

Reexamining the Role of Incarceration and Stigma in Criminal Law

by

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I Introduction

1 Introduction

One of the ways by which the legal system has responded to different sets of problems, specifically to acts of negligence that has resulted in greater disastrous consequences to society due to the changing physical, economic, and institutional relationships is the blurring of the traditional scope and boundaries of criminal law, especially with respect to tort. The blurring of criminal law's boundaries means the trend seen in criminal law which now shares properties that were traditionally exclusive to it, both procedural and substantive. This includes the criminalization of acts that were formerly merely tortious or governed by regulation or administrative law (Bowles, Faure and Garoupa, 2008; Luna 2005); the use of civil procedures to pursue the objectives of criminal law¹; the relaxation of mens rea in criminal law as seen in the case of corporate crime; and, in common law countries, the use of punitive sanctions outside criminal law (Mann, 1992).

A debate exists in the legal as well as in the law and economics community regarding the desirability of this trend. While some think that the trend is advantageous to the society since it allows more flexibility in the legal system, enabling it to cope with fast-paced changes or with new problems in the society, others believe that there is some value in preserving the traditional boundaries of crime (See for instance Cheh,

¹See for instance Cheh (1991). Civil remedies are being used to pursue criminal offenses mainly in order to sidestep the latter's strict procedural rules. See also Svatikova (2011) for a discussion concerning when

1991; Coffee, 1991, 1992; Cooter, 1999; Kadish, 1963; Koenig, 1988; Luna; Mann, 1992).

Among the often cited reasons behind criminalization are the need to impose harsher punishment in order to address increased harm and the need to address deterrence issues arising from a more complicated organizational structure. For instance, in the case of criminal of environmental pollution or disasters, the costs to society has increased dramatically, making punitive sanctions necessary for firms to internalize such costs. Criminal vicarious liability is imposed on the corporation, a legal entity, for the acts of its employees. This prompts the principal to adopt rules within their organization to police their own ranks.

Critics, however, claim that the harm principle is sometimes abused and exaggerated in order to pursue objectives other than a real and careful analysis of the costs and benefits to society. Criminalization, being the most severe form of sanction, sends a signal that the incumbent legislature and executive are serious in solving a particular problem in order to gain popularity (Beale, 1997). As such, they argue that criminalization has proceeded without a sound rational criteria other than serving the political and economic interests of the incumbent. Being the most costly sanction to administer, criminalization should therefore proceed only if it serves to enhance society's welfare. Others, meanwhile, argue that criminal law should be reserved for the most serious offenses and acts that show moral culpability (Hart, 1958; Kadish, 1968).

1.1 Significance of the Study

According to a study documenting the cited trend in the US, there are over 4,000 offenses that carry criminal penalties in the US Code, reflecting a one-third increase since the 1980s (Baker, 2004). These include non-traditional crimes such as fraudulent access to financial information and offenses committed against the environment, with the latter comprising 35% of the total. This trend is also happening in Europe, albeit in a less dramatic pace and more limited scope. Molina (2011) characterized the problem of overcriminalization as (1) the criminalization of acts that harms trivial interests, (2) the criminalization of acts that causes trivial harm to important interests, and (3) punishment that is not proportionate to the harm caused. Criminalization of the type involving the last two sets are the ones that are more manifest in Europe².

One of the results of the trend is the huge amount spent in the maintenance of the penal system. To illustrate, the rate of incarceration in the US has climbed by 240% from 220 per 100,000 individuals in 1980 to 753 in 2008³. In 2001 alone, the US spent \$38.3 billion to maintain their correctional facilities⁴. This rate of increase has exceeded spending in health, education, and natural resources from 1986-2001⁵. In England and

² According to Molina (2011), in Europe, individual culpability as a requisite for a criminal act is more respected than in the Anglo-American jurisdiction. Among the other reasons he cited for this phenomenon are: the collection of criminal offenses as a single code as in Germany and Spain; the legal education; and cultural tradition.

³ See for instance Schmitt, Warner and Gupta (2010).

⁴ See State Prison Expenditures 2001, Bureau of Justice Statistics (2004). The average cost of keeping an individual in prison in 2001 amounts to \$22,650.

⁵ Ibid.

Wales, this figure amounts to 3.84 billion pounds⁶. Although there is an increase in prison population in other parts of the world, some countries such as Finland and Germany have tried to rely less on imprisonment to deliver criminal justice (Mauer, 2003; Young and Brown, 1993). According to studies, the increase in the incarceration rate in the US reflects the shift in the punishment choice of the US, which gradually relies more on incarceration and stricter sentencing guidelines and less on probation, parole or community service as it has outpaced the growth in population rate and violent crime (Schmitt, et al, 2010).

Although the huge costs of imposing more severe punishment is high, this should be weighed with the corresponding societal benefits. If a significant number of individuals were deterred from committing dangerous and harmful acts wherein the costs to the victims are higher than the enforcement costs and the benefits to the individual, then this trend may be considered welfare enhancing. If it has prevented an environmental disaster from occurring and if it could have averted financial crises with society losing more than what they pay for maintaining the penal system, then the shift towards punishment is an appropriate policy. However, if the same acts may be deterred and prevented from occurring using an institutional technology that is least costly to administer than criminal law, such as tort or administrative law, then society should prefer the latter set.

Apart from this is the issue of overdeterrence. Criminal punishment may be considered as too severe to sanction some of these acts, diluting the welfare

⁶See Prison and Probation Expenditure, 1999-2009, Center for Crime and Justice Studies. A comparative study of incarceration is beyond the scope of this paper. For data on comparison of rates of incarceration rates across countries, see Bureau of Justice Statistics (2003) World Factbook of Criminal Justice System.

enhancement objectives behind the legislation. Aside from the monetary sanction, an offense branded as a crime may sometimes carry with it an informal sanction in the form of stigma, hence, resulting in a higher total sanction.

1.2 Research Question

This study aims to contribute to this literature by exploring how the diffusion of the traditional boundaries of criminal law and the overlapping of its scope and procedural rules with other branches of law, particularly tort law, aid in improving the society's welfare.

Specifically, our main research question is concerned with determining the circumstances where the criminalization of an act leads to the improvement of society's welfare. We will focus and limit ourselves to studying two distinct sanctions that under certain circumstances can be invoked and can be present under criminal law -- incarceration and social stigma. These two properties are selected since these sanctions are claimed to distinguish criminal law from tort and administrative law.

In order to provide an answer to our normative question, an understanding of how these two sanctions arise and affect individual behavior is necessary. Thus, we will devote our analysis mainly to the positive analysis of incarceration and social stigma. In particular, we identify the channels by which they affect the individual's decision to commit a particular act as illustrated in a theoretical model.

See also Mauer (2003).

In the case of incarceration, we first asked how incarceration is different from a monetary sanction or a fine. The literature on law and economics does not usually make a distinction between the two forms of sanctions since the former can be transformed into a monetary sanction in the form of the individual's foregone income. Incarceration, moreover, is denominated in time and should also consider the individual's time constraint. Thus, we inquired how incarceration affects individual behavior differently from a fine, considering its relative scarcity as a resource.

Social stigma is an informal sanction that is claimed to be present in criminal law. However, it is not always the case that a criminal conviction carries social stigma. Our goal is to understand the conditions under which social stigma exists in criminal law. We first asked whether criminal law possesses institutional properties that enable it to stigmatize certain behaviors as well as the individual found guilty exhibiting the said behaviors. Then, we explored its relationship with social norms and the extent of criminal law's influence over it. Finally, we explored the differences between the court that imposes formal sanctions and the loose group of individuals that impose the informal sanction of social stigma.

The conditions that determine whether an act should be criminalized depends a lot on our description of how these two distinct sanctions -- incarceration and social stigma -- affect individual behavior. With the identification of these channels, we can then confidently move on to questions of policy.

1.3 Methodology

Our study uses the tools provided by law and economics. Although there are other objectives that may be adopted to explain why societies should criminalize a particular behavior, our standard rests on social welfare considerations.

We start from the assumption that individuals are rational and keen on maximizing their interests. They weigh the benefits and costs of committing a particular act. In the positive analysis of the role of incarceration, we apply the classical tools of economic analysis. Since incarceration is denominated in time, we considered the role of the individual time constraint in order to arrive at an unbiased description of how it affects individual decision-making.

