sentencing purposes of rehabilitation, deterrence, retribu-

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8. See, e.g., Berge, *Some Problems in the Enforcement of the Antitrust Laws*, 38 MICH. L. REV. 462 (1940); Cahill, *Must We Brand American Business by Indictment as Criminals?*, 1 A.B.A. ANTITRUST SEC. 26 (1952); Kadish, *Some Observations on the Use of Criminal Sanctions in Enforcing Economic Regulations*, 30 U. CHI. L. REV. 423 (1963).

9. See Baker & Reeves, *supra* note 7; Ball & Friedman, *supra* note 7; Flynn, *supra* note 2; Kennedy, *supra* note 7.

10. Becker, *Crime and Punishment: An Economic Approach*, 76 J. POL. ECON. 169 (1968).

11. R. POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE (1976) [hereinafter cited as R. POSNER, ANTITRUST LAW]; R. POSNER, ECONOMIC ANALYSIS OF LAW (2d ed. 1977) [hereinafter cited as R. POSNER, ECONOMIC ANALYSIS]; Posner, *Optimal Sentences for White Collar Criminals*, 17 AM. CRIM. L. REV. 409 (1980) [hereinafter cited as Posner, *Optimal Sentences*].

12. R. POSNER, ANTITRUST LAW, *supra* note 11, at 226; R. POSNER, ECONOMIC ANALYSIS, *supra* note 11, at 236; Posner, *Optimal Sentences*, *supra* note 11, at 418.

13. Becker, *supra* note 10, at 193.

14. R. POSNER, ANTITRUST LAW, *supra* note 11, at 255; Posner, *Optimal Sentences*, *supra* note 11, at 410.

tion, education, and incapacitation.<sup>15</sup> Fines are considered appropriate only for less serious offenses when some of the purposes of sentencing are inappropriate or less important.<sup>16</sup>

Becker also asserts that the optimal criminal sanction is one that has an expected cost to the criminal, *ex ante* the criminal act, equal to the sum of the "social harm" of the crime and the crime's "transaction costs" of apprehension and prosecution.<sup>17</sup> Given penalties of this magnitude, a person would commit a crime only if his expected benefit from the crime exceeds the crime's cost to society. Thus, only "economically efficient" crimes would be perpetrated.

The law uses quite different criteria in determining the appropriate criminal sanction. First, judges determine the offender's "culpability" by assessing both the seriousness of the offense and the offender's responsibility for the crime.<sup>18</sup> Second, the judge sentences the offender in a magnitude sufficient to discourage future crime under a variety of theories of criminal punishment including rehabilitation, deterrence, education, and incapacitation.<sup>19</sup> The defendant's culpability and the theory of punishment espoused by the judge can affect both the magnitude of the sanction and whether the sanction consists of incarceration, treatment, or a fine.<sup>20</sup>

In addition, if one accepts the proposition that criminals, like the rest of the population, are "risk averters"<sup>21</sup> with regard to wealth, Becker's model suggests that increasing the severity of the criminal sanction will deter crime better than proportionate increases in the *ex ante* probability of being caught and punished.<sup>22</sup> The rationale is that potential criminals are adverse to risk in their sentencing, and so will be more greatly deterred by an unlikely sanction of great magnitude than by a more certain, but smaller potential sentence. Traditionally, legal theorists and practitioners

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15. Mann, Wheeler & Sarat, *Sentencing the White-Collar Offender*, 17 AM. CRIM. L. REV. 479, 483 (1980).

16. Renfrew, *The Paper Label Sentences: An Evaluation*, 86 YALE L.J. 590, 613 (1977).

17. Becker, *supra* note 10, at 192.

18. Flynn, *supra* note 2, at 1308.

19. *Id.*; Mann, Wheeler, & Sarat, *supra* note 15, at 482; Renfrew, *supra* note 16, at 592. The Department of Justice's Sentencing Guidelines for Antitrust Offenders also generally agrees with this formulation. Note, *Sentencing Antitrust Felons*, 34 WASH. & LEE L. REV. 1097, 1109 (1977).

20. For an example of such behavior, see Renfrew, *supra* note 16.

21. The concept of "risk avoidance" is discussed in detail later in this article. See *infra* notes 50-53 and accompanying text.

22. R. POSNER, *ECONOMIC ANALYSIS*, *supra* note 11, at 365; Becker, *supra* note 10, at 178.

have thought certainty of punishment to be more important to deterrence than the severity of sanction.<sup>23</sup>

Finally, Posner argues that corporations, not individuals, should be prosecuted for antitrust violations.<sup>24</sup> Posner identifies the corporation as the major beneficiary of criminal antitrust activity, and therefore the most appropriate entity to punish. Moreover, Posner suggests that the corporation itself can punish an errant agent by firing the agent or docking his pay when the threat of criminal fines to the corporation outweigh the benefits of the agent's anticompetitive acts.<sup>25</sup> Once again, legal theory is in sharp disagreement. As stated above, individual liability is well established in our antitrust law.<sup>26</sup> In a sentencing system based on the culpability of the offender, it makes little sense to hold an inanimate legal entity liable for sanction.

The purpose of this Article is to help reconcile the economic and legal theories of antitrust sentencing.<sup>27</sup> In the first section of this Article, I present a brief summary of the economic theories of Professors Becker and Posner. Following this is a section outlining the corresponding legal theory. In the final section, I record my economic interpretation of the legal theory in a format analogous to the models of Becker and Posner. In this way I uncover the basic errors in the formulation of Becker's and Posner's arguments and establish the consistency of current legal theory with the logic of economics. I hope this Article helps lay the foundation for further fruitful work in the economic analysis of crime.

## II. A FIRST ATTEMPT AT THE ECONOMIC MODELING OF CRIME

Becker begins his economic model of crime by postulating a function of social harm associated with crime.<sup>28</sup> This function in-

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23. Tittle, *Punishment and Deterrence of Deviance*, in *THE ECONOMICS OF CRIME AND PUNISHMENT* 92 (S. Rottenberg ed. 1973); F. ZIMRING & G. HAWKINS, *DETERRENCE: THE LEGAL THREAT IN CRIME CONTROL* 158-72 (1973).

24. See R. POSNER, *ANTITRUST LAW*, *supra* note 11, at 226; R. POSNER, *ECONOMIC ANALYSIS*, *supra* note 11, at 236; Posner, *Optimal Sentences*, *supra* note 11, at 418.

25. See R. POSNER, *ANTITRUST LAW*, *supra* note 11, at 225-26; R. POSNER, *ECONOMIC ANALYSIS*, *supra* note 11, at 236; Posner, *Optimal Sentences*, *supra* note 11, at 418.

