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An Economic Analysis of Criminal Attempt: Marginal Deterrence and the Optimal Structure of Sanctions

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AN ECONOMIC ANALYSIS OF CRIMINAL ATTEMPT: MARGINAL DETERRENCE AND THE OPTIMAL STRUCTURE OF SANCTIONS

I. INTRODUCTION: APPLICATION OF ECONOMICS TO THE CRIMINAL LAW

Society creates a complex structure of incentives and disincentives influencing individual conduct when it threatens sanctions for certain behavior.[1] Conduct tending to increase the risk of social harm (however defined) is influenced by the probability and severity of punishment. Criminal actors alter their conduct in response to changes in their private utility brought about by the likelihood of suffering sanctions.

What seems at odds with this paradigm is the view that criminal activity is a coolly calculated event. "Crime" often conjures up images of socially motivated, irrational acts of violence. In other words, the traditional images hardly reflect the acts of rational utility maximizers.[2] Much criticism has been directed toward deterrence as a primary goal of criminal sanctions for precisely this reason.[3] These criticisms query that if criminals do not calculate their utility *ex ante*, then deterrence is an implausible basis for the goal of the criminal law. Although the continuing debate on the aptness of the deterrence assumption is beyond the scope of this essay, a few intro-

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[1] For the purposes of this essay, the terms "crime" and "punishment" refer to their deterrent capacities. Where possible, corroborating arguments from non-deterrent based theories are noted.

[2] For a discussion of the relevance of realistic assumptions, see R. POSNER, ECONOMIC ANALYSIS OF LAW (2d ed. 1977). According to Posner,

> [t]he notion of the criminal actor as a rational calculator will strike many readers as highly unrealistic, especially when applied to criminals having little education or crimes not committed for pecuniary gain. . . . [T]he test of a theory is not the realism of its assumptions but its predictive power. A growing empirical literature on crime has shown that criminals respond to changes in opportunity costs, in the probability of apprehension, in the severity of punishment, and in other variables as if they were indeed rational calculators of the economic model.

Id. at 206.

[3] *See* Seidman, *Soldiers, Martyrs, and Criminals: Utilitarian Theory and the Problem of Crime Control*, 94 YALE L.J. 315 (1984). For a general discussion of the perceived limitations of deterrence theories of crime, see H.L.A. HART, PUNISHMENT AND RESPONSIBILITY (1968).

ductory remarks explaining the rationale of both criminal actors and
their society are in order.

Regardless of the stated agenda of punishment, deterrence, re-
tributivism, or incapacitation,[4] sanctioning certain behavior com-
mits resources which could have been devoted to different
purposes. Thus, an economic aspect arises in allocating scarce re-
sources to achieve desired (and perhaps competing) ends.[5]
Although criminal actors may be motivated *de facto* by irrational im-
pulses, society desires to remove rational motivations to commit
crimes. The criminal law must be structured so as to counter any
potential benefits which may rationally motivate anyone to commit a
crime; the criminal law undermines its essential purpose if it induces
rational individuals to commit criminal acts.[6]

A society attempting to maximize social utility will try to mini-
mize the social cost imposed by criminal acts.[7] A criminal actor act-
ing out of rational self-interest will try to maximize his private
utility.[8] Because the interests of both society and its individual
members can be identified generally, the structure of incentives cre-
ated by the criminal law can be tailored accordingly. Society rejects
incurring greater costs derived from controlling criminal acts than
the acts' harm imposes. Similarly, an individual rejects incurring a
greater cost from committing a criminal act than the potential pri-
vate benefit of its realization. These two general premises generate
meaningful prescriptions for the criminal law.

Crime and punishment create economic problems beyond soci-
ety's allocation of resources. The criminal actor must also make de-
cisions affecting his or her utility.[9] An individual engaging in a
given activity naturally forgoes other opportunities. This opportu-
nity cost represents the actor's next best alternative to the chosen
act and marks the minimum utility that a rational actor derives from
the chosen activity; otherwise, the foregone opportunity is the pre-
ferred action.

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4 For a discussion of many of the concerns of this paper in a non-deterrent context,
see Grevase, *Grading Criminal Attempts—A Proposed Solution for Statutory Reform in Sentencing*,
20 RUTGERS L. J. 479 (1989). Grevase incorporates social harm into his analysis but fails
to consider the cost constraints of law enforcement on the optimal level of sanctions.

5 R. EKELUND, MICROECONOMICS 5 (2d ed. 1988).

6 This proposition is compatible with retributivist, rehabilitationist, or incapacita-
tionist theories. A structure of criminal law based on any of these theories is seriously
undermined if offenders realize a net gain from criminal activity.

7 *See* Shavell, *Criminal Law and the Optimal Use of Nonmonetary Sanctions as a Deterrent*, 85
COLUM. L. REV. 1232, 1236 (1985) [hereinafter Shavell].

8 *Id.* at 1235.

9 *See id.* at 1242.

Decisions of criminal actors to engage in illegal activities pre-suppose a field of potential actions. This field includes a wide range of both legal activities (whose expected costs and benefits are weighed against that of illegal activities), and other potential, illegal activities.[10] In other words, the opportunity cost of an actor's activity is judged against all foregone activities, legal and illegal. That such decisions occur within the restricted domain of illegal activities suggests that utility maximizing decisions are made not only at the initiation of a crime, but also throughout its commission.

Although the economic literature on crime abounds with analyses of the incentives to commit crimes,[11] few critics notice that such incentives surface within the crimes themselves. The sphere of criminal attempt and its deterrents require a structure of incentives and disincentives sensitive to the shifts in utility that a criminal undergoes during the commission of a crime. These shifts often, but not always, are accompanied by changes in societal harm.[12] This has traditionally been the basis for arguments that sanctions reflect marginal deterrence.