In our analysis of social stigma, we consider the difference between the court and the rest of society with respect to the process involved in imposing the formal and the informal sanction. Social stigma is imposed by a loose grouping of individuals who lack the time and information to calibrate and impose the sanction. As opposed to the court, which is a specialized institution that has relatively more time, knowledge, and expertise to assign blame and culpability, the rest of society has relatively less time and less specialized knowledge⁷. In this context, we used the tools of behavioral law and economics and social norms to understand the dynamics of social stigma.

In both cases, we provided a model that captures our assumptions and

⁷ Kahneman (2003) distinguishes two modes of decision-making that is illustrative of the difference between the courts and the rest of society. System 2 is characterized by deliberate reasoning, slow, effortful and rule-governed. System 1 on the other hand is associative, fast, emotional-based and

theoretical arguments. The process of social abstraction associated with model building allows us to identify the channels by which the sanction actually affect individual behavior. The identification of these channels can serve later as a guide for policy. Although the theoretical results still need to be tested empirically, we can also cite empirical observations that are consistent with and more explainable by our theoretical results.

1.4 Plan of the Book

The book is divided into four parts. The first part, which includes this chapter, provides a general introduction to the book and includes a general review of the criminal law theory and classical law and economics literature on criminal law. Since most of the overlap that we refer to in this book occur with tort law, we thought that it would be more appropriate to compare and contrast the law and economics literature of criminal law with studies on tort law.

The second part, meanwhile, revisits the old debate on the circumstances dictating the preference between fine and incarceration. The literature on law and economics generally posits that a fine should be preferred over incarceration since the same level of deterrence can be achieved without incurring the huge enforcement costs associated with it. This assumption implies that society should rely more on fines and impose imprisonment on the wealth constrained individual who is considered to be

governed by habit.

judgment proof. However, instead of playing a diminishing role, incarceration, which can be treated as a case of full incapacitation, still plays an important role in different societies as a means of deterring individuals. Aside from this, forms of partial incapacitation, such as the driving penalty point system, have been accepted in several jurisdictions. In light of this, we explored the justifications offered by theory to explain it.

In chapter four, we considered the role of time constraint in the fines-versus-incarceration debate in a model. We find that just as fines cannot deter the wealth-constrained individual, the extreme case is also true, that the very wealthy may not also be adequately deterred by a fixed fine.

The third part is devoted to social stigma in criminal law. Apart from deterrence, others claim that criminal law also serves an educative role in society (Hart, 1958). Criminal law is the formal articulation of society's moral standards and, hence, violating such norms results in social stigma. According to Coffee (1991), one possible consequence of the blurring of the boundaries between tort and crime, particularly the criminalization of morally neutral offenses, is the dilution of the cited aspect of criminal law. However, social stigma and the moralizing and educative functions of criminal law is scarcely understood in the literature. These issues are addressed in detail in chapter five. The relationship between social norms and criminal law is also explored in the said chapter.

Chapter six, moreover, explores the conditions where social stigma is either present or absent in criminal law through the lens of behavioral law and economics. While the court is a specialized institution that assigns blame and metes out punishment,

the rest of society, on the other hand, have relatively less time to perform the cited tasks and relies instead on heuristic devices to impose the social sanction. Thus, we show how social stigma in criminal law can arise from the cognitive limitations of the rest of society who are imposing the sanction and how information is spread throughout society. The last part concludes.

2 Theories of criminal law: An overview

In order to understand the role of incarceration and social stigma in criminal law and how it can shed light on the issue concerning its scope, we first make a necessary digression. In this chapter, we provide an overview of the different theories that surround criminal law as a way to contextualize the issues surrounding the debate on criminalization and which conduct should be sanctioned by it.

2.1 Criminal law theory and criminalization

Within criminal law theory, the debate as to what extent is the expansion of criminal law desirable can be rooted to the different schools of thought, of which, the most prominent are the legal positivists and proponents of natural law. The latter ties the scope of criminal law to issues of morality, justice and fairness. The former on the other hand, grounds criminal law to the existing governance structure of the society and the function that it serves. It is often divorced from moral issues. Although legal theory has developed such that it is hard now to classify scholars into any of these two polarized boxes since they have borrowed and enriched the discourse from one another, it is still convenient to think of the debate in this manner. The tensions between these two views always appear in the discussion of which acts should be criminalized.

Apart from the substantive issue, others express concern over its implications on criminal procedure. This particular aspect of criminalization is the main concern of the liberalists who warn against the potential dangers brought by the possible dilution of criminal law's strict procedures. This could pave the way for the state's potential abuse of the individual's rights and a means to further constrain the liberty of the individual.

2.1.1 The scope of criminal law: moral issues and retributive justice

According to legal scholars, what distinguishes criminal law from other bodies of law is that the criminal law is a reflection of society's moral values and the main reason why it is obeyed is not primarily because of the harsh monetary punishment associated with it but because society perceives it to be worthy of pursuing (Hart, 1958). Criminal law scholars are against the idea of criminalizing so-called morally neutral offenses involving economic activities such as antitrust and corporate crimes. What should only be considered as criminal are conducts that exhibit the elements of culpability, harmfulness and wrongness (Greene, 1997).

According to Moore and Hurd (2011), criminalizing an act on the basis of negligence and other inadvertent acts is wrong. The criminal law is an institution that serves to deliver retributive justice within the society. Punishment is already an end in itself. For criminal law to serve this function properly, acts within its scope should at

the minimum, satisfy moral culpability in order to stoke moral reprehensibility within the community. According to Feinberg (1988), punishment has an expressive function in society. The community should have a sense that the harsh punishment under criminal law that includes prison is deserved by the individual who committed the act. It is therefore important that the community recognizes that the punishment meted under criminal law is deserved by the individual and should reflect the moral landscape.

On the other hand, Clark (2003) contends that retribution for its own sake is not the end goal of criminal law but the shaping of society's values. Thus, to the extent that the shaping of the moral values can be achieved without resorting to the harsh punishment under criminal law, then this is also desirable.

2.1.2 Economic crimes: morally neutral offenses

According to Kadish (1963), it is also problematic to criminalize acts that are conducted within the course of a business activity, the so-called economic or regulatory crimes. The criminalization of antitrust violations for instance, may just be indicative of an aggressive behavior which is not reviled within the business community. Apart from this, most of the economic or regulatory crimes are commonly defined in vague terms and it is hard to pin down what constitutes an illegitimate activity. As a consequence, individuals are not fairly warned and would make it harder for them to avoid the harsh punishment of criminal law. Unlike the traditional property crimes, where the property

of the individuals are protected, the newly criminalized acts, according to Kadish, restrain the individual from exercising their property interest and hence, constrain individual behavior rather than free it.

The ambiguity also has negative consequences for deterrence. According to Kadish, if the element of culpability is lacking or absent in the act, then it is improper to impose penal sanctions and the ensuing moral condemnation of committing a crime. Since the actor did not willingly and knowingly commit an act, it does not provide guidance to the actor or other persons with regards to how to behave in the future.

Coffee (1991) however argues that society's moral values are not static and are changing over time. Hence, to argue against the criminalization of economic crimes based on traditional concepts of morality that is strongly anchored in the past is also problematic. The criminalization of tortious offenses for instance may be just a reflection of this change. In order to properly gauge this development, it is necessary to look at both the informal and formal community standards and decide what has become acceptable behavior or not. He argues that when viewed from this evolutionary perspective, it appears that society first experiments with a standard sanctioned by tort which may eventually harden within the community and ripe for punishment under criminal law. If one looks at it this way, then it is necessary to look at the external factors that are pushing the changes and not be limited by legal doctrinal analysis alone.

2.1.3 Criminal law and sociology

Ball and Friedman (1965) make a distinction between traditional concepts of morality and popular morality. They argue that the public's prevailing perceptions of morality may depart from the traditional ones and criminal law can also influence it. Thus, the relationship between the violation of the legal code and to what extent can it be considered as a violation of society's moral code is much more complex than what a static description would suggest. It is therefore important to consider the current perceptions of morality and how criminalizing an act affects the behavior of potential violators wherein the penal sanctions include imprisonment.