26. Individual liability is a precondition to incarceration. 15 U.S.C. § 1 (1982).

27. Many of the arguments in this Article are applicable to criminal law in general. The Article is written with reference to the problem of sentencing antitrust offenders because in this area the economic arguments discussed have enjoyed the most exposure and are likely to enjoy the most success.

28. Becker, *supra* note 10, at 172.

creases with the number of criminal offenses. The relationship can be represented as

$$H = H(O)$$

$$\text{with } H' = \frac{dH}{dO} > 0$$

where  $H$  is the net social harm resulting from crime and  $O$  is the number of criminal offenses.<sup>29</sup> In antitrust crimes, the social harm would include loss in efficiency of resource allocation due to anticompetitive acts, loss of management efficiency from diminished competitive pressure, maldistribution of income due to non-competitive pricing, and perhaps even loss of democratic freedom due to the manipulation of market power.<sup>30</sup> Subtracted from these harms are whatever social benefits the antitrust crime creates; for example, economies of scale that result from monopolization.<sup>31</sup> The net social harm from antitrust crimes grows with every offense.

Next, Becker proposes a function aggregating the gain to offenders in committing crimes.<sup>32</sup> This function also increases with the number of offenses and can be similarly represented as

$$G = G(O)$$

$$\text{with } G' = \frac{dG}{dO} > 0$$

where  $G$  is the aggregation of the benefits of crime to the offenders and  $O$  is again the number of offenses.<sup>33</sup> In antitrust crimes, the gain would be excess profits the offender's firm receives from anticompetitive acts and whatever non-pecuniary benefits the offender derives from manipulation of the market.<sup>34</sup>

Becker also proposes a function of society's costs in the enforcement of the criminal law.<sup>35</sup> In this function, the costs of investigation, apprehension, and prosecution depend on the desired conviction rate and the total number of offenses committed. Thus, the cost function for law enforcement can be represented as

29. *Id.*

30. See generally G. SHEPHERD, PUBLIC POLICY TOWARDS BUSINESS 3 (rev. ed. 1979).

31. *Id.*

32. Becker, *supra* note 10, at 173.

33. *Id.*

34. See G. SHEPHERD, *supra* note 30, at 3.

35. Becker, *supra* note 10, at 174.

$$C = C(p, O)$$

$$\text{with } C_p' = \frac{dC}{dp} > 0$$

$$C_o' = \frac{dC}{dO} > 0$$

where  $C$  is the cost of enforcement,  $p$  is the proportion of offenses in which conviction is obtained (or the probability of being convicted for any particular offense if one is an offender), and  $O$  is again the number of offenses.<sup>36</sup>

Finally, Becker includes in his analysis the social cost of punishment.<sup>37</sup> The social cost of punishment is the cost of punishment to offenders, plus the cost or minus the gain to others from the offenders' punishment. Hence, the social cost of punishment can be represented as

$$S = bpfO$$

where  $pf$  is the expected penalty for an offender (the probability of conviction times the value of the penalty),  $O$  is again the number of offenses, and  $b$  is some coefficient of the social costs of punishment.<sup>38</sup>

The value of coefficient  $b$  varies, depending upon the punishment used. If fines are used, Becker asserts that the value of  $b$  is near zero.<sup>39</sup> This is because the offender's punishment ( $f$ ) is paid to the government and remains available to be used by society. Except for the transaction costs of collection, fines involve no net loss to society, only a transfer of resources from one member of society to another. If a prison term is used, however, the value of  $b$  would be greater than one.<sup>40</sup> With a prison term the offender's punishment ( $f$ ), in the form of foregone wages and the pain of imprisonment, is not transferred to someone else but is merely lost. In addition, society incurs the costs of guard salaries and prison maintenance while incarcerating the offender. Thus, society's net loss from imprisonment exceeds the costs of imprisonment to the offender.

All of these elements enter society's loss-from-crime function, which is an approximation of a portion of the economist's social

36. *Id.*

37. *Id.* at 180.

38. *Id.* at 181.

39. *Id.* at 180.

40. *Id.*



welfare function.<sup>41</sup> This loss-from-crime function is expressed as

$$(1) \quad L(O, b, p, f) = H(O) - G(O) + C(p, O) + bpfO$$

Society's loss from crime thus equals the net social harm ( $H(O) - G(O)$ ) plus the social costs of enforcement ( $C(p, O)$ ) and punishment ( $bpfO$ ).<sup>42</sup> Society can take a necessary step towards maximizing social welfare by minimizing the social loss from crime.

The first minimization step Becker suggests is to use fines instead of prison sentences whenever the offender can afford the socially optimal fine, in order to compensate society for the harm and costs of the crime.<sup>43</sup> If only fines are used,  $b$  will equal zero in the last term of the social loss function causing that term to disappear.<sup>44</sup> Society should undertake imprisonment, the more costly form of punishment, only for criminals lacking adequate financial resources to compensate society for their crimes.<sup>45</sup> This step assumes that for every jail term there is a corresponding fine from the viewpoints of both the offender and society. This assumption will be examined in further detail later in this Article.<sup>46</sup>

To find further conditions for minimizing the social loss from crime, we take the first derivative of the social loss function (now absent the social cost of punishment) with respect to the number of offenses and set it equal to zero.<sup>47</sup>

41. The social welfare function is a function that assigns to every possible state of the economy a number which represents its ranking in the preferences of society. J. QUIRK & R. SAPOSNIK, INTRODUCTION TO GENERAL EQUILIBRIUM THEORY AND WELFARE ECONOMICS 106 (1968).

42. Becker, *supra* note 10, at 181.

43. Becker's socially optimal fine is discussed later in this section. See *infra* notes 52-53 and accompanying text.

44. Becker, *supra* note 10, at 190.

45. Among other things, the preference for the use of fines suggests that if a wealthy person commits murder or rape and can afford to compensate society for the harm of the crime and the transaction costs of conviction, he should pay the fine rather than spend even one day in jail. Becker and Posner discount this idea saying that murder and rape are probably crimes for which social harm to the victim is so great that there is no commensurate fine. Thus, only imprisonment or execution are appropriate. Becker, *supra* note 10, at 196; R. POSNER, ECONOMIC ANALYSIS, *supra* note 11, at 169; Posner, *Optimal Sentences*, *supra* note 11, at 417. Their argument ignores the fact that, at least theoretically, it would be no great task to do a regression analysis of people working in high crime areas and low crime areas, and derive a coefficient of wage compensation for the increased chance of being murdered or raped. From this, finite compensation for the social harm of murder or rape could be estimated. See also *Tate v. Short*, 401 U.S. 395 (1971), where the Supreme Court held that statute which imposes a fine, but provides for imprisonment if the defendant cannot pay, unconstitutionally discriminates against the poor. *Id.* at 399.