Marginal deterrence not only is indicated by the level of societal harm, but also, as I will argue, by the level of individual utility of the criminal actor. Because this individual level changes as a criminal attempt is completed, the marginal deterrent value of a scale of sanctions must be geared to the criminal's utility calculations to be effective.[13]

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[10] That illegal activities are part of an individual's opportunity cost follows from the notions of proportional sanctions and marginal deterrence. Incentives to choose less, rather than more, harmful activities often translate into decisions to move from higher harm imposing crimes to lower ones. *See* Stigler, *The Optimum Enforcement of Laws*, in THE ECONOMICS OF CRIME AND LAW ENFORCEMENT 80 (L. McPheters ed. 1976).

[11] For an adumbration of the empirical literature on criminal deterrence, see D. PYLE, THE ECONOMICS OF CRIME AND LAW ENFORCEMENT (1983). *See also* Ehrlich, *Participation in Illegitimate Activities: A Theoretical and Empirical Investigation*, in THE ECONOMICS OF CRIME AND LAW ENFORCEMENT 141 (L. McPheters ed. 1976).

[12] For example, assume that a burglar intends to rob a home safe for the jewelry he knows to be inside. The offender also burgles the homeowner's expensive and lifesaving medication, which happened to be in the safe as well. Although the taking of the medicine increases the social harm of the crime, the burglar, unless he holds the medicine for ransom, does not recognize a gain above and beyond that provided by the stolen jewels.

[13] This comment explores the criminal's utility calculations through an option theory of crime. This theory treats the attempt stages of a crime as discreet decisions; at each stage of the attempt, the offender "purchases" a risk option on the probability that the attempt will be successfully completed. Steven Shavell suggests an alternative approach. Offenders discount their expected benefits and harms in two stages: (1) the values for the completed offense; and (2) the values for the attempt. *See* Shavell, *Deterrence and the Punishment of Attempts (forthcoming* in J. LEGAL STUD. June 1990). Shavell has a front-end loading analysis of deterrence for attempts. By discounting the expected benefit of an

This comment is divided into three sections, each of which presents and analyzes the perverse incentive[14] that arises from the increasing magnitude of sanctions as a crime progresses toward completion. The first section expands upon existing economic models of crime,[15] which focus on the social welfare function and the criminal's utility function. The social welfare function of society is assigned variables representing an act's social harm and the costs of both detection and apprehension. The criminal's utility function is represented by variables which account for the private benefit of the act, the likelihood of detection and apprehension, and the private cost of the sanction imposed. From these two perspectives, the optimal level of sanctions can be determined for given acts (at least relative to one another).[16]

The second section analyzes the model of criminal sanctions developed in section one as it applies to criminal attempts. Arguments for less severe sanctions for attempts than for completed crimes are scrutinized, in particular as those arguments make reference to the effects of marginal deterrence. To achieve the desired ends of marginal deterrence, sanctions must respond to the supply side of criminal acts. This section indicates both that criminal utility and social welfare are discontinuous in criminal attempts, and that sanctions responding to the criminal's utility achieve more effectively the desired ends of marginal deterrence.

The final section examines the causes of perverse incentives when sanctions for criminal attempts rise continuously as the crime progresses toward completion. Because some actors may be induced by the structure of sanctions to complete attempted crimes, the possibility that a market failure has occurred in the economy of crime is examined. If the market of crime[17] sends socially undesir-

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offense by the expected attempt sanctions, the decision to commit an offense is never recalculated. "[A]fter an individual decides to commit an act, the sanctions will have no effect on his behavior. Past the point of no return, he may be regarded as an automaton, who has set into motion forces that either will or will not lead to harm." *Id.* at 3. In this essay, I argue that the offender's expected utility is recalculated in response to changing events during the commission of a crime.

[14] The perverse incentive is the rational inducement an offender has to commit a more harmful, rather than less harmful, act because of the structure of criminal penalties relative to private benefits.

[15] The most famous of these models is presented in Becker, *Crime and Punishment: An Economic Approach*, in THE ECONOMICS OF CRIME AND LAW ENFORCEMENT 5 (L. McPheters ed. 1976) [hereinafter Becker].

[16] This essay will not address the actual values of optimal sanctions. Rather, it will indicate the relative positions of optimal sanctions both among and within offenses.

[17] A market in crime presupposes a class of criminal actors who provide criminal acts. Society pays a price to prevent a certain level of criminal activity. Beyond that level,

able signals to its criminal actors, then a change is needed in the structure of incentives (sanctions) to correct those signals. A correction responsive to the criminal's utility may reduce the social cost of crime through a greater inducement to abandon its attempt.

II. THE ECONOMIC MODEL OF CRIME

Crime raises the level of social cost when persons engaged in legal activities are harmed by those committing illegal activities. Thus, when an assault victim is harmed by the assailant, the aggregate apprehension of society increases;[18] when robbery victims are harmed by forced transfers, we as a society are harmed by an increased fear of robbery. These psychic penalties from an increase in the activity level of criminals are often realized in precaution expenses.[19]

The magnitude of social harm from a criminal act is a function of the type of act committed; acts causing greater social harm are more sanction-worthy than those which cause less.[20] For example, murders are more serious to society than robberies, which are more serious than jaywalking. The decreasing harmfulness of these types of acts suggests a decreasing level of sanctions and a structure of sanctions scaled to movements in social harm.