The sociological literature emphasizes the educative and socializing function of criminal law. Apart from deterrence and retribution, the law also serves a socio-pedagogical purpose with respect to the communication and transmission of moral values. According to Andenaes (1966), the punishment in criminal law is a modern means to convey social disapproval. It is a ritualistic device that captures symbolically the society's condemnation that results in the stigmatization of the individual (Hawkins,1969). Punishment and stigma are effective in creating habitual lawfulness and its observance mainly arises through a process of imitating what the majority does and learning from the experience of those who have violated it.

The educative and socializing function of criminal law is also rooted in the institutional processes involved in criminalization and the procedures of trial and punishment. Criminal law is legislated and this provides an opportunity for society to discuss and arrive at a consensus as to what is culpable and wrong (Andenaes, 1966). Further, the criminal sanction is distinguished by higher standards of proof that ensures the culpability of the accused. Thus, it is through these institutional factors that the commission of a crime results in social stigma.

Levine (2007) on the other hand suggested that criminalization is a vehicle for society to arrive at a consensus whenever a given problem arises. It is therefore imperative to consider the interests of all the stakeholders and groups that are involved towards its resolution. This includes not just the victim, the accused, nor the legal community but also the media and religious groups who have different contesting views of the harm. He applied his framework to the case of how the legal definition of statutory rape changed over time and its relationship with the changing concept of morality as well as the views of the religious sector, the media and the whole community. Tigar (1984) also traced how the laws concerning theft evolved with concepts of property rights in feudal times and how individual culpability was defined.

According to Green (1997), the complex relationship between what is criminally prohibited and what is morally condemnable can best be illuminated with empirical evidence or case studies. In his study, he found that while traditional crimes are

condemned, there are acts such as the dumping of waste in a river that are considered just as serious. More recently, Stucke (2006) explored the perceptions of moral acceptability of antitrust law violations. Van Erp (2011) on the other hand, conducted an empirical study on the publication of violations in the Dutch financial market and concluded that more compliance is achieved when the manner in which they are communicated contains a moral message that can serve as a guide for future behavior.

However, the difficulty of conducting empirical studies is how to find a criteria that corresponds to moral culpability. According to Stucke (2006), it derives a lot from psychology as moral condemnation is dependent on the extent that it can derive sympathy from the individual. The individual puts himself in the position of the accused and decides whether he is capable of committing such an act. This implies that it depends on the other individual's emotions. Moore (1998) also identified emotions as a gauge or a heuristic device to assess moral culpability. The individual and how he feels towards issues is shaped by the moral fabric of society and he merely articulates them.

Meanwhile, according to Ball and Friedman (1964), the group of individuals whose conduct is the subject for criminalization do not usually perceive the newly criminalized act as reprehensible and often consider it to fall within the bounds of acceptable behavior. It is for individuals outside this group that condemnation usually first arises.

2.1.4 Liberalist critique of criminalization

So far, the discussion above only pertains to the substantive issues of criminalization. Another aspect of the criminalization debate concerns the relaxation of the strict criminal procedures in criminal law for the sake of convenience (Mann, 1992; Cheh, 1991).

At the core of the liberalist critique of criminalization is the unnecessary interference of the state on the individual's freedom and liberties. The only acceptable criterion to prohibit an act under criminal law is when it imposes harm on others. Feinberg (1988) also expanded the concept of harm to include acts that cause offense to others and thus, may include non-physical harms. The scope of criminal law should be narrowly confined to harms and offenses since the vast apparatus of the state is invoked on the individual at all stages, from the gathering of evidence, investigation, prosecution, trial and punishment. Thus, the procedures of criminal law should be strictly adhered to in order to guarantee the rights of the accused and protect it from abuse.

Ashworth and Zedner (2008) have pointed out that the expansion of scope of criminal law as well as relaxation of criminal procedures undermine the liberal concept

of criminal justice and individual autonomy. They traced the greater use of hybrid civil and criminal processes, of strict liability, of plea bargaining, to the changing nature of the state, from one that provides services to a regulatory state. They reiterated the need for a defence of criminal procedures especially when penal sanction is imposed.

2.1.5 Criminal procedure

So far, the discussion above only pertains to the substantive issues of criminalization. Another aspect of the criminalization debate, which the liberalist critique has focused their attention to, concerns its implications for criminal procedure. Apart from relaxation in criminal procedure, in the US, a form of hybrid penalties have surfaced. Punishment, a property traditionally reserved for criminal law is being imposed under tort violations. Koenig and Rustad (1998) called this phenomenon crimtorts.

Koenig (2007) ignores the libertarian critique and welcomes the “hybrid sanction,” as a way to complement the law enforcement gap in the US. In Europe and Japan, these harms would have been prevented by a relatively strong regulatory regime and social insurance. This also explains why criminalization while posing problems in Europe is not as widespread as in the US (See also Molina, 2011).

The spread of the level of criminalization between US and Europe can be

explained by the difference in criminal procedure (Diskant, 2003) as well as the existence of administrative and civil law remedies to complement the criminal sanction as a way of regulating individual behavior (See Enriques, 2003).

Diskant (2003) illustrated this in the case of corporate criminal liability. According to Diskant, the absence of corporate criminal liability in Germany is often attributed to the degree of acceptability of a legal fiction committing a crime. However, this can be explained more by the nature of the inquisitorial process that facilitates the gathering of evidence and the conduct of investigation under the principle of finding the truth. On the other hand, in the US, the rights of defendants are protected by the Constitution which can stymie the gathering of evidence but this is complemented by the degree of discretion conferred on the prosecutor.

2.1.6 Discussion

As what is apparent from the discussion in the previous sections, the legal theoretic discourse on criminal law is heavily steeped on issues of morality, retributive justice and the safeguarding of the rights and liberties of the individual based on liberalist ideals. While it can adequately explain the relationship between morality, culpability, and criminal law from a static point of view, the legal theory of criminal law have their weaknesses in explaining the dynamic relationship. Hence, it has its weaknesses in serving as a guide for which conducts can or should be criminalized,

even basing on the criteria that it has set. The sociological standpoint and psychology offers an alternative view to complement it. In our view, the economic analysis of law can also contribute towards a more refined account of this relationship. We will develop this idea further in the next chapters. The gist of the argument is that economics can provide an account of the strategic behavior of individuals and describe changes from one equilibrium to another based on individual private incentives. Hence, it can be used to describe dynamic changes and avoid the dilemma of defining morality and criminal law tautologically. We will also take into account the crucial role of information, how it is transmitted across individuals and its role in social stigma.

In the succeeding section, we will discuss the law and economics of criminal law. The issues of the economic costs and benefits of the act to the society as well as the reconciliation of the private incentives of the individual with that of society's general welfare interests play a peripheral role in the determination of the proper scope of criminal law under legal theory. These on the other hand are the central concerns of law and economics. Likewise, the setting aside of moral issues and retributive justice in the law and economics of criminal law had been a source of criticism. However, these too are being addressed in the literature and our aim is to contribute towards it.

2.2 Law and economics of criminal law

In this section, we provide a survey of the law and economics of criminal law. Since we are interested in the dynamic process of criminalization, especially with respect to acts that can previously only be sued under tort law, the survey as presented here, is compared with the latter.

The institutional properties of crime and tort are discussed with the aim of understanding what makes one law suitable to govern different types of behavior.

2.2.1 Institutional objectives

Tort law generally governs the set of acts that have positive benefits to society which, under certain circumstances or for a given level of activity, however, also inflicts harm. Parties, conversely, can take precautions, albeit costly, to prevent the harm from occurring. Tort law encourages individuals to proceed with the act as long as the harm is internalized by taking the optimal level of precautions and making him legally constrained to pay damages if he does not (See Posner, 1972 and Shavell, 1987). In the case of strict liability, the individual proceeds with his act and fully compensate the victim.

While tort is concerned with pricing a certain activity, criminal law is concerned

with its prohibition. The economic analysis of criminal law had been the object of study of Becker (1968) with his seminal article. Posner (1985) however thought that this account was incomplete as it did not consider the role of the substantive issues of criminal law. The punishment of harmless preparatory activity and an inquiry into the accused state of mind can be explained from an economic perspective as a means to prevent individuals from bypassing the market as a means of economic exchange. This bypassing, often accompanied by coercive transfers of wealth cannot be prevented by tort law alone, especially in the case of wealth constrained individuals. This also explains imprisonment as an additional sanction in criminal law. Further, most of the acts under criminal law are considered unproductive.