46. See *supra* notes 77-80 and accompanying text.

47. Becker, *supra* note 10, at 191.

$$L(Opf) = H(O) - G(O) + C(p, O)$$

$$\frac{dL}{dO} = 0 = H' - G' + C_o'$$

$$\text{or } G' = H' + C_o'$$

We see that the optimal number of offenses occurs when the marginal gain to the offender from each offense is equal to the marginal social harm of the offense plus the marginal enforcement cost of the offense.

What does this say about the socially optimal fine? To maximize social welfare, we want the criminal to commit the offense if the gains he will receive from the offense are greater than or equal to the sum of the social costs and the enforcement costs incident to the offense. Assuming that the criminal acts rationally,<sup>48</sup> this result is guaranteed if his *ex ante* expected penalty from the crime equals the sum of the crime's social harm and enforcement costs. This can be represented as

$$(2) \quad pf = H' + C_o'$$

If such is the case, a person will commit a crime only if his personal benefit ( $G'$ ) is greater than or equal to his expected private cost ( $pf$ ), which when set equal to the social costs of the crime ( $H' + C_o'$ ), ensures that the person will commit the crime only when it is socially optimal. For the socially optimal solution, offenders must expect "to compensate [society] for the cost of catching them as well as for the harm they directly do . . . ."<sup>49</sup>

Although the optimality conditions suggest an optimal expected fine, one must look deeper for any suggestion regarding the optimum relative magnitudes of the conviction rate ( $p$ ) and fine ( $f$ ). Because only convicted offenders are punished, uncertainty arises regarding the value of the criminal sanction an offender will actually have to pay. If convicted, the offender pays  $f$ , otherwise, he pays nothing. Although the expected value of the criminal sanction ( $pf$ ) may be maintained at the socially optimal level with various combinations of  $p$  and  $f$ , the expected disutility to the criminal

48. All that this assumption means is that a person, in deciding whether to commit a crime, will weigh the expected costs and benefits of the crime to himself in an internally consistent manner and always select that course which yields the greatest net benefit. However accurate this assumption may be regarding persons considering crimes such as rape or murder, see Brier & Fienberg, *Recent Econometric Modeling of Crime and Punishment: Support for the Deterrence Hypothesis?*, 4 EVAL. REV. 147, 151 (1980), it seems a safe assumption for white collar crimes such as antitrust violations.

49. Becker, *supra* note 10, at 192.

from the sanction may increase or decrease as the probability of paying the sanction ( $p$ ) increases, depending on whether the criminal prefers or is adverse to such risk.<sup>50</sup> Because Becker treats the criminal sanction ( $f$ ) as a fine or the monetary equivalent of incarceration, the criminal's expected disutility increases or decreases as  $p$  increases depending upon whether the criminal is a risk preferer or risk averter with respect to wealth.<sup>51</sup>

Becker suggests that if criminals are risk preferers with respect to wealth, the above theory tends to explain the historically observed, greater deterrent effect of conviction.<sup>52</sup> This assertion seems untenable, however, as applied to crimes involving substantial rewards such as antitrust offenses. Economists commonly assume that people, at least with respect to any substantial amount of wealth, are risk averters.<sup>53</sup> If the alleged offenders are risk adverse, Becker's theory suggests that increased deterrence can be achieved by adjusting the socially optimal value of  $pf$  so that  $p$  is very small and  $f$  very large. In other words, Becker's model advocates slack enforcement of antitrust laws but very steep penalties.

Posner goes beyond the general analysis above to argue that in the case of antitrust violations only corporations, and not individ-

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50. Becker, *supra* note 10, at 196.

51. To say that a person is a risk preferer with respect to wealth means that if given a choice between a certain \$20 and a fifty-fifty chance at \$40, the person would have a definite preference for the gamble. This is true even though the *ex ante* expected value of the two choices is the same. A risk averter with respect to wealth would "avoid the risk" and have a definite preference for the certain \$20. Risk neutrality, which is the state of being indifferent as to the above choices, has also been hypothesized by economists. See VARIAN, MICROECONOMIC ANALYSIS 108 (1978).

52. Since the theoretical explorations by eighteenth century criminologist Beccaria, numerous legal scholars have shared this view. L. RADZINOWICZ, A HISTORY OF ENGLISH CRIMINAL LAW AND ITS ADMINISTRATION FROM 1750, 282 (1948). See Becker, *supra* note 10, at 183; authorities cited *supra* note 23.

53. The most common reason given for this assumption is the "declining marginal utility of wealth." Coffee, *Corporate Crime and Punishment: A Non-Chicago View of the Economics of Criminal Sanctions*, 17 AM. CRIM. L. REV. 419, 430 (1980). In simple terms this means that the value of any additional increment of wealth to an individual decreases as the individual grows wealthier. A simple illustration of this concept, which is attributed to the mathematician John Von Neuman, posits a case in which a person wins a million dollar lottery and then is invited to flip a coin for that amount "double or nothing." Most of us would decline to accept this bet because the utility to us of the second million is not equal to that of the first. That is to say, the marginal utility of the second million is less than the marginal utility of the first million. Assuming this phenomenon holds with respect to the increments of wealth being considered, it does not make sense for us to risk certain lesser amounts for chances at greater amounts as in the example given. Thus, we are risk averse with respect to wealth.

ual corporate managers, should be held liable.<sup>54</sup> His rationale is that the corporation, not the individual, benefits most from the illegal activity and should therefore bear the costs. Also, Posner suggests, holding only corporations liable would reduce inefficient punishment of defendants. Because corporations would be more likely to be able to compensate society through fines for the social costs of their antitrust crimes, the "wasteful" punishment of imprisonment would less likely be necessary.<sup>55</sup> Posner maintains that fining corporations would not undermine the deterrence of individual managers from antitrust violations.<sup>56</sup> If a manager's acts resulted in a corporate fine that was not commensurate to the social benefits the corporation received from the infraction, the corporation could find effective methods, such as firing the manager or docking his pay, to deter such conduct.

### III. LEGAL THEORY AND PRACTICE IN SENTENCING ANTITRUST OFFENDERS

In theory and in practice, legal thinking on criminal sentencing is diametrically opposed to the course suggested by Becker and Posner. The function of criminal law is not to compensate society or the victim for the harm the criminal has caused—tort law fulfills this function—but to punish the criminal for morally culpable activity.<sup>57</sup> Criminal law, with some qualification,<sup>58</sup> codifies community moral standards as represented in the enacting legislature. The purpose of criminal punishment is thus to enforce community mores through a variety of punishment theories.

Arguably, asserting that punishment upholds societal mores is an inappropriate starting point for a theory of sentencing antitrust offenders because no moral violation occurs in antitrust crimes. Nonetheless, this argument has been tried in the law and found wanting. The legislative determination on this question is clear: antitrust violations are not only criminal, but felonious.<sup>59</sup> Given

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54. R. POSNER, *ANTITRUST LAW*, *supra* note 11, at 226; R. POSNER, *ECONOMIC ANALYSIS*, *supra* note 11, at 236; Posner, *Optimal Sentences*, *supra* note 11, at 418.