The magnitude of harm resulting from a type of act is offset by the probability that the particular harm will occur. The expected social harm of a criminal act (H_e) reflects the magnitude of harm (H) multiplied by the probability of its occurrence (P_o). We may represent the foregoing algebraically, as follows:

$$H_e = H \times P_o.$$

Thus, although both a completed robbery and an interrupted attempted robbery share the same values for magnitude of harm, they may differ greatly in the probability of the actual harm; accordingly, they yield different values for expected harm.

Sanctioning criminal actors for the harm they impose causes an overall reduction in expected harm. If the probability of suffering the sanction is fixed near unity, then its severity can vary to mirror

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society consumes criminal acts by not devoting more resources to prevent them. The supply of criminal acts, and their demand in society, constitute a market of crime.

[18] The "fear" factor rises with the activity level of crimes. Society pays a psychic penalty and will expend resources in order to reduce it.

[19] For a discussion of private expenditures to deter crime (*e.g.*, security guards, alarms, insurance), see Becker, *supra* note 15, at 43-45.

[20] For a discussion of the effects of type-assessment of crimes on the optimal level of sanctions, see Shavell, *Criminal Law and the Optimal Use of Nonmonetary Sanctions as a Deterrent*, 85 COLUM. L. REV. 1232, 1244 n.45 (1985).

changes in expected harm. Given the certainty of suffering sanctions, the punishment for robbery ought to be less severe than the punishment for murder.

Social harm can be reduced initially by ensuring that all criminals face very stiff sanctions. One resulting drawback is that robbers may lack a reason not to murder their victims. Individuals may also avoid legitimate, socially beneficial, marginal activities.[21] Uniformly high sanctions would cause an increase in social harm (*i.e.*, fewer robbers, but more murderers).

An alternative to fixing probabilities and varying magnitudes of sanctions is to fix magnitudes and to vary the probabilities of imposition.[22] Magnitudes of sanctions would be set high, as would resources allocated to increasing the likelihood that the offender will suffer sanctions. For example, murderers have the greatest likelihood of suffering sanction X (as society would more relentlessly pursue these criminals), while robbers would have a lower probability of suffering the same sanction.

Manipulating the probabilities of the imposition of sanctions is, however, impractical, unfair, and inefficient. First, increases in the probability of imposing sanctions require very large expenditures. Second, stiff punishments for minimally harmful acts will be both *ad hoc*[23] and may deter legitimate marginal activities.

Controlling probabilities of suffering sanctions either by keeping them near unity or varying them in accordance with social harm is extremely costly. This probability is determined by the resources expended on detection and apprehension, by the size of enforcement agencies, and by their remunerations. Incorporating detection/apprehension costs (C)[24] into the earlier equation for social cost yields

$$H_e = (H \times P_o) + C.$$

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[21] A very severe penalty will induce people to forgo socially desirable activities at the borderline of criminal activity. For example, if the penalty for driving more than 55 m.p.h. were death, people would drive too slowly, or not at all, to avoid an accidental violation or an erroneous conviction. R. POSNER, *supra* note 2, at 207.

[22] Posner notes that in pre-nineteenth century England, capital punishment was the sanction for both serious and non-serious crimes. Because of the lack of an organized police force, the probability of suffering punishment was quite low. R. POSNER, *supra* note 2, at 211.

[23] Even if the penalties are not imposed arbitrarily, society accrues very high information costs relative to the harm the offense imposes. One can imagine the cost of a single criminal trial for a parking violation.

[24] The term "*C*" refers to the fixed costs of maintaining enforcement, adjudicative, and correctional bodies. The variable costs of raising the probability of detection and apprehension are distinct from these sunk costs.

The cost of maintaining agencies at such a level may well exceed the social costs imposed by the crimes.

Although keeping the magnitude of sanctions high requires less initial investment (because it is legislated), it increases the social cost of crime. Uniformly high sanctions tend to equate crimes that impose differing degrees of social harm. Therefore, criminal activity will shift to more harmful activities.[25] This heightened social cost is indicated by marginal deterrence; additional costs exist for moving from less to more harmful activities.

These additional costs associated with high probabilities and magnitudes of sanctions come from adjudication and incarceration. If a criminal is likely to face sanctions and the sanctions are severe, then society must expend greater resources both in processing an increasing number of crimes and in maintaining incarcerated individuals.[26] Since certain combinations of probabilities and magnitudes of sanctions may impose greater social costs than the crimes they control, an optimally efficient combination of the two exists where the harm imposed by criminal activity does not exceed the social cost of its control. This optimal level of sanctions, which allows society to minimize the social costs of crime, is represented as follows:

$$M \times P_i \leq (H \times P_o) + C$$

where M is the magnitude of the sanction and P_i is the probability of the sanctions being imposed.[27]

This social welfare cost/benefit analysis only partially determines the optimal level of criminal sanctions. The probability and magnitude of sanctions that society imposes on the criminal actor affects decisions to engage in sanctioned (and non-sanctioned) behavior.[28] As a rational society will not wish to incur greater social

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[25] If an offender realizes a greater gain from a successful kidnapping than from a successful robbery, then equal penalties for both offenses will cause an increase in the number of kidnappings.

[26] If an offense carries a sanction of 10 years, and a probability of imposition of 0.1, the expected private cost is 1 year. Alternatively, the sanction can be lowered by 5 years, and if the probability of facing sanctions is increased to 0.2, then the same deterrent is achieved. In the first case, less offenders are caught, but are punished more severely. In the second case, twice as many offenders are caught, but they are punished less severely. The costs associated with the second instance are much greater because twice as many offenders are processed through the justice system.