Cooter (1984) on the other hand, argued that punishment makes the individual more responsive to the legal standard. The individual faces a huge discontinuous jump in the sanction that prevents the individual from committing the act as opposed to merely pricing the behavior. Thus, society must impose punitive sanctions under criminal law when it wants to prohibit.

Another rationale for criminal law is the preservation of society's chosen transaction structure. According to Calabresi and Melamed (1972), society has chosen which rights and entitlements should be protected by a property or a liability rule. However, some individuals may convert property rules into liability rules and criminal law prevents this from happening by imposing punishment which serves as a kicker to obey the particular transaction structure.

2.2.2 Amount of punishment

Since tort is concerned with pricing behavior, imposing expected compensatory damage is enough to encourage the optimal level of care and the level of activity, assuming that agents are risk-neutral. Expected sanction that is higher or lower than the actual harm leads to overdeterrence. When agents are risk averse however, the sanction could be less than the harm.

In common law countries, the scope for awarding punitive damages under tort law are extremely narrow and are usually allowed when the act is wanton, malicious, reckless and grossly negligent. This implies that the individual's awareness and willfulness in inflicting harm should be established as a condition for awarding punitive damages (Cooter, 1999 and Biggar, 1995). The main economic rationale is that it is costly for an individual to take precautions or to avoid the injurer when the harm is intentional (See Biggar, 1995). In this sense, we can extend this argument and claim that the amount of damages between tort and crime is not discontinuous as compensatory and punitive but is actually, a continuous function that is related to varying degrees of culpability and intent.

Criminal law on the other hand, aims to prohibit (Cooter, 1999). Hence, it is necessary for the amount of the sanction to be punitive. Equating the sanction with the harm will merely make the individual indifferent to the considerations behind committing an act or not. Aside from market bypassing, there are other reasons cited in the literature on law and economics on why punitive sanctions should be awarded, both

under criminal and tort law (See Polinsky and Shavell, 1998): (1) when there is a high probability that individuals can escape liability because of the difficulties of proving liability, (2) when the harm is often underestimated due to the difficulties in measuring the total harm, (3) when the injurer's gains are considered as socially illicit, (4) when opportunities for bargaining are absent, and (5) as a way to address the issue of marginal deterrence, that is, more serious crimes should be punished more severely (Posner, 1985). Traditional legal theory, on the other hand, cites the necessity of punishing individuals who are found to be blameworthy and who have committed reprehensible acts.

2.2.3 Mens rea, intent, and culpability

Under the classic tort case, the individual's state of mind is unnecessary to bring up a suit. It is sufficient to show harm, cause, and a breach of duty on the part of the tortfeasor. In practice, however, intent or culpability appears not as a discontinuous function that is absent in tort and present in criminal law but a continuous function that becomes a basis for awarding punitive sanctions under the latter. It appears that gross negligence can be substituted for the requirement of mens rea. This is illustrated by the existence of a category for intentional torts and negligent acts that are criminally liable⁸.

⁸Some cases of negligent acts that can be criminally liable are seen in the cases of newly criminalized offenses such as medical malpractice, environmental liability, and corporate liability.

Landes and Posner (1981) in their seminal work enumerated the circumstances when a certain act can be classified as intentional under tort law without looking at the tortfeasor's subjective state of mind: (1) when the probability of the harm occurring is low and the cost of avoiding it is zero or even negative and, (2) the probability of the harm is high and the cost of avoiding it is low. In both cases the defense for contributory negligence cannot be raised and, in some cases, punitive damages are awarded.

On the other hand, gross negligence is also a basis for imposing criminal sanctions. From an economic point of view, the rationale does not differ from the awarding of punitive damages in intentional torts. However, from a deontological perspective, it is problematic to find a threshold of negligence that is reflective of the culpability of the individual (Hurd and Moore, 2011)⁹.

In contrast, under criminal law, establishing intent or moral culpability is an important issue. An economic rationale stems from the assumption that the cost of avoiding harm on the part of the victims when harm is intentional is very costly for society (Biggar, 1995). Under criminal law, it is also possible to punish an individual even if no harm has taken place yet. The economic rationale is also related to the inefficiency arising from the costly spending to avoid intentional acts (Harel and Ben-Shahar, 1996).

⁹They argue that negligence is not a sound basis for imposing criminal liability. See also Fletcher (1971).

2.2.4 Form of punishment

In criminal law, non-monetary punishment can be imposed on the defendant. Since the imposition of nonmonetary punishment is costly, punitive monetary sanctions should be preferred over the former (Shavell, 1985). However, there are cases when this would be necessary for optimal deterrence such as when agents are wealth constrained or judgment proof. When individuals are wealth constrained, fines alone will not be sufficient to deter individuals since the value from committing the criminal act is high and the monetary sanction is higher than what they can afford to pay given their wealth. Thus, imprisonment is necessary to deter this group of individuals.

Relying on high monetary sanctions alone may also encourage strategic behavior among agents and, hence, non-monetary sanctions may be preferable as there is no wealth transfer to the victim or prosecutors (Friedman, 1999).

According to D'Antoni and Galbiati (2007), nonmonetary sanctions may be more credible in conveying information on the harmfulness of a particular act as opposed to monetary sanctions. Hence, individuals are more effectively warned of the potential harm they might cause to themselves and to others and results in greater deterrence.

2.2.5 Standard of proof

Under tort, establishing preponderance of evidence is sufficient to prompt the court to award damages. On the other hand, criminal law requires a higher burden of proof. Criminal law theory as earlier discussed emphasize fairness and libertarian considerations for its existence in criminal law. One of the main reasons provided by literature regarding this main difference is to minimize the costs of making costly mistakes in awarding punitive sanctions (Kaplow and Shavell, 1994; Miceli, 1990 and Posner, 1992).

In explaining the economic rationale for a higher standard of proof, previous literature has relied on the assumption that society suffers more when an innocent becomes convicted of committing a criminal act than when a guilty person is set free. It is based on an assumption of society's preference for fairness. Easterbrook (1983) took a different approach by considering the whole criminal procedure, not just the standard of proof, and explained the economic rationale behind it. The high standard of proof minimizes the huge error costs society incurs when it wrongly impose punitive sanction on the innocent.

Closely related to our study on stigma which we will later develop is, Rubinfeld and Sappington (1987). They showed how the criminal court system could be a venue for individuals to properly signal their innocence or guilt, which is a characteristic that is unobservable to the court and the public. The innocence or guilt of the individual plays a role in the costs of bearing a criminal conviction and the benefits of spending

more on litigation expenditure. To minimize the total social costs of unnecessary litigation spending and other costs associated with determining fault, the court can select the social welfare enhancing level of burden of proof.

Recent studies have also explored how the standard of proof could affect deterrence. At first glance, a higher standard of proof may reduce the expected penalty faced by the individual and hence encourage more violations. However, when other factors are considered this will in fact lead to higher compliance. Ognedal (2005) related the higher standard of proof to marginal deterrence. Lowering the standard of proof for serious crimes, while raising the expected penalty may lead to the counterintuitive result of increased crimes. This is because from the point of view of the individual, the change in marginal penalty between less and more serious crimes provides incentives for the individual to commit the latter.

The standard of proof also has implications on the costs and benefits of gathering evidence. According to Hay and Spier (1997), in assigning the burden of proof, the courts actually divide the task of evidence production between the plaintiff and defendant. By properly choosing the burden of proof, the courts can help settle disputes in a manner that is more efficient. Froeb and Kobayashi (2001) on the other hand, explored the differences in evidence production implied by an adversarial and an inquisitorial regime. They found that the decentralized evidence gathering by two opposing parties reflected in adversarial regimes is just as efficient as the centralized nature in inquisitorial regimes. Yilankaya (2002) on the other hand, considers the role of the court in minimizing the expected total cost of expenditure litigation through the choice of the burden of proof. For a given amount of penalty, a higher standard of proof

is preferred as the costs of making false convictions increases. If the costs of making false acquittals is low, then a lower standard of proof may be preferable. The effect of a higher standard of proof on law enforcement agents is considered by Pyne (2005). According to him, a higher standard of burden raises the incentives of police officers to gather more evidence in order to strengthen the case against the individual. The associated increase in the marginal probability of conviction hence deters individuals from committing these offenses. Judges, on the other hand, are shown to be empirically sensitive to the penalty that they are about to mete out and, hence, raise the standard of proof when they think that the penalty is too harsh (Andreoni, 1991).