55. Query whether a corporation can *ever* in any sense be effectively jailed.

56. *See* authorities cited *supra* note 54.

57. W. LAFAVE & A. SCOTT, *CRIMINAL LAW* 11 (1972).

58. Immorality and criminality, though strongly related, are not synonymous. Much conduct that society views as immoral is not criminal. For example, one has a moral duty to try to save a drowning person, but there is no such legal duty. There are also some limited instances of strict liability or vicarious liability crimes in which the defendant's immorality is irrelevant. *Id.* at 10.

59. *See* 15 U.S.C. § 1 (1982).

this country's popular decision in favor of a competitive economy, an antitrust violation with the appropriate *mens rea* amounts to fraud and theft by stealth. Monopolists who put themselves forward as subject to competitive restraint while earning excess profits, and price fixers who subvert the competitive market in secret are not separate in kind from those who commit larceny, burglary, fraud, counterfeiting, embezzlement, or many other serious crimes.<sup>60</sup>

A variety of legal theories exist to explain how punishment under the criminal law enforces our community mores. In brief, the more commonly discussed theories include:<sup>61</sup>

- (1) *Rehabilitation*<sup>62</sup> — Under this theory of punishment, the convicted criminal is given treatment or training to remove the cause of his criminal activity so that when he returns to society he will not desire or need to commit further crimes.
- (2) *Deterrence* —
  - (a) *Particular*<sup>63</sup> — This theory of punishment aims to deter the convicted criminal from future criminal activity by giving him such an unpleasant punishment he will not want to commit a crime again.
  - (b) *General*<sup>64</sup> — Under general deterrence the sufferings of the convicted criminal are supposed to deter others from committing future crimes lest they suffer the same fate. This is the legal theory closest to the economic theory of criminal sentencing espoused by Becker and Posner.
- (3) *Retribution*<sup>65</sup> — This is the oldest theory of punishment dating back to the *lex talionis* "an eye for an eye, a tooth for a tooth." Under this theory, the criminal is given some commensurate punishment because he "ought" to be punished. Possible benefits of punishment include societal satisfaction with "just" punishment, atonement by the offender, and the suppression of acts of private vengeance.

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60. One authority states:

It should now be clear that a deliberate or conscious violation of the antitrust laws is not a mere personal pacadillo [sic] or economic eccentricity, but a serious offense against society which is as immoral as any other act that injures many in order to profit a few. Conspiracy to violate the antitrust laws is economic racketeering which gains no respectability by virtue of the fact that the loot is secured by stealth rather than by force.

Loevinger, *The New Frontier in Antitrust*, 39 TEXAS L. REV. 865, 866 (1961).

61. W. LAFAVE & A. SCOTT, *supra* note 57, at 21.

62. *Id.* at 23.

63. *Id.* at 22.

64. *Id.* at 23.

65. *Id.* at 24.

- (4) *Education*<sup>66</sup> — Criminal punishment can serve, by the publicity which attends the trial, conviction, and punishment of criminals, to educate the public regarding the proper distinctions between good and bad conduct—distinctions which, when known, most of society observe. Because the criminal law reflects community mores, the community should need little education regarding the nature of most laws. Educating the community can be important, however, for crimes such as antitrust offenses that involve more than a simple rap on the head.
- (5) *Incapacitation*<sup>67</sup> — Under this theory, community mores will be enforced by punishment at least in that while the criminal is in jail he cannot commit further crimes.

Not all of these theories are relevant to antitrust sentencing. Judges commonly state that rehabilitation and incapacitation are not of primary importance in the sentencing of white collar criminals.<sup>68</sup> The most common rationale is that such defendants are respected men in the community, who are not in need of psychiatric or vocational help, nor prone to recidivism.<sup>69</sup> Despite this rationale, judges use theories of punishment other than the general deterrence framework suggested by Becker and Posner to sentence antitrust offenders. Retribution, education, and particular deterrence, are also commonly cited as establishing appropriate criteria for white collar sentencing.<sup>70</sup>

With these theories of punishment in mind, the sentencing judge in an antitrust case assesses the culpability of the defendant and levies the appropriate punishment. The theories of punishment applied by the judge may affect both the type and magnitude of the sentence levied.<sup>71</sup> For example, a judge who is interested in rehabilitation of the criminal may defer part of the criminal's jail sentence on the condition that the offender participate in a program for alcoholics, if the judge feels that treatment would assuage the offender's criminal tendencies. Similarly, a more retributive judge might mete out longer and harsher sentences. The "culpability" of the defendant has been described as comprising both the seriousness of the offense and the defendant's responsibility for the

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66. *Id.* at 23-24.

67. *Id.* at 22-23.

68. *See* Mann, Wheeler & Sarat, *supra* note 15, at 482; Renfrew, *supra* note 16.

69. Mann, Wheeler & Sarat, *supra* note 15, at 482.

70. *Id.*

71. *Id.*

offense.<sup>72</sup> The dollar amounts and personal harm involved in the crime, as well as whether the offender was a main instigator or perhaps operating under duress while committing the crime, will be taken into account in sentencing.

Although the sentencing process is by no means uniform among all judges,<sup>73</sup> the process is not the simple assessment of social harm and transaction costs described in the Becker model. The judge assesses a commensurate type and amount of pain to be endured by the convicted offender for rehabilitative, deterrent, educational, or retributive purposes. The sentence may be adjusted so that the specific offender actually suffers the prescribed amount of pain. For example, a rich man may be asked to pay a larger fine than a poor man so that the judge knows he "feels it."<sup>74</sup> Under Becker's analysis of crime, rich and poor alike should pay the same fine based on an objective determination of the social cost of their crimes.<sup>75</sup> Moreover, in practice, recidivists are given larger sentences to ensure that future decisions to violate the law are not made on the basis of the same cost-benefit analysis as past infractions.<sup>76</sup> Repeating or continuing the same offense is met with ever-increasing penalties even though its social costs remain unchanged. This clearly shows that judges do not accept Becker's idea of the economically efficient offense.

Fines are not considered equivalent to incarceration in achieving sentencing goals. Incarceration is perceived as a punishment of "special abhorrence" to the white collar offender with little potential for leaving them "unchanged."<sup>77</sup> Judges consider fines to be a less severe form of punishment appropriately imposed against

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72. T. HONDERICH, PUNISHMENT: THE SUPPOSED JUSTIFICATIONS 28 (1969).