[27] The magnitude of the sanction [M], and the cost of juridical/carceral institutions [C] are related endogenously. Increasing magnitudes of sanctions involve longer prison terms, which raise the resource costs of these institutions.

[28] The effects of the structure of penalties on an offender's behavior are part of his opportunity costs. Costs which make an offense less attractive than the offender's next best alternative will deter the commission of that offense.

costs from preventing crime than those imposed by the commission of those crimes, so too will individual actors not wish to incur greater harm from an activity than the private benefits derived from that activity.

There are two aspects involved in the determination of the magnitude of private benefit that a criminal derives from committing an offense. The first involves benefits easily quantifiable.[29] For example, in a robbery, the benefit is the market value of the stolen goods. The second aspect is the psychic benefit (or penalty) arising from commission of the act. The psychic benefit gained from a robbery might include pleasure derived from the use of force,[30] the idiosyncratic value of a unique converted good, the satisfaction of breaking or evading the law, or revenge if the victim and offender have had a past association.[31] The psychic benefit associated with an offense can also be a psychic penalty deterring the commission of a crime. Although some may benefit from breaking the law, others may feel guilt. Victims who are past associates may be friends rather than enemies. Therefore, an indeterminacy of values for psychic variables exists. Also, the combination of pecuniary and psychic benefits may be so high that no sanction, however certain, will deter the offender.[32]

The private criminal actor who acts in rational self-interest will weigh the costs and benefits of committing an offense. The cost to the offender is a function of the levels of probability and magnitude of sanctions set by society ($M \times P_i$). If the benefit to the offender outweighs the disutility of the sanction discounted by its probability, then the individual will commit the offense. Thus, an offender will commit an offense when

$$B \times P_o \leq M \times P_i,$$

where B is the private benefit the offender derives from completing the act. The trick is for society to structure a set of sanction magni-

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[29] The quantifiable benefits of the offense can be objectively determined. The thief who steals the paste believing it to be a genuine diamond has a low quantifiable benefit. His subjective valuation is understood better as a psychic benefit in the thief's utility calculation.

[30] *See* R. POSNER, *supra* at 202.

[31] Psychic benefits are notoriously difficult to quantify, but play an indispensable role in our criminal justice system. Motive and *mens rea* may be understood as types of psychic benefits and penalties. The offender's subjective assessment of the offense may indicate his *mens rea*, and corroborating evidence of idiosyncratic benefits attendant to the crime may establish motive.

[32] Crimes of passion may not be capable of deterrence. Retaliatory crimes associated with high psychic benefits are not deterred by our highest sanctions.

tudes and probabilities, constrained by the costs they impose,[33] that deters the greatest number of offenses. This optimal structure of criminal penalties marks the efficient level of both sanctions and criminal activity.

The expected private benefit of an offense is the actual benefit of the completed crime discounted by the probability of success. So, for example, the private benefit of robbing Fort Knox is the actual benefit, if successful, less the probability of failure. Usually, the discount for private benefit is merged into the analysis of private cost associated with the offense. The merged variables are the probability of failure from the expected benefit calculation $(1 - P_o)$, and the probability of harm from the expected private cost calculation (P_i). Where an offender's success is controlled by the likelihood of being apprehended, the cost/benefit accounting is unaffected by the merger. But for those offenses which are controlled not by the probability of apprehension but by the probability of failure,[34] the discount variables must be kept discrete.

If criminal actors will not commit offenses when their expected benefits (pecuniary and psychic) are eclipsed by their expected costs (probability and magnitude of sanctions), then sanctions which respond only to changes in social harm are inefficient. Such sanctions produce the optimal amount of deterrence accidentally, where the offender's disutility coincides with social harm. Where these two utilities are discontinuous, such sanctions will either under- or over-deter.[35]

In sum, the social cost of crime is imposed from two sources:

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[33] This is the cost of appreciating marginal deterrence. This cost is binding when society desires to limit expenditures on crime by the harm it imposes directly, and by the harm generated by the incentive effects of stiffer penalties (*i.e.*, engaging in more harmful activities).

[34] Imagine a complex computer fraud scheme that is masked well enough so that it is impossible to trace. The success of this crime relies on a large number of variables which are difficult to control. The decision to commit this crime requires discounting the private benefits of a successful scheme by the probability of its failure, making the crime less attractive. Furthermore, the relatively small chance of being apprehended lowers the offender's expected private cost, making the crime more attractive.

[35] A sanction will over-deter when the private benefit to the offender is less than the social harm associated with the offense. Imagine that death is the penalty for negligent homicide. The benefit to the offender (which might be a savings on precaution costs) is much less than the social harm. A severe penalty reflecting that harm will deter all actors for whom the penalty exceeds the benefit. But a severe penalty also causes many actors who fear their own fallibility to substitute away from socially beneficial activities (*e.g.* surgery) that risk such penalties. If instead the penalty were set at the outer bounds of the actor's private benefit from committing the offense, all who are capable of being deterred will be, without the added social cost of over-imprisonment and erroneous convictions. A sanction will under-deter where the levels of private benefit and social harm above are reversed, and the penalty reflects social harm.

expected social harm and expected social expenditure. The former variable reflects actual harm discounted by the probability of its occurrence $(H \times P_o)$. The latter variable reflects the costs of apprehension and incarceration (C). Similarly, the private utility of crime for the offender is imposed from two sources: expected private benefit and expected private cost. The former variable reflects the actual benefit received from committing the crime (both pecuniary and psychic) discounted by the probability of its attainment $(B \times P_o)$. The latter variable reflects the actual sanction imposed discounted by the probability of its imposition $(M \times P_i)$.