2.2.6 Control of prosecution

Civil law is also different from criminal law with respect to who brings the case to court. The former employs private agents while the latter rely on public prosecutors. Bowles, Faure and Garoupa (2008) have explored this topic and noted that the main reason for making an act criminally liable is the consideration of the role of the victims as well as the nature and magnitude of harm to determine the efficiency of using criminal law sanctions.

2.2.7 Discussion

There is a huge body of literature in law and economics devoted to the analysis of criminal law. The usual law and economics approach, as what is clear from the literature that is included in this survey, is to consider its different institutional properties and relate it with the specific problems of deterrence that each property tries to address. The weighing of the costs and benefits of each property of criminal law, or any rule for that matter, serves as a guide in determining which conducts should be appropriately governed by criminal law. Its scope therefore should be based on the implications for social welfare while other objectives play a secondary role.

There are, however, criticisms to the traditional law and economics approach. Such criticisms claim that the functionalist arguments based on optimal deterrence is inadequate to explain the existence of criminal law as a separate category (Coleman, 1988, Klerovick, 1985). According to them, law and economics had been successful in determining the justification behind the different properties of criminal law based on a cost-benefit analysis that is generally aimed at deterrence. However, the cited framework cannot explain its existence as a whole or as a different category in itself.

In common law countries, punitive sanctions can also be awarded under tort law and, as such, critics argue that if the main objective of criminal law is solely deterrence and the minimization of enforcement costs, and these objectives are adequately addressed by tort, then the former should play a diminishing role over time. Meanwhile, other critics do not see the need to maintain a rigid boundary between criminal and civil

law (Cheh, 1991). Mann (1992) and Koenig and Rustad (1998) advanced the expansion of a "middleground" or "crimtorts" that possess elements of the two in order to better respond to changing situations.

The justifications to preserve criminal law as a separate category, on the other hand, are tackled by Posner and Calabresi and Melamed. Posner argues that criminal law is needed in order to prevent the bypassing of the market. As voluntary transactions are channeled through the market and reflects also efficient exchanges, then society should protect this system of exchange from coercive transfers. Calabresi and Melamed's arguments runs similar to Posner. However, instead of the market itself that should be preserved, it is the society's chosen transaction structure that should be secured. Society chooses how to allocate rights and protect it with a property or a liability rule. This chosen transaction structure is then protected by criminal law with punishment and serves as a kicker to prevent individuals from converting property rules with liability rules.

According to Klerovick, while Calabresi and Melamed, and Posner's account are satisfying, it is incomplete. It fails to consider the non-economic considerations in criminal law. The moral dimension pervades the criminal law category to the extent that renders it hard to ignore its justification. According to criminal law scholars, criminal law serves an important purpose apart from deterrence, that is, its educative and socializing function. It is a reflection of society's values and, thus, covers acts that are considered to be morally reprehensible by society.

In Chapters five and six, these criticisms will be addressed in order to contribute to the attempt to furnish a more comprehensive law and economics account of criminal

law. We argue that much of the criticisms stem from the largely ignored role of social stigma, the informal sanction that is imposed by the rest of society on the individual who has committed a crime.

II Fines, Incarceration and Incapacitation

3 To fine, jail or incapacitate?

3.1 Introduction

Imprisonment is one of the harshest penalties under criminal law that is also unique to it. Since it denies the individual their personal freedom, its role has often been the subject of debate. This part discusses the age old debate as to what purposes does imprisonment serve from the point of view of law and economics and explore to what extent can it lead to an enhancement of social welfare.

Literature on law and economics widely accept that fines should be preferred over a jail sentence. Since individuals are only concerned about the expected punishment and due to incarceration's higher administrative costs, monetary sanctions are seen to achieve the same purpose of deterring an individual from committing a crime while imposing lower costs to society. This is illustrated by the huge sums spent on the maintenance of prisons and the penal system. Imprisonment should only be resorted to under certain cases such as when fines fail to adequately deter individuals from committing a crime or incapacitate repeat offenders.

The same attitude towards the minimal reliance on imprisonment is also echoed elsewhere in the field for reasons apart from achieving a particular level of deterrence. Imprisonment is considered as a severe and highly coercive form of punishment since

the individual is deprived of his or her freedom and forced to live in isolation from the community.

Aside from this, there is evidence that imprisonment increases the probability of recidivism (See Drago, et al, 2011; Di Tella and Schargodsky, 2009). Using a unique dataset arising from the passage of a Clemency Bill in Italy 2006, Drago, et al (2011) showed that the length of time served in prison is proportional to re-arrest rates. The explanation is rooted in the relationship between social interaction and crime. The incentives an individual faces can be amplified by group effects and interaction. Individuals in prison cultivate such interactions with their fellow inmates that continues outside of it. Thus, crime control policies should also consider the indirect effect of prison terms. Di Tella and Schargodsky, 2009 on the other hand, compared the effects of prison and an alternative form of incapacitating sanction, electronic monitoring in Argentina and found that the rate of recidivism for the latter is 40% lower.

As an alternative to incarceration, other forms of incapacitation are proposed, such as electronic monitoring and engagement in community service¹⁰. Others, meanwhile, emphasize the role of improving labor market conditions and enhancing the employment prospects of individuals instead of focusing on punishment as a way to deter crime (Gould, et al, 2002).

The law and economics theory and other frameworks, however, do not adequately explain the widespread use of imprisonment across the world. Instead of playing a diminishing role, some jurisdictions have increased their reliance on imprisonment as a way to control crime. In California, for instance, the scope of acts

punishable by imprisonment were expanded and the length of sentences for some acts were increased. Other measures like the "three-strikes law" and the implementation of minimum sentence requirements also serve to illustrate the prevalence of the said form of sanction. In some jurisdictions, moreover, jail terms have been imposed on corporate or white collar crime.

Europe however, has a relatively lower prison population than the US. Its reliance on prison can be attributed to the more widely use of alternative sanctions such as probation, community service, and the day fine system. However, even in some countries that have earlier adopted a policy to consciously reduce prison population, there was an observed reversal of preference such as in the Netherlands and Sweden (von Hofera, 2003). The cited reliance on imprisonment may be partly explained by politico-economic considerations on the part of law enforcement agencies. However, we wanted to explore the extent to which it is explained by the theory on deterrence.

3.1.1 Incarceration and partial incapacitation

Imprisonment, where the individual is deprived of his liberty and prerogative in allocating his or her time, can be treated as a case of full incapacitation. Other forms of incapacitating sanction, where the individual is deprived from pursuing a particular activity for a given period of time, has also gained acceptance. The penalty or demerit point system used in traffic regulation, for instance, deprives individuals of their driving

¹⁰See for instance, Sherman and Strang (2007) for other forms of restorative justice.

rights and privileges once a certain number of points that correspond to certain traffic violations had been reached. A number of empirical studies have shown that the said system led to a marked decrease in the incidence of road traffic accidents and, hence, deemed to have a significant deterrence effect. Due to its success in curbing accidents, this mechanism is starting to be replicated in other areas such as environmental regulation.

Another example of an incapacitating sanction is probation. The movement of the individual is usually restricted and supervised by a probationary officer. Probation is also sometimes accompanied with the requirement of spending time for community service. Electronic monitoring is another form of an incapacitating sanction (Di Tella and Schargodsky, 2009). Restrictions on the individual's movement are also imposed and his compliance is checked by an electronic device that he wears. The law enforcement authorities are notified electronically once he violates these restrictions.

In this chapter, the fines-versus-incarceration debate is revisited in order to contribute to a greater understanding of why societies still resort to incarceration and the creation of new forms of sanctions aimed at partial incapacitation. We first provide an overview of the classical law and economics theory to identify the conditions under which incarceration should be resorted to. The scope for its imposition is narrow.

We then discuss some of the weaknesses of law and economics' treatment of incarceration. We take the stand of Miceli that incapacitation is often treated from a normative point of view, while its deterrence aspect is usually taken for granted as it is often treated as being similar to a monetary sanction. The implicit assumption is that the costs of incapacitation to the individual is no different from a fine since the former can

be converted into monetary terms. He then proposed a general theory that takes into account a positive and a normative analysis of incapacitation. While agreeing with him in this respect, we took another route by taking into account the role of time and its relative scarcity in the positive analysis of incapacitation.