73. Some guidelines do exist. For example, the Department of Justice Sentencing Guidelines suggest 18 months imprisonment as the basic sentence in any criminal antitrust case to be increased or diminished according to whether certain aggravating or mitigating factors are present. *Guidelines for Sentencing Recommendations In Felony Cases Under the Sherman Act*, reprinted in [Jan.-June] ANTITRUST & TRADE REG. REP. (BNA) No. 803, at F-1 (Mar. 1, 1977). Aggravating factors include whether the amount of commerce involved is greater than \$50 million; whether defendant's conspiracy involves unusually coercive conduct; and whether defendant previously was convicted of antitrust crimes. Mitigating factors include whether there was cooperation with the government; whether there existed personal, family, or business hardship; and whether the conspiracy was small and localized. *Id.*

74. Mann, Wheeler & Sarat, *supra* note 15, at 498.

75. See Becker, *supra* note 10.

76. Mann, Wheeler & Sarat, *supra* note 15, at 498.

77. See Baker & Reeves, *supra* note 7, at 621; Mann, Wheeler & Sarat, *supra* note 15; Renfrew, *supra* note 16, at 613.

offenders of lesser culpability or against defendants that have already suffered from indictment, trial, and conviction.<sup>78</sup> Judges commonly state that failure to give a prison term can depreciate the seriousness of the offense and lessen respect for the law.<sup>79</sup> Becker and Posner argue that the distinction between fines and incarceration is drawn only because the fines allowed under most criminal statutes are not of sufficient magnitude to act as substitutes for the jail sentences allowed under those statutes.<sup>80</sup> Assuming that this is true, it merely proves that the legislature also does not see the two forms of penalties as commensurate.

As previously stated, legal theorists and practitioners agree that certainty of punishment is more important in preventing crime than the severity of punishment.<sup>81</sup> This proposition in part reflects notions of equity and fairness to the individual. It is an important idea in our law that criminals be punished only on the basis of the crimes for which they have been convicted and not for other crimes which they or someone else may have committed.<sup>82</sup> This proposition, however, also reflects the belief that guaranteed punishment commands great deterrent value. Assuming that criminals are risk averters with respect to wealth, this view is at odds with Becker's economic theory of crime. If criminals are risk averters, the expected punishments of our criminal justice system would hold greater deterrent value if we increased the magnitude of the penalties and decreased the certainty of being caught.

Finally, legislatures, judges, and commentators are all interested in holding an individual rather than the corporation liable for his culpable activities. The reason is clear: a sentencing system based on individual culpability requires that the culpable actor be held liable for the criminal offense. Corporations have no acts independent of their agents; thus, the antitrust statutes are con-

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78. Mann, Wheeler & Sarat, *supra* note 15, at 483.

79. See authorities cited *supra* note 77.

80. See R. POSNER, *ANTITRUST LAW*, *supra* note 11, at 226; R. POSNER, *ECONOMIC ANALYSIS*, *supra* note 11, at 168; Becker, *supra* note 10, at 197; Posner, *Optimal Sentences*, at 416.

81. For example, as one commentator has said: "Some judges preoccupy themselves with methods of punishment. This is their job. But in preventing crime it is of less significance than they like to think. Certainty of detection is far more important than severity of punishment." Shawcross, *Crime Pays Because We Do Not Back Up the Police*, N.Y. TIMES, June 13, 1965, § 6 (Magazine), at 44.

82. Although this view is in conflict with the rationale of the general deterrence theory of criminal punishment, the general deterrence theory, the principle of punishment only after conviction, and the conflict, have existed in the theory of law for some time.



structed for prosecution of those agents.<sup>83</sup> Payment of the individual's criminal fine by the corporation undermines sentencing purposes.<sup>84</sup> Posner, however, would argue that our criminal law would function more efficiently if, at least in the case of antitrust offenses, society was content to punish merely the corporation. In this way we would not only punish the prime beneficiaries of antitrust crimes but also avoid any wasteful incarceration. The corporations themselves can adequately punish the errant individual.

#### IV. AN ECONOMIC INTERPRETATION OF THE EXISTING LEGAL THEORY ON SENTENCING ANTITRUST OFFENDERS

In criminal law, society makes a strong basic determination of what it values. In deciding which activities are *malum prohibitum*, society determines what to include and exclude from its social welfare function. The gratifications of a rapist, like the benefits of a price fixer, are not among those society considers in maximizing social welfare.<sup>85</sup> Accordingly, Becker's function  $G(O)$ , denoting the criminal's benefit from crime, should be excluded from the social loss from crime function (equation 1).<sup>86</sup> The resulting social

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83. Sherman Antitrust Act, 15 U.S.C. §§ 1-7, 15 (1982).

84. Flynn, *supra* note 2, at 1335. Judge Renfrew received a letter from a federal district judge who passionately argued for incarceration of antitrust offenders. The letter read in part:

Jail for "white collar" defendants is the only real deterrent. It carries a social obloquy and brands the offender for what he is. It is not appropriate in truly technical offenses, but fraud is another thing and certainly many per se violations of the Sherman Act fall in the same category. We judges tend to forget the suffering of those who are victimized by such offenses.

My experience at the bar was that one jail sentence was worth 100 consent decrees and that fines are meaningless because the defendant in the end is always reimbursed by the proceeds of his wrongdoing or by the company down the line. There is no difference between a nolo plea and a guilty plea except for its impact on civil litigation . . . .

. . . I would be unable to sleep nights if I continued to imprison blacks for nonviolent felony offenses, as is often necessary, and put "white collar" offenders on the street.

Renfrew, *supra* note 16, at 613.

85. Society may value some of the benefits a monopolist might get from monopolizing; economies of scale that could not be achieved otherwise is one example. But such value should be taken into account in determining what should be made a crime, not in allowing some "economically efficient" amount of crime.

86. One implication of ignoring the criminal's benefit from crime is that if society could costlessly prevent all crime it would. Posner has suggested that society would not want to do away with all crime, even if it could, by positing the example of a person lost in the woods who steals food from a cabin in order to survive. Posner suggests that in such a case, the benefit of the crime to the individual outweighs its harm to society. Under the Becker analysis, it is an economically efficient crime we would never want to prevent. R.

loss from crime function is

$$(3) L(Obpf) = H(O) + C(p,O) + bpfO$$

Because the social welfare function serves only to select among alternative economically efficient equilibria, no efficiency arguments can be made for the inclusion of  $G(O)$ .

Additionally, even if there exists some significant range over which a punished individual is indifferent between a jail term and some commensurate fine,<sup>87</sup> society is not so indifferent. Society's use of incarceration to suppress crime is based on several theories of punishment in addition to Becker's concept of general deterrence. We can examine the various theories of crime abatement through punishment by analyzing the utility maximization problem the individual faces in deciding whether or not to engage in crime.