Optimal sanctions involve the minimization of social cost in deterring criminal actors whose prospective benefits are less than the probable social harm from the act. Because the expected private benefit of an offense decreases as the probability and magnitude of sanctions increase, criminal actors who would impose more harm than their gain will be deterred. Deterrence thus occurs when the probabilities and magnitudes of sanction are less than the social cost of the crime, because the actor's expected benefit is driven below his expected harm. Described algebraically, criminal sanctions will efficiently deter offenders where

$$B \times P_o < M \times P_i \leq (H \times P_o) + C.[36]$$

III. Sanctions and Criminal Attempts

Criminal attempts are punishable traditionally under both the common law and the Model Penal Code.[37] The severity and timing of the sanctioning of an attempt are, however, debatable. Punishing attempts as severely as completed offenses incurs high social costs and ignores the potential reductions in harm due to marginal deterrence. The role of marginal deterrence is particularly appropriate in discussions of criminal attempts.

Three methods of sanctioning attempts exist: the same sanc-

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[36] This statement may be summarized in the following steps:

1)	$M \times P_i$	[there is a combination of magnitudes and probabilities of sanctions for an offense]
2)	C	[whose social cost]
3)	$C < (H \times P_o)$	[is less than the social harm the offense imposes]
4)	$B \times P_o$	[which drives the offender's benefit]
5)	$B \times P_o < M \times P_i$	[below his expected cost].

[37] "[A]ll offenses of a public nature, that is, all such acts or attempts as tend to the prejudice of the community, are indictable . . . ." Rex v. Higgins, 102 Eng. Rep. 269, 275 (1801). Section 5.05(1) of the Model Penal Code grades attempt to commit first degree felony as a second degree felony and all other attempts as equivalent in grade to the offense attempted. *See* MODEL PENAL CODE § 5.05(1) (1962).

tion,[38] a lighter sanction,[39] or no sanction at all.[40] Although society prefers the middle option, the other options may highlight the seriousness of limiting the preferred course of sanctions.[41]

Sanctioning attempts as if they were completed offenses implies that they are equally harmful. An attempt may fail because it was either executed poorly or averted by chance. Thus, the offender's intentions often determine the act's potential harm. When an attempt fortuitously fails, the potential for harm equals that of a completed offense. The calculating offender has "completed" the rational portion of the crime, but the completion of the crime itself was thwarted by supervening events. If sanctions respond to rational processes (incentives and disincentives), then non-calculated events should not affect the severity of the sanction.[42]

An attempt interrupted by enforcement agencies may also fail. In this scenario, equal punishment of attempted and completed crimes is justified because only the social investment in enforcement averted a criminal act. Because the decision to commit the crime already has been made, the risk of social harm equals the completed offense.

Abandoned attempts and interrupted attempts are often treated differently. The former deserve less sanction than completed offenses because the criminal voluntarily halted the progression of social harm by abandoning the pursuit of private benefit. The latter deserve sanctions similar to completed offenses because the criminal is forced to give up the pursuit of benefit and the escalation of social cost. While this distinction sits well with our moral intuitions,[43] it fails to account for the offender's specific utility calcula-

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[38] *See, e.g., id.*

[39] Many state legislatures have instituted lighter sanctions for attempts. *See* Grevase, *Grading Criminal Attempts—A Proposed Solution for Statutory Reform in Sentencing*, 20 RUTGERS L.J. 479, 481 n.12 (1989).

[40] Early common law did not punish attempts as a separate offense. Rather, crimes that fell short of their goal became offenses in their own right; assault (not requiring contact), and larceny (not requiring a permanent deprivation of property) are common examples. P. LOW, R. BONNIES & J. JEFFERIES, CRIMINAL LAW, 341-42 (2d ed. 1986).

[41] "Should [attempts] be punished as severely as the corresponding complete crime? The answer of most legal theorists today is: yes. . . . Legal theory is seldom so out of step with practice." Davis, *Why Attempts Deserve Less Punishment than Complete Crimes*, 5 LAW AND PHIL. 1 (1986).

[42] *See, e.g.,* Becker, *Criminal Attempts and the Theory of the Law of Crimes*, 3 PHIL. & PUB. AFF. 262 (1974) (arguing that the possible occurrence of supervening events is discounted in the decision to commit the crime).

[43] Such an intuition is captured in Kantian moral philosophy. Abandonment is the equivalent of an autonomous, rule-directed activity, which an agent imposes upon himself, and whose consequences are his own responsibility. Interruption is a heteronomous rule, for which the agent is not responsible. Two attempts halted at the same

tions. The offender who abandons the attempt rejects a more harmful course of conduct because the gain in expected benefit from continuing the attempt is offset by the expected harm of sanctions.

The offender apprehended during an attempt also chooses between more and less harmful activity differently than the offender who made the "moral" choice to abandon the attempt.[44] When the offender is near the completion of a crime and is interrupted, he makes the final and important choice whether to pursue the offense or acquiesce. If the penalty for the interrupted attempt is as severe as that for the completed offense, then some offenders may evade or resist arrest. The "shoot out problem"[45] indicates that because offenders interrupted in attempts choose to impose more or less social harm, they need proper incentives to reduce social cost.