This chapter proceeds as follows. In the next section, we revisit the theoretical literature concerning the conditions under which incarceration, or full incapacitation, are used in lieu of a fine. Then, the role of individual time constraint is considered and laid out to see the distinction between a fine and incarceration from the point of view of individuals. Then we provided some empirical data related to our study.

3.2 The Theory: Fines versus Incarceration

There are three main reasons cited in literature for the need to impose non-monetary sanctions and not just fines. The first concerns deterrence, the second is the need for incapacitation, and the third concerns justice or fairness and equity considerations.

3.2.1 Deterrence

In his seminal article, Becker (1968) proposed that individuals only consider the expected punishment when considering whether or not to commit a crime. Since

increasing the probability of conviction implies higher expenditures on law enforcement, society could then achieve the same level of deterrence with the least cost by increasing the level of fines. Society could also choose the type of sanction -- between fines and imprisonment. However, since the former requires huge administrative costs, then monetary sanctions are preferable.

The conclusion that the optimal punishment should consist of maximal fines and low probability of conviction, however, rests on the assumption that individuals are risk neutral, face no wealth constraints, and homogenous. When one of these conditions does not hold, then there is a case for the imposition of imprisonment.

3.2.1.1 Differences in individual wealth

When an individual is wealth constrained, as what happens when the harm that they cause is greater than their wealth, there is a need to supplement monetary sanctions with a prison term, according to Becker. The main rationale is that when monetary fines alone are used, then the poor would only be able to pay the fine equivalent to their wealth. This provides them with incentives to commit the most serious criminal act that is correlated with the highest individual benefit. Thus, they could only be adequately deterred by combining fines with a prison term.

Polinsky and Shavell (1991) makes Becker's second proposition more explicit and takes on risk neutral individuals with different wealth levels. While maintaining that societies should still rely more on fines than imprisonment, they derived different

optimal punishment depending on the wealth of the individual. For the poor, the optimal fine is equivalent to their wealth. On the other hand, the rich should not be imposed with maximal fines since this may lead to overdeterrence. Whether the poor should be imposed with a longer sentence however is not clear.

The policy implication of Becker and Polinsky and Shavell leads to discriminatory punishment. The rich will be charged with higher fines alone while the poor will be charged with a fine equivalent to their wealth with corresponding imprisonment. However, this does not seem appealing on equity and fairness grounds based on the almost universal legal tenet that all individuals should be treated equally before the law¹¹. Aside from this, critics claim that in almost all jurisdictions, uniform fines are imposed.

In Nordic countries and Germany, discriminatory sanction exists under the day fine system. An individual pays a fine proportional to his daily income and is imposed for some criminal violations and minor offenses. The main consideration for its imposition is that setting fines proportional to income is fair and just. However, we will also argue in the preceding chapter that it also serves the goal of efficiency when we consider the role of time as a scarce resource. The day fine system has also been cited as one of the reasons why these countries have lower prison populations and is being tried in some states in the US as part of criminal justice reform.

Lott (1987), however, claims that even if we see uniform expected punishment, this does not imply that the theory is wrong. What actually happens in practice is that

¹¹See for instance Farmer and Terrell (2001) for an exploration of the tradeoff between pursuing the goals of deterrence and justice when there are two groups with different actual and perceived crime rates.

higher income individuals, who face a higher opportunity cost from serving a prison term are actually paying more to acquire good legal defense in order to avoid imprisonment. In effect, the rich are able to lower the probability of conviction by choosing and paying the same monetary fine plus the additional cost of avoiding a jail term. Thus, the facts actually conform with the theory and moves to put restrictions on the defense expenditure of the rich to avoid conviction is wrong.

In response, Garoupa and Gravelle (2000) showed that allowing the rich to choose their level of expenditure spending does not lead to full efficiency as what Lott claims. He ignored the fact that there will still be a group of individuals who will be underdeterred, those belonging to the low income group. Further, for the efficiency conditions to hold, the high income group will still have to face higher expected sanctions. The welfare implications of setting restrictions on defense expenditure is therefore ambiguous, especially when the benefit to the crime varies. It requires comparing the changes in the behavior of the underdeterred poor and the overdeterred rich.

3.2.1.2 Demand elasticity of crime and nonlinear cost of imposing the punishment

The informational requirements needed to impose discriminatory sanctions are tackled in detail by Friedman (1981). Whether or not the poor should be imprisoned and whether or not the rich should pay higher fines should take into consideration the

individual demand for the criminal act and the cost of imposing the sanction. The crucial assumptions rest on the nonlinearity of the cost of imposing punishment and the dependence of the value of the crime on the wealth of the individual.

There are situations where the value of the criminal act depends on the wealth of the individual. If this were the case, efficiency requires that the punishment should also vary according to the wealth of the individual. Thus, the rich who enjoy a higher private benefit from the crime should be charged with higher fines. On the other hand, the cost of imposing the expected punishment, Friedman argues, increases at an escalating rate. For the same level of act, deterring a rich person cost more than deterring the poor. Thus, this implies that imposing a higher expected punishment should weigh the demand elasticity for crime and the increasing marginal cost of imposing the expected punishment.

To the extent that demand elasticities are different for various groups of individuals, then there are efficiency gains from discriminatory punishment. The rich then should be charged with higher expected punishment. However, this is offset by the increasing costs of imposing the punishment and, according to Friedman, this implies that law enforcement should focus on the poor.

The view on discriminatory punishment also runs counter to the other widely accepted principle in law and economics that the optimal punishment should be based on the social harm alone (Posner, 1977). If some individuals commit the act, then their private benefit may be higher than the social harm. If there is a way to compensate those harmed, then there is no reason why society should prohibit it. This is often referred to in the literature as efficient crime. Setting the punishment equal to the

individual benefit would also achieve the same level of deterrence.

In reality, however, implicit discriminatory pricing takes place in the legal system with the same monetary fines and prison sentence regardless of individual characteristics. The latter implies equal dollar punishment while the former implies higher dollar punishment for those with higher foregone income. According to Friedman, if the benefit depends on wealth, then the rich should be imprisoned. However, for the same level of criminal act, society faces a higher cost from imposing the said sanction on the rich. Therefore, it would be more efficient to just ask the rich to pay higher dollar fines. On the other hand, the wealth constrained poor should be imprisoned.

3.2.1.3 Marginal utility of money and time

The other implicit assumption behind Becker's conclusion is that individuals have the same marginal utility of money. When individuals have different wealth, those with a lower initial endowment have a higher marginal utility of money as compared to those who have a higher initial wealth. Baum and Kamas (1995) show that when this is the case, the policy implications of imposing a uniform sanction would be inefficient and at the same time inequitable. They argue that such a situation is quite paradoxical for the justice system that claims to be fair and that strives to maximize welfare.

Uniform punishment implies imposing the same monetary fine and prison sentence regardless of income and valuation of time. With a uniform monetary fine, the

poor suffer from a greater marginal disutility compared to the rich because of the difference in their initial wealth. Under such a scheme, the rich are relatively less deterred than the poor. On the other hand, with uniform prison sentence, those with higher income are punished more since the opportunity cost with respect to their foregone future income is higher than the low-income individual. This implies lower prison sentences for the rich.

As an alternative, Baum and Kamas propose the use of time as the numeraire, as the standard unit of measurement of the sanction instead of money when finding the optimal punishment that would maximize social welfare. Money is often used merely for reasons of convenience. It is not necessarily ideal in a situation where there are disparities in wealth. In this respect, time has a particular advantage since individuals are endowed with the same amount of time per day and, based on their income and preferences, choose whether or not to commit a particular act.

The use of money as a numeraire also led Lott to conclude that the willingness of the rich to pay for a higher legal defense reflects their marginal disutility for prison. However, we think that this may in fact be due to credit constraints on the part of the poor. To cite, if the capital market is perfect and individuals could borrow then the poor would also avail of the services of good lawyers.

The policy implication is that a time-based and a money-based approach to punishment could be adopted simultaneously. A time-based system could set the fine according to the individual's daily income, implying higher fines for the rich. Such a system is already in place in Sweden, Finland, and Germany. This has also been credited as one of the reasons why the prison population in these countries are lower

than in the US. On the other hand, the determination of the length of jail sentences could be based on the individual's foregone future income and, hence, implies that the rich spend less time in the jail than the poor.