We must first postulate a utility function for the individual which gives the individual's utility for any possible combination of net benefits from both honest and criminal activity. We will assume that money is the only benefit from criminal or honest activity, and that, as far as the individual is concerned, any expected punishment can be represented in monetary terms. The individual's utility function may then be represented as

$$U = U(c,h)$$

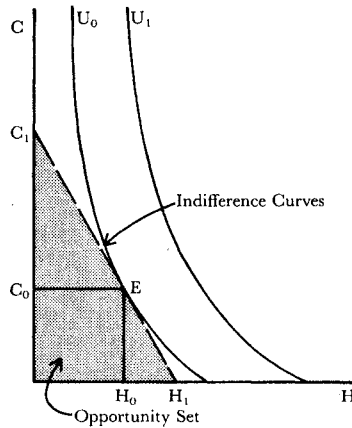
where  $U$  represents the individual's utility,  $c$  represents the benefits of criminal activity minus the expected costs of punishment, and  $h$  represents the benefit of honest activity. The individual's "opportunity set" of potential criminal and non-criminal net benefits and the individual's "indifference curves" among various choices of criminal and non-criminal net benefits may then be graphed.

The opportunity set consists of the criminal and non-criminal net benefits corresponding to all combinations of criminal and

POSNER, *ECONOMIC ANALYSIS*, *supra* note 11, at 166. I agree that we would never want to prevent such activity, but suggest instead that the appropriate rationale is that the activity contains no evidence of moral culpability. The lost person in the hypothetical has extremely high expected benefits from criminal activity (he lives) and very low expected returns from legal activity (he dies). With such an opportunity set, nothing can be determined about the individual's taste or distaste for criminal activity and the morality of his behavior.

87. For criticism of the proposition that fines and incarceration have some meaningful exchange rate even from the criminal's perspective, see Block & Heineke, *A Labor Theoretic Analysis of the Criminal Choice*, 65 AM. ECON. REV. 314, 320 (1975); Block & Lind, *Crime and Punishment Reconsidered*, 4 J. LEGAL STUD. 241, 243 (1975); Coffee, *supra* note 53, at 433.

GRAPH 1

*The Individual's Criminal and Non-criminal Activity Choice*

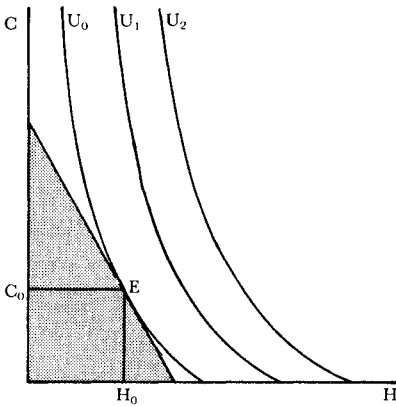
non-criminal activity available to the individual. In the above graph, the depicted individual can earn  $H_1$  non-criminal benefits by spending all his work-time at the most lucrative non-criminal job available to him and  $C_1$  net criminal benefits by spending all his work-time at his most lucrative criminal opportunity. The individual might achieve other combinations of criminal and non-criminal net benefits in the opportunity set by undertaking criminal and/or non-criminal work on various part-time bases.

The indifference curves shown ( $U_0$  and  $U_1$ ) each represent a locus of criminal and non-criminal net benefit combinations among which the individual has no preference. Only two indifference curves have been drawn, but similar curves could be constructed over the entire graph. Although the individual is indifferent among combinations on any given indifference curve, he does have a preference for combinations on indifference curves further away from the origin. Thus, all the combinations on  $U_1$  are preferred to any on  $U_0$ .

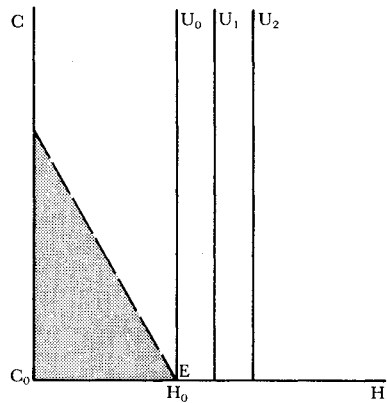
The individual's equilibrium in his crime/non-crime decision arises at point  $E$  where the individual's opportunity set is tangent to the highest indifference curve it can reach, or where the tradeoff of the marginal utility of crime for the marginal utility of honest activity equals the tradeoff between the benefits of criminal and honest activity on the boundary of the individual's opportunity set. The individual depicted would undertake an amount of criminal activity yielding  $C_0$  net criminal benefits and an amount of honest activity yielding  $H_0$  honest benefits.

Some individuals may have an inordinant penchant for criminal activity and its benefits and so, once caught and convicted, will be found criminal by society. The criminal and non-criminal indifference maps may be represented as follows:

GRAPH 2  
*Criminal*



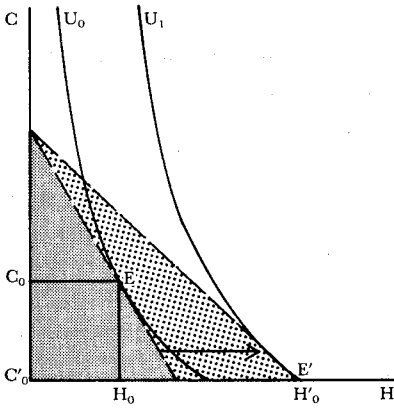
GRAPH 3  
*Non-Criminal*



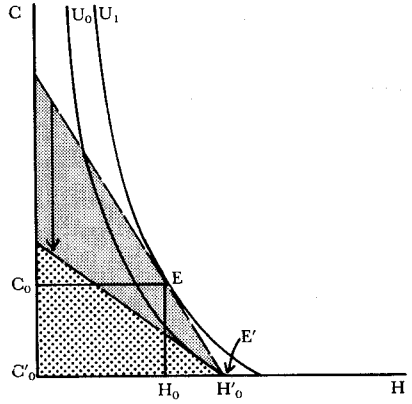
Given the same opportunity set as the non-criminal, the criminal will engage in crime when the non-criminal will not because the former has less distaste for crime.<sup>88</sup> The culpability of the criminal may be measured according to his lack of distaste for the criminal acts for which he is responsible. Economic interpretations of the various legal theories of punishment may thus be represented as follows:

88. Some interesting work takes account of individual taste or distaste for crime by including allocation of time explicitly in the individual's utility function. Block and Heineke have examined models derived from Becker's model and have shown that if the allocation of time is introduced explicitly into the utility analysis, the behavioral implications of the Becker model do not necessarily hold true. Block & Heineke, *supra* note 87; see also, Block & Lind, *supra* note 87; Block & Lind, *An Economic Analysis of Crime Punishable by Imprisonment*, 4 J. LEGAL STUD. 479 (1975).