Two major obstacles exist to equating the sanctions for attempts and completed offenses. First, failed attempts may indicate that they were less harmful than a similar completed offense. If an attempt is detected early, enough concomitant social harm to warrant the imposition of sanctions may not exist.[46] Even if social harm results, that the attempt was not completed may indicate the act was less harmful than if completed.[47]

Second, severe punishment for attempts imposes large social costs. Costs of incarceration increase as longer sentences are imposed. Although fewer offenders will initiate attempts, those who do will lose less by completing the crime. This effect raises marginal deterrence, which directs the incentives of actors to move from

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stage would have two different moral bases. The abandoned attempt is a moral act because it was the result of the agent's choice. The interrupted attempt is not a moral act because the agent has no responsibility for its occurrence. *See* I. KANT, FOUNDATIONS OF THE METAPHYSICS OF MORALS (1978).

[44] The moral intuition errs in requiring pure autonomous decision-making. The interrupted attempt is heteronomous; but also incorporates an autonomous decision-making event which can be manipulated through legal incentives. *See supra* note 40.

[45] The shoot-out problem refers to the portion of the interrupted attempt that remains within the offender's control. To resist apprehension or to acquiesce is a decision with both private and social welfare consequences. Inducing the interrupted offender to acquiesce converts the interruption into an abandonment (albeit of a lower order than an uninterrupted abandonment). Nevertheless, an abandonment and an acquiescence result in the substitution of lower for higher cost behavior, and so must be preferred by the legal system.

[46] The Model Penal Code, for example, requires an *actus reus* in addition to *mens rea* for the imposition of sanctions. The mental preparation of a crime before an act in furtherance of the crime has been committed are not punished. *See* MODEL PENAL CODE § 2.01 (1962).

[47] *See* Grevase, *Grading Criminal Attempts—A Proposed Solution for Statutory Reform in Sentencing*, 20 RUTGERS L.J. 479, 496 (1989).

more to less harmful activities. Unfortunately, this loss of marginal deterrence may induce persons on the margin to refrain from socially beneficial behavior for fear of severe sanctions.

Marginal deterrence also refutes the option of not punishing attempts. Although the no-sanction option draws from the ideas that social harm is low and error costs are high, the offender lacks incentives to abandon an initiated attempt. The absence of sanctions is a missed opportunity for society to add disincentives to the initiation of attempts and incentives to impose less social harm.

Both the same-sanction and no-sanction solutions fail to account for marginal decisions. The decision to commit the crime determines both the social harm and expenditure of the offense and the sanction to be imposed. Because incentives surface within the commission of an offense and the utilities of society and the offender are recalculated continuously, more precise and efficient sanctions can be fashioned.

Grading sanctions less severely for attempts than completed offenses recognizes marginal deterrence. The goal of graded sanctions for attempts is minimizing social cost by moving offenders from more to less harmful activities. Creating disincentives and/or incentives for offenders through the magnitude and probability of sanctions achieves this goal. The method of grading is unclear. Sanctions can reflect changes in either expected social cost during the attempt or expected private benefit of the offender.

An example demonstrates the fluctuations in expected social cost and expected private benefit. To ease the complexity of the model of crime and punishment, the example is of a burglary of fungible goods, which accentuates the pecuniary gains and losses associated with the offense. Examining a hypothetical offense may reveal the optimal level of sanctions for the reduction of social cost.

The premises to be burgled contain $100,000 locked in a safe. In stage one of the attempted burglary, the offender acquires locksmith instruments, a stethoscope, a gun, and other tools of the burglary trade. Properly equipped, the putative burglar completes stage two by picking the lock of the premises and gaining access. The offender ends stage three by locating the safe and deftly cracking the combination. In stage four, the burglar gathers the loot and escapes, completing the crime.

Assume that the burglar failed in his attempt after stage one, but before undertaking stage two. He has lowered his expectations of succeeding because he has either learned that his target installed a very sophisticated security system or was intercepted by the police.

Recall the factors that enter into the utility calculation. First, the expected social harm, which is the magnitude of harm discounted by its likelihood, is relatively low. Possessing burglary tools is less harmful than completing a burglary. Second, the expected social expenditure, the sanction magnitude discounted by the likelihood of imposition, would be great. Detecting preparatory stages of offenses is difficult and labor intensive.

At stage one, expenditures are high relative to harm because the social cost of sanctioning stage one attempts is high while social harm is low (which is society's incentive to deter). Society imposes sanctions (magnitude and probability) only where their cost is less than the social harm imposed. A rational society will have a relatively light penalty for stage one attempts.

Now assume that the burglar completed stage one and is in the middle of stage two, breaking into the premises. He either cannot pick the lock or is detected. Here, social harm increases with the escalation of the probability of harm. Society can afford larger expenditures than in stage one to compensate for the increased social harm. Thus, the probability and magnitude of stage two sanctions will be incrementally higher than stage one sanctions.

Now suppose that the offense terminates at stage three, cracking the safe. Society sets sanctions reflecting its costs. Expected social harm increases because the likelihood of completion is closer to unity. Therefore, a higher combination of magnitude and probability of sanctions exists. The closer to completion, the larger and more certain the sanction. At stage four the burglary is completed, and the appropriate sanction levels are adjusted so that the social harm of the burglary justifies sanctions bounded by social expenditure that, at least, offset social harm.

The social consequences of a completed burglary flushes out the applicability of sanction theories. A graded structure of sanctions, increasing incrementally with the social harm imposed by the offense, means that the levels of sanctions reflect not only the relative severity of the offense, but also the severity at other stages of the same offense. Assume that harm-related sanctions increase by the same margin for each successive stage; thus, the penalty for stage two is twice that of stage one, for stage three, three times stage one, *etc.*

A calculation of the offender's private utility at each stage of the hypothetical burglary reveals that sanction grading minimizes both expected benefit (benefit discounted by probability of success) and expected harm (magnitude of sanction discounted by probability of

imposition). Although the offender lacks incentives not to initiate the offense, he equally lacks incentives to initiate it. At stage two, the expected benefit slightly increases, resulting from the increase in probability of success. The benefit at stage two is the same as stage one; the increased likelihood of success (the second stage is closer to the actual benefit than the first) is offset by the expected harm (an increased likelihood of apprehension and magnitude of sanction).