Bar Niv and Safra (2002) also argues for fines based on wealth because of individual differences in the marginal utility of money. If society does not consider this, then it results in a biased and unjust distribution of criminal acts where the rich are underdeterred. According to Bar Niv and Safra, there are actually two penalty regimes in place -- fixed and discretionary punishment. In common law countries, the latter takes the form of regulated minimum or maximum fines subject to the discretion of the courts. Low and medium offenses, on the other hand, are covered by fixed fines. In some civil law countries, as already mentioned before, day fines exist based on both the wealth of the individual and the severity of the offense.

3.2.1.4 Asymmetric information

The previous discussions were based on the assumption of either perfect information or imperfect information in which all parties share the same information set, with respect to both the known and the unknown variables. The other reason given in the literature for the existence of non-monetary sanctions such as imprisonment concerns the unobservability of certain factors like wealth and income from the perspective of the law enforcer.

If individuals have different levels of income and wealth, then different

combinations of the level of fine and prison sentence should be imposed based on the wealth of the individual. However, when wealth is unobservable, then society may choose to rely on the uniform combination of fines and imprisonment as a next best alternative.

Chu and Jiang (1993) considered risk averse individuals, who could choose the severity of the crime, with different wealth endowment. If individuals are enabled to choose the severity, then imposing maximal fines will efficiently deter the rich but will encourage the poor to commit the most severe crime. Because of their wealth constraint, there is a serious marginal deterrence problem on the part of the poor. In this case, the optimal fine should then be set as equivalent to the wealth of the poor. However, this may be low enough for the rich and will result in underdeterrence for this particular group. The next best option is to combine the fine with imprisonment in order to provide sufficient incentives for the poor who are said to be judgment proof. At the same time, it addresses the underdeterrence problem for the rich as their opportunity cost of spending in jail is higher.

With asymmetric information, the social planner would choose the optimal fine, supplemented with imprisonment, that would lead to the best overall level of deterrence. The optimal fine would not be equivalent to the maximal fine for reasons that concern the marginal deterrence of the poor but should not also be too trivial for the rich.

Polinsky (2006) considered the role of positive enforcement cost in such a situation. When wealth is observable, then fines alone should be used. However, when wealth is unobservable, there are two regimes that are optimal. The first relies exclusively on fines where the fine is set to be equivalent to the wealth of the poorest

group. The other is a choice between adopting a high fine or a low fine with imprisonment. In all cases, there is a level of underdeterrence and social welfare is lower.

According to Levitt (1997), imprisonment serves as an incentive compatibility constraint to adequately deter individuals when wealth is unobservable. There are three reasons why without imprisonment, incentives may be incompatible. When apprehended, the individual can lie about his real level of wealth in order to evade paying the full amount of the fine. Even if the law enforcer has information on the wealth, there may be no direct way to compel the individual to pay the fine. Third, there may be difficulties in collecting the fine. Thus, given that the apprehended individual can choose to behave in any of the cited manner, imprisonment is needed on top of the monetary fine. The social planner is in effect, asking the individual to pay the fine or face imprisonment.

3.2.2 Incapacitation

The seminal article on incapacitation is written by Shavell (1987) citing that the main objective of imprisonment is to prevent criminals from committing more harm in the future. However, since the cost of maintaining the penal system is high, it would only be optimal to imprison individuals when their dangerousness or the harm that they would potentially inflict exceeds the per period cost of keeping them in prison. Shavell also considered the case when the dangerousness of the individual declines with age

and, making the benefit of longer prison sentences low.

If the goal of society is to incapacitate, then the optimal sanction is independent of the probability of apprehension and the sanction is discontinuous at the threshold level which depends on the per period cost of punishment. On the other hand, when the goal is to deter, the sanction is a continuous function of the harm and depends on the probability of apprehension.

Having proposed a normative approach to incapacitation, Shavell does not show how imprisonment affects the individual decision to commit a crime. What his study reveals is the conditions under which imprisonment is deemed optimal given that this particular punishment is costly.

As Miceli (2009) points out, the law and economics literature has approached criminal punishment from two different perspectives. The criminal deterrence literature involves positive analysis and hence, tries to understand individual decision-making and how they respond to rewards and punishment. The incapacitation literature, on the other hand, is based on a normative analysis and addresses the question on the conditions where imprisonment would be socially optimal given positive enforcement costs. What is lacking is a positive theory that incorporates the threat of incapacitation into the decision making of individuals.

Our view is that the main reason why most of the literature on imprisonment and other non-monetary sanctions that are incapacitating in nature -- such as suspension of a license, restrictions on movement, and occupation -- are confined to a normative analysis is that they are assumed to be made comparable in their monetary terms. Thus,

as long as the form of punishment can be set according to their monetary equivalent, then the form of punishment becomes immaterial (See Becker, 1968). They become perfect substitutes with respect to the generation of unit level of deterrence. The cost of imprisonment to an individual, for instance, is usually treated as the discounted sum of foregone future income and the value to him of freedom and the future loss in consumption (See Polinsky and Shavell, 1997).

3.2.3 Fairness and equity

Another reason cited in the literature -- mostly outside the law and economics literature -- for the existence of non-monetary sanctions concerns issues of fairness, equity and distributive justice. This has already been discussed in detail in Chapter 2.

3.2.4 Deterrence and incapacitation

To address the dichotomous approach at incapacitation, Miceli provided a theory that merges both its positive and normative aspects. According to Miceli, one of the weaknesses of the deterrence model is that it fails to take into account that there are some individuals who are undeterrable. They do not respond properly to sanctions and, hence, the only way to prevent them from causing harm is to deprive them of the opportunity to do so by keeping them in prison. These individuals are also likely to be

repeat offenders. The challenge, therefore, is to identify these types of individuals. While incapacitation addresses these issues, it has ignored the behavior of individuals when incarceration becomes an additional punishment.

Miceli adopted a dynamic model that incorporates intertemporal decision-making. Individuals are heterogeneous with respect to their benefit and face recurrent criminal opportunities throughout their lifetime. They then maximize intertemporal utility based on the present value of committing crime given a particular apprehension technology, amount of the the fine, and length of imprisonment. Imprisonment deters some potential offenders from committing a crime again and prevents first time offenders from committing further inefficient crime.

According to Miceli, increasing fines could not serve the purpose of incapacitation because it merely prices the individual's behavior. If individuals have infinite wealth then they could not be deterred. The only way to deter them is to deny them the privileges or rights for committing a certain act. On the other hand, incarceration is socially costly and, hence, it is crucial to screen undeterrable criminals from those who are responsive to sanctions and reserve it only for the former.

3.2.5 Partial incapacitation: the penalty point system

As discussed earlier, there exists other forms of nonmonetary sanctions aimed at incapacitating an individual without resorting to incarceration or full incapacitation. The individual is only prohibited from devoting his or her time to pursue a particular activity

that gives rise to the externalized harm. The basic penalty point system is mostly applied to regulate driving behavior and recently in environmental regulation (See Scheule, et al, 2004) . It works by allocating to each individual a maximum number of points for a given period. For each violation, a point is added¹² based on the seriousness of the violation and when it is exhausted, the driving license is revoked for a given period of time. The license could be redeemed after enrolling in a driver refresher program and passing an examination. The penalty point system or demerit point system is never used alone but is always used to complement fines.

Despite its widespread use and its relative success as suggested by empirical evidence, its deterrence effect remain largely unexplored in the law and economics literature. One reason is that the penalty point system emerged from the need to curtail accidents and had remained outside the purview of economists and lawyers.

Bourgeon and Picard (2007) shows how the penalty point system acts as a mechanism both for deterrence and incapacitation. They assumed two types of drivers distinguished by their cost of exerting effort to drive carefully. Normal drivers have a low cost of exerting effort to drive carefully while reckless drivers have extremely high cost. Fines provide incentives for normal drivers to behave optimally. On the other hand, reckless drivers are insensitive to fines and cause greater harm. To the extent that the deductible acts in the point system are reflective of the recklessness of the individual, the point system effectively removes them from the street and hence reduces the incidence of accidents.