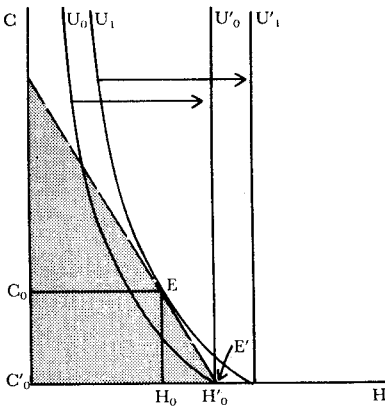
GRAPH 4  
*General Rehabilitation*



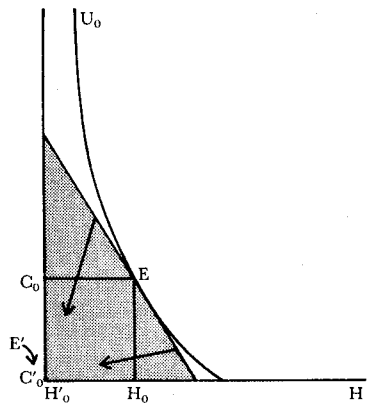
GRAPH 5  
*General Deterrence*



GRAPH 6  
*Particular Rehabilitation and Deterrence*



GRAPH 7  
*Incapacitation*



The rehabilitation and deterrence theories of criminal punishment are symmetrical. Each consists of a general mode that modifies the individual's opportunity set and a particular mode that modifies the individual's utility function. Both modes seek to prevent crime.

General rehabilitation seeks to improve the individual's honest opportunities so that, despite the individual's penchant for crime, he will not be tempted to engage in crime.<sup>89</sup> As shown in Graph 4,

89. One can see why courts often feel that rehabilitation is not a proper objective in sentencing white collar offenders because there is little society can do to improve their legal opportunities.

general rehabilitation amounts to extending the individual's opportunity set along the honest activity axis. Although the individual's penchant for crime remains unchanged, the rehabilitative shift in the individual's opportunity set causes the depicted individual to move from an equilibrium decision involving crime commensurate with benefits  $C_0$  to one involving no crime. The individual's honest opportunities are so much greater after rehabilitation that he no longer wants to engage in crime. Examples of this mode of rehabilitation include prison training programs intended to provide prisoners with better honest job opportunities on release.

General deterrence is quite similar in operation. An increase in the individual's expected punishment from the commission of crime decreases the individual's opportunities for net criminal benefit. As depicted in Graph 5, this decrease effectively shifts the individual's opportunity set toward the origin along the criminal activity axis. Again, such a shift can decrease criminal activity<sup>90</sup> without any change in the individual's penchant for crime. The individual simply finds that the net benefits of his criminal opportunities no longer warrant their undertaking. An example of this method of deterrence is the initiation of a tough new sentencing policy to make criminal alternatives less attractive.

Particular deterrence and rehabilitation are aimed at modifying the individual's utility function so that, even with the same opportunity set, the individual's new-found distaste for crime and possible punishment will prevent criminal activity.<sup>91</sup> The theory of particular deterrence is that such utility modification can be achieved through punishment by instilling a particular abhorrence to criminal punishment in the individual. Particular rehabilitation is a more positive theory which seeks utility modification through a change of heart towards crime and its benefits. The result, as illustrated in Graph 6, is that the individual, because of a change in his attitude toward the benefits and punishments of criminal activity, will no longer desire to engage in crime.

The remaining theories of punishment also have economic interpretations. As depicted in Graph 7, incapacitation has the effect

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90. Illustrated in Graph 5, by shifting the amount of criminal activity necessary to generate  $C_0$  to  $C_0'$ .

91. In spite of almost universal praise for the ideas of rehabilitation and particular deterrence Professor Becker seems vehemently opposed to tampering with the utility functions of criminals. See Becker, *supra* note 10, at 194.

of reducing the criminal's opportunity set to the origin, thus preventing crime while the criminal is incarcerated. Education through punishment has the effect of signaling to the general population on which axis of the indifference map a particular opportunity's benefits are to be measured. Through education society maximizes whatever distaste for criminal activity an individual might have.<sup>92</sup> Retribution as a theory of punishment involves the satisfaction society derives from knowing criminals get their "just desserts."<sup>93</sup> Although this theory cannot be represented with respect to the individual's utility maximization decision between criminal and honest activity, it would enter society's loss from crime function as a benefit of punishment.

Thus, society sees the commission of a crime as indicating some degree of culpability<sup>94</sup> on the part of the offender that requires either: modification of the offender's opportunity set through general rehabilitation, general deterrence, or incapacitation; modification of the offender's utility function through particular rehabilitation or deterrence; signaling to the offender and the general population that the activity engaged in was in fact criminal; or retributive punishment for the satisfaction of society. Becker and Posner take account of only the first of these modes of action for the reduction of crime through punishment. Only by ignoring the other theories of punishment can an argument be made for the equivalence of incarceration and monetary fines.

Monetary punishment can not be used as effectively as incarceration for modification of the offender's utility function. With incarceration, the offender is removed from society for a time due to his dangerous nature and need for atonement. Society may use the entire period of incarceration to subject the criminal to whatever type of rehabilitative program it desires. Moreover, the period of incarceration is spent in an environment that can be strictly controlled by the authorities. To argue that a fine would

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92. Again, for many crimes every member of society knows on which axis the activity should be measured; but for other crimes, such as antitrust violations, education is an important function of punishment. Additionally, because there may be more than one gradation of an offense in people's minds (for example, there are many unenforced laws), society may want to signal exactly how serious it considers a particular activity.

93. T. HONDERICH, *supra* note 72, at 28.

94. Notably, a court can only make a subjective assessment of the culpability of the offender from the fact of the commission of the crime. Even assuming that the court can accurately estimate the offender's opportunity set, it must still estimate how much distaste for crime the offender has because the opportunity set provides only a lower boundary on the "culpable bend" in the offender's indifference curve.

do as well for modification purposes would mean that all of the modification benefits of a prison term can be relegated to a single page of a checkbook.

Nor would fines be as effective for the educational goals of criminal punishment. To allow the offender to remain in society by paying a fine would not signal to society or the offender the same level of culpability and need for change as imprisonment. With a criminal fine, the offender suffers little more moral indignation than if he lost a civil suit, and no more personal detriment than if he lost his job. In fact, because of the inefficiencies resulting from attaching moral stigmas to civil court decisions, it may be important to the efficient operation of our legal system to ensure that the court-ordered payment of money never signals moral indignation as great as that attached to incarceration.

Finally, society does not derive the same retributive satisfaction from monetary punishment as from incarceration. This is purely a matter of society's tastes for punishment of criminals against which no logical argument can be raised.