At the third stage of the attempted burglary, the benefit remains unchanged, but the probability of success increases. This increased probability is again limited by the increase in the probability of suffering sanctions. But, the magnitude of these sanctions increases. At stage four (when the burglary is completed), a discontinuous jump occurs in the private benefit, and the probability of suffering sanctions lessens.

The sharp increase in private benefit from stage three to stage four gives the offender a powerful incentive to complete the attempted crime. The savings in expected private harm from abandoning an attempt would have to reflect the increase in private benefit to induce the offender to abandon an attempt upon completion of stage three.

To compensate for this discontinuous increase in private benefit, society must greatly increase expected private harm. Raising the magnitude of sanction remains the only variable available to deter completion. But, large rises in magnitude of sanctions lessens the benefits of marginal deterrence by moving offenses into the class of more highly sanctioned activities. For example, if the discontinuities of private benefit from completed burglaries require an increase in magnitude of their sanction, then the completed burglary may be sanctioned as severely as, say, assault with a deadly weapon. Such action merely postpones the problem of social harm because a putative burglar will assault anyone who intrudes during the commission of the offense.

The value of marginal deterrence cannot be preserved by greatly increasing the magnitude of sanctions for a completed offense. The expected harm from completing offenses must mirror the expected benefit for offenders to realize a savings by abandoning attempts. If the structure of sanctions rationally induces offenders to complete offenses, then the sanctions are inefficient. In this instance, incrementally increasing sanctions apparently provides such an inducement because the option of increasing the magnitude of sanctions has an upper limit.

IV. MARGINAL DETERRENCE AND SANCTIONING ATTEMPTS

Sanctions reflecting social cost produce a rising continuum of penalties for offenders. As shown above, these sanctions inhibit the benefits of marginal deterrence when attempts are near completion, insofar as offenders are induced at stage three to complete the offense rather than suffer the penalty for the attempt. Structuring sanctions to parallel the offender's private benefit reduces social cost.

To counter the discontinuous increase in private benefit from stage three to stage four, the harm expected must also be high *relative to stage three sanctions*. Because the sanction structure has an upper bound, a discontinuous *benefit* for an offender to abandon an attempt requires the *reduction* of sanctions for substantially completed attempts. While this is counter-intuitive because it is not geared to social harm, this theory efficiently incorporates both social cost and expected benefit.

In the hypothetical burglary, social harm is high relative to the expected private benefit. Society must induce the offender to abandon the crime when he is so close to a large jump in private benefit. A low sanction at stage three and a discontinuously high sanction at stage four provide the proper incentives for offenders. As social harm is high while both magnitudes and probabilities of sanctions are bounded by social cost concerns, such criminal incentives appear as the only alternative.

The incentive solution to sanctioning attempts does not merely invert the problem of bounded sanctions. While providing an incentive to abandon very harmful activities, it may be argued that incentive-based sanctions also provide the incentive to initiate offenses because low stage three sanctions imply even lower stage two sanctions, *etc.* A loss in initial deterrence offsets the savings in marginal deterrence.

If incentive-related sanctions imply ever-lowering punishments for attempts close to initiation of the offense, then the inversion criticism would be credible. The incentive solution would parallel the social harm-related sanction scheme with much of the bite taken out of the magnitude of sanctions. But, such a deceleration of sanctions for attempts need not regress toward initiation. To the contrary, the offender has less expected benefit to bargain for, and society has less social cost to worry about avoiding. For example, at stage two of the hypothetical burglary, the offender can either abandon the attempt and suffer stage two consequences or proceed to stage three. This decision involves the utility calculations associated with

each option. The offender does not benefit greatly by moving from stage two to stage three (unlike the move from stages three to four); nor is society harmed greatly by this move.

If the penalty for stage two were slightly higher than the penalty for stage three, then some offenders at the margin will move from stage two to stage three, where the punishment is comparatively less severe. But, many offenders will be disinclined to attempt stage two because an abandoned attempt will yield a sanction high relative to the benefit. If the penalty for initiating an attempt, stage one, is higher relative to stage two penalties, then the same effect would occur. Although some margin of offenders will be induced by the downward scale of punishment to progress in attempt stages, more potential offenders will not even initiate the attempt.

The parabolic scheme of sanctions outlined above places the rational inducements to commit offenses in the middle of the offense where the acts induced impose the least harm. High penalties for initiating attempts at the outset deter offenders who may not be dissuaded by penalties at the lowest end of the spectrum.[48] The perverse incentives that arise in escalating sanctions between attempts and completions are neutralized when they likely produce the least increase in social cost. Where attempts need only one decision to become completed crimes, low sanctions can best exploit the savings of marginal deterrence by making abandonment more attractive relative to completion of the offense.