In this context, the point system acts as a screening device, incapacitating or

¹²Depending on the jurisdiction, the points may be added or deducted from the initial allocation of points.

removing from the streets the dangerous drivers who appear undeterred by monetary sanctions. At the same time, from the point of view of deterrence, since the sanction is denominated in time, an additional constraint binds individuals and they calculate the costs and benefits of the activity with both monetary and time constraint. Those individuals who cannot be deterred by monetary sanctions alone may be constrained by the possibility of their driver's license being revoked for a particular period of time.

Basili and Nicita (2005) started their analysis with the empirical observation that there is a correlation between the accumulation of demerit points and accidents. They consider as striking the empirical evidence which reveals that the rate of decrease of accidents depends on the number of points a person currently has, pointing to a nonlinear relationship between traffic rule compliance and the points they possess.

They treat driving points as an input to the consumption of other goods, entering individual utility like income does. They identified three types of individuals depending on their respective valuation of points: those who are completely deterred, those who are partially deterred, and those who are never deterred.

The rate of transformation of points to consumption opportunities depends on the type of individual and the relative number of points accumulated for a given period. For partially deterred agents, the cost of the non-monetary sanction is always greater than the benefit derived from consuming all the points. However, since they will only incur suspension once they have exhausted their points, complete deterrence will only set in once they achieve a particular threshold of points. On the other hand, the introduction of the point system does not affect the behavior of the other two types.

3.3 The Empirical Evidence: Fines, Incarceration, Incapacitation

There had been a lot of studies that had been devoted to empirically test the theory of criminal punishment. Recently, Levitt and Miles (2007) provided an excellent survey of what had been done so far. Most studies show a strong correlation between higher expected punishment and the lower incidence of crime¹³. While this may support the deterrence effect of criminal punishment, there are many simultaneity issues involved with respect to other variables that affect the number of crime as well.

3.3.1 Day Fines and Incarceration

In 1991, the US Bureau of Justice Assistance introduced the day fine system in Maricopa, Arizona as an alternative to incarceration to address the problem of overcrowded prisons. Fines were based on wealth as well as the severity of the act. Turner and Petersilia (1996) found that the day fine worked as well in deterring individuals in the four jurisdictions where the system was introduced. They concluded that discriminatory fines are viable alternatives to a jail term¹⁴.

¹³See for instance Witte (1980) and Myers (1985). While previous studies used aggregate data, Witte used individual data and found that both the certainty and severity of punishment deter criminal activity. Myers on the other hand found that increasing certainty has a strong deterrence effect while the severity show weak effects which is consistent with the theoretical result when individuals are risk averse.

¹⁴See also Zedlweski (2010) and Sherman, et al (1998).

3.3.2 Deterrence and incapacitation effect

One of the challenges of empirical estimation that is of interest to the purpose of our research is the determination of the extent to which the reduction in crime is caused by a reduction in the number of individuals who had been deterred. The observed decline in crime could also be due to the incapacitation of criminals -- if there are less of them roaming the streets then there would be less offenses. To achieve this, Kessler and Levitt (1998) took advantage of a natural experiment in California where sentence enhancements for a select group of crime were introduced through a state referendum called Proposition 8. Sentence enhancements increased the length of jail terms for a select group of crimes and increased the jail sentence for third time convictions. The deterrence effect of a longer prison sentence could then be observed immediately after its implementation while the incapacitation effect would be observed with a lag. They found that after a year, the occurrence of crimes that fell under the scope of Proposition 8 dropped by more than 10 percent as compared to other crimes, implying a large deterrent effect. After three years, it further dropped to 20 percent¹⁵.

While Kessler and Levitt have succeeded in illustrating the deterrence effect of longer prison sentence, it would be interesting to find out if the same deterrence effect could be achieved with the use of commensurate monetary fines alone. If this were the case, then from the individual point of view, monetary fines and jail sentence are perfect

¹⁵This result however is questioned by Webster, et al. (2006).

substitutes with respect to the type of sanction.

3.3.3 Partial incapacitation: the driving penalty point system

The driving penalty point system, on the other hand, consists of both a monetary fine and the suspension of driving license that can be considered a form of incapacitation. Unlike imprisonment, it does not involve the total deprivation of all acts. The person is only constrained from performing a particular act. Before it was adopted in some countries, monetary fines were already in existence. Thus, the introduction of the penalty point system could distinguish the deterrence effect of a monetary sanction from combined fines and non-monetary sanction.

The driving penalty point system is a scheme where individuals are allocated a given number of points for a given period. Every time he commits a traffic violation, he earns (or loses) points corresponding to its severity aside from paying a fine. When the points reach the maximum (or minimum), the driving license is immediately suspended for a certain period.

Empirical studies conducted in Ireland, Italy, and Spain have shown a strong correlation between the penalty point legislation and the decrease in the incidence of accidents. In Ireland, Lenehan, et al (2005) showed that fourteen months after the system took effect in 2002, the number of traffic accident-related fatalities decreased by 10 percent and the number of non-fatal injuries decreased by 20 percent.

The point system was introduced in Italy in 2003. Using data from the Veneto

region, adjusting for seasonal and historical time trend of vehicular accidents (that interestingly peaks during the summer and falls in February), Zambon, et al (2007) observed that road accident fatalities dropped by 18 percent and a 20 percent reduction in non-fatal injuries was seen after an eighteen month period. Ireland estimates, meanwhile, show roughly the same results. Farchi, et al (2007) used data from the Lazio region and used a Poisson model to estimate the effect. They found an immediate decrease in road traffic injuries albeit lower than the previous estimates. Moreover, the occurrence of accidents further dropped over time. After the point system was introduced in Spain on July 2006, the reduction in the number of accidents was also observed (See Roca and Tortosa, 2008).

These empirical studies on the driving point system, however, uses hospital records with regards to the number of traffic-related fatalities and injuries. This is because the point system was primarily devised by health and safety regulation authorities as a way to lower the number of vehicular fatalities and injuries which has reached alarming levels in Europe and the rest of the world. To the extent that they provide good proxy variables for individual compliance of traffic rules, then we could make inferences about the deterrence effect of the combined monetary and non-monetary sanction that exist in the penalty point system.

Since monetary fines were already in place prior to the adoption of the penalty point system, the immediate decrease in the occurrence of vehicular accidents could be considered an indicator of the deterrence effect of non-monetary sanctions on individuals. This intuition is akin to the Kessler and Levitt model. To the extent that monetary fines are roughly the same before and after the adoption of the point system,

then this would be true. However, this requires a more careful econometric analysis.

The incapacitation effect would also contribute to the observed decline in the number of accidents. Chen (1995) showed that records of traffic convictions figure strongly as an important predictor of future involvement in accidents among individuals. Thus, the incapacitation of reckless drivers would also lead to a decrease in the number of accidents. However, the said effect would only be observed after a certain period of time.

The evidence on sentence enhancements and the driving penalty point system point to the deterrence effect of imprisonment and other non-monetary sanctions that aim to incapacitate an individual. The data also suggests that their particular ex ante effect may be different from how monetary sanctions work. However, the law and economics literature, as pointed out by Miceli, has regarded incapacitation mostly from a normative point of view and has overlooked the positive side. As such, it lacks a description of how the threat of full or partial incapacitation affects individual decision-making.

3.4 Conclusion

Incarceration is a very costly punishment to administer. However, societies still rely on this particular sanction to control individual behavior. In this chapter, we discussed the different conditions, as illustrated in the literature, when it is optimal to use this type of punishment as opposed to a fine from the perspective of law and

economics.

To sum up, the optimality of incarceration over fines as it is discussed in the literature appear to be dependent on the heterogeneity of individuals. While the harm caused by the act might be the same, individuals might derive different benefits from it as seen in cases where they have different levels of wealth, risk aversion, or preferences. In this case, the sanction should not be necessarily based on the public harm alone but should also consider the individual's marginal benefits. This suggests the viability of imposing discriminatory sanctions which depend on individual characteristics such as wealth. Determining the wealth income group that will be subjected to fines or imprisonment depends to a large extent on the assumptions made with respect to the benefits and costs of imposing the punishment.

Another issue that deserves reiteration is the observation that the literature on incapacitation is often conceived from a normative perspective, which led Miceli to provide a more general theory. The implicit assumption is that the cost of incapacitation to the individual is the same as that of a fine since it can be converted easily to monetary terms. However, according to Baum and Kamas, this neglects the role of the individual time