Because of the utility modification, signaling, and retributive functions of punishment, the coefficient of the social costs of punishment ( $b$ ) cannot be efficiently set equal to zero in the social loss from crime function (equation 3) by utilizing fines instead of incarceration. In fact,  $b$  enters the social loss from crime function in two new ways.<sup>95</sup>

First, the number of offenses is now a function of  $b$ . From our utility analysis of the individual's crime/honesty choice, incarceration appears to reduce offenses through signaling and utility modification. Thus,  $b$  has a direct effect on the number of offenses people decide to commit. It is similarly clear that the number of offenses is also a function of the probability of conviction ( $p$ ), the criminal sanction ( $f$ ), and the relative benefits of criminal<sup>96</sup> and honest activity ( $c$  and  $h$  respectively). This function may be illustrated as

$$O = O(b, p, f, c, h)$$

Second, the social loss from crime function should reflect the retributive satisfaction society derives from the incarceration of

95. What follows are not the best specifications of the relationship between incarceration, the number of offenses, and the retributive satisfaction from incarceration. The specifications are given only to facilitate the analysis of Becker's model.

96. Professor Becker recognizes a similar function for offenses absent the specification with respect to  $b$ . See Becker, *supra* note 10, at 177.



criminals. Conceivably, this satisfaction would depend on the percentage of offenses in which conviction is obtained ( $p$ ) and the sanction meted out ( $f$ ), because from a retributive point of view, society would like to punish all offenders some just amount. Therefore, the function of retributive satisfaction may be represented as

$$R = R(b, p, f)$$

Including these ideas in our social loss from crime function we now have

$$(4) L = H(O(b, p, f, c, h)) + C(O(b, p, f, c, h), p) + bpfO(b, p, f, c, h) - R(b, p, f)$$

Without knowledge of the relative magnitudes of some of the partial derivatives of functions in this equation, conclusions concerning the optimal values of  $p$ ,  $f$ , and  $b$  are impossible. Heuristically, however, the problem of minimizing the social loss from crime has become one of balancing the costs of enforcement and punishment against the social harm of crime. More important, the above formulation of the model takes account of the utility modification, signaling and retributive aspects as well as the opportunity set modification aspects of criminal punishment.

This economic theory of crime also demonstrates the logic of the traditional theory of criminal sentencing with regard to antitrust offenders in other points of contention with Becker and Posner. Culpability makes sense as a criteria for sentencing, both for appropriate signaling regarding the seriousness of the offender's variance from community morals and as an indication of need for modification in the criminal's utility function. Modification of the offender's opportunity set is also an appropriate purpose in sentencing, but is only part of the overall sentencing theory. Becker's social benefit and cost criteria for sentencing focuses on only the opportunity set modification purpose of the criminal law and gives value to criminal benefits from crime, something for which society assigns no value. Thus, Becker's sentencing criteria are inappropriate for the criminal law.

The utility modification, signaling, and retributive functions of punishment also suggest why the certainty of punishment may be more important to the prevention of crime than increasing the severity of sanction. Unduly severe punishment of particular offenders would lead to inefficient modification of their utility functions. Also, more frequent signaling of the impropriety of certain activity may be more efficient than the rare but devastating punishment of

offenders, given the imperfect nature of human memory. Finally, from a retributive point of view, society derives more satisfaction from the just punishment of most offenses than the severe punishment of a few offenses.

An additional reason certainty of punishment may be more important to society than increasing the severity of punishment is the social cost of punishing an innocent person. The possibility of judicial error introduces to our social loss from crime function a cost of enforcement which cannot be eliminated by setting penalties arbitrarily high.<sup>97</sup> The cost of judicial error would be particularly high if, as is commonly espoused, society particularly abhors the punishment of an innocent person.

These arguments, however, do not explain why certainty of punishment would *deter* a potential criminal. One explanation may be that while people are commonly considered risk averters with respect to wealth, people probably are risk preferers with respect to incarceration.<sup>98</sup> Logically, there should be a declining disutility associated with additional years of imprisonment due to the existence of large initial costs of humiliation and loss of wealth from prison terms of any length, time discounting of future years, and the process of acclimatization to prison life. Thus, potential offenders are more adverse to a system of law enforcement in which some incarceration was the likely result of criminal activity than to one with longer prison terms but a smaller probability of incarceration. When the possibility of incarceration exists and is considered in the expected utility decisions of a criminal, economic theory supports the importance of certainty of punishment to general deterrence.

Finally, on the question of whether individuals should be held liable for antitrust violations, the answer given by my economic theory of criminal law is clear. Individual actors are the ones who are culpable of antitrust violations. Only by holding them liable for punishment can the sentencing purposes of utility modification, signaling, and retribution be fulfilled.

The personal involvement of the culpable party in sentencing is necessary for utility modification purposes. Private corporations cannot avail themselves of the utility modification benefits of imprisonment by reprimanding errant executives. The utility modi-

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97. Block & Sidak, *The Cost of Antitrust Deterrence: Why Not Hang a Price Fixer Now and Then?*, 68 GEO. L.J. 1131, 1136 (1980).

98. Coffee, *supra* note 53, at 432.

fication that might occur without incarceration would be hindered by the lack of any clear statement of personal culpability by the state. Punishment by a private corporation can more easily be regarded by an individual as a personal vendetta rather than an indication of guilt.

Personal involvement is also one of the most important aspects distinguishing incarceration from fines for society's signaling purposes. To hold a corporation liable for the culpable acts of its executives, separates the punishment from the act and weakens the signal of the seriousness of the offense. This is true even if corporate reprimand of the errant executives was made public, because no direct statement on the executives' culpable acts is made by the state.

Society's retributive satisfaction in criminal punishment also depends on state prosecution and punishment of the culpable individual. Society *wants* to prosecute and punish individual criminals, and may prefer to do so by incarceration. Fining a corporation in the hope that its board of directors will fire the appropriate person does not convince society that a serious wrong has been vindicated. Even in this modern age retribution helps ensure society's satisfaction with our criminal justice system. Apparently society cannot maximize its social welfare function without state prosecution and incarceration of individual defendants.<sup>99</sup>

## V. CONCLUSION

The theory of criminal law can be modeled to make good economic sense out of current antitrust sentencing policy and the beliefs of legal theorists. Professors Becker's and Posner's economic models of criminal law are deficient because they assign value to criminal benefits of crime and overlook the important sentencing purposes of signaling what is a criminal offense, modifying criminals' utility functions with respect to their distaste for crime, and venting society's retributive desires. When the mistakes of Becker and Posner are corrected in our economic model of crime, the desire of legal theorists and practitioners to incarcerate antitrust and other offenders is revealed as both efficient and rational.

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99. Wheeler, *Antitrust Treble-Damage Actions: Do They Work?*, 61 CAL. L. REV. 1319, 1335 n.78 (1973).