V. CONCLUSION: THE CRIMINAL ECONOMY AND SANCTIONS AS PRICES

Incentive-based sanctions that reflect shifts in the offender's private benefit, rather than social harm, propose supply-side answers to the market question of the optimal level of criminal sanctions. Offenders "supply" offenses where their expected private benefit exceeds their expected private cost. Society's "demand" for offenses is negative; it is willing to pay a price to prevent the supply of offenses. Society would prefer no offense to be committed, but is unwilling to pay for a zero level of criminal activity. Therefore, the

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[48] In a traditional graded sanction scheme, the lightest penalties are imposed for the earliest stages of the offense. These low sanctions will not deter those actors on the margin of receiving a net benefit from initiating an attempt. Incentive-based sanctions for the initial stage of an attempt may be lower, as high, or higher than stage two sanctions; but the initial stage sanction will be higher relative to the private benefit than will stage two sanctions. Thus, incentive-based sanctions may slope downward, but they are proportionally more severe at the initiation and completion of an offense than they are in the midst of an offense.

most efficient sanctions will deter the most criminal activity per dollar of social cost.

Incentive-based sanctions appear to be a price for permission to commit an offense.[49] The offender's private benefit (how much he values the offense) is structured to be less than his private cost (the price of the offense) so long as the price does not exceed the social cost of the offense. Offenders whose expected benefit exceeds the social cost of the offense pay the price for the offense by suffering sanctions because they value the offense above its cost.

Contrary to appearances, incentive-based sanctions are not prices for permission to commit offenses, but are incentives to refrain from doing what is forbidden. Traditional graded sanctions that reflect shifts in social harm price offenses. Those sanctions require an offender to internalize the external social harm he imposes; as long as the offender pays for the social harm his act imposes, traditional sanctions do no more than exact that price. Thus, offenders whose private benefit does not parallel social harm will commit offenses capable of being deterred when there is a marginal benefit to committing the offense exceeding the social harm imposed.

Sanctions that reflect shifts in the offender's private benefit are largely independent of social harm. Incentive-based sanctions do not require the internalization of externalities imposed by the offense. Rather, these sanctions serve as directives to keep the offender's private benefit below his private cost. Where prices permit offenses to be committed as long as they are paid for (social harm is internalized), incentives make offenses undesirable to purchase. Incentive-based sanctions are penalties threatened for committing offenses which are rarely worthwhile for the offender.[50]

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[49] The distinction between prices for permitted behavior and sanctions for forbidden behavior is developed in Cooter, *Prices and Sanctions*, 84 COLUM. L. REV. 1523 (1984). Cooter devises a test for distinguishing priced from sanctioned behavior by legislative access to information about the external costs and the socially desirable level of an activity. When lawmakers know the socially desirable level of an activity but not the external costs it imposes, sanctions are preferable to prices, and vice-versa. The importance of the distinction is that priced behavior internalizes harm, while sanctions motivate socially desirable behavior.

[50] Pricing sanctions to internalize harm is reminiscent of Coase's treatment of entitlements. The Coase theorem would predict that in the absence of transaction costs, the efficient level of activity would be reached no matter which party is granted the legal entitlement. If the victim has the entitlement, then the offender would be willing to pay the victim to commit the offense up to the price of the offense. When sanctions price offenses to internalize harm, then offenders pay the price in the form of sanctions to commit the crime. If the offender has the initial entitlement, the victim will bribe the offender not to commit the offense up to the cost of the harm the act imposes. In either

Sanctions for attempts may be in the form of prices or penalties. Sanctioning attempts in the same way as the traditional grading scheme prices initial attempts low, according to the social harm imposed. A late stage attempt would be priced high reflecting the increased social harm. Offenders who can afford initial prices will attempt the offense until their private benefit is reduced below their private cost. Because sanctions for initial attempts are low, a modest private benefit for the offender would make the attempt worth the price. At a late stage in the attempt, the price is high relative to the private benefit and is not worthwhile. Although an offender would not initiate a late stage attempt, an offender at this stage would be marginally better off by completing the offense rather than abandoning it. The offender pays a higher price relative to his benefit at stage three than upon completion.

Penalizing as opposed to pricing attempts allows the sanction to deter the offense independently of social harm. Initial attempts may be "priced"[51] above social harm, because these sanctions are bounded by social cost, which exceeds social harm. Late stage attempts may be "priced" well below social harm in order to make completion less desirable than abandonment. The limitation of social harm upon pricing sanctions fails to deter those offenders whose private benefit exceeds social harm but not social cost. Incentive-based sanctions deter offenders whose private benefit is less than the social cost of the offense, without inducing offenders to substitute more harmful activities. Both traditionally graded sanctions and incentive-based sanctions will deter a large number of offenders from attempting offenses, and fail to deter a small number of offenders from completing offenses. Under either scheme, the private costs of committing offenses are usually high enough to deter most people from committing offenses. Likewise, there will be a small number of offenders whose private benefit exceeds social cost, and will be undeterred by sanctions. The crucial difference between traditionally graded and incentive-based sanctions applies to offend-

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case, offenses valued above the harm they impose will fail to be deterred. *See* R. Coase, *The Problem of Social Cost*, 3 LAW AND ECON. 1 (1960).

Incentive-based sanctions will deter those offenders whose expected benefit is less than the social cost the offense imposes. Thus, offenses will be deterred independently of whether social harm is internalized.

[51] The "price" imposed by incentive-based sanctions differs from that of traditional grading schemes. In the latter, the price of the offense is the harm that the offense imposes; an offender who internalizes this cost (who values the offense more than the harm it imposes) pays the price for committing the offense. The former scheme, on the other hand, arranges the "price" of the offense so that no offender is willing to pay it, unless his benefit exceeds the offense's social cost. The price that no offender is willing to pay (except those unable to be deterred) is a penalty to prevent the forbidden.

ers within this margin, whose private benefit lies between social harm and social cost. Rather than pricing offenses to internalize external social cost, incentive-based sanctions provide incentives to move to less harmful activities.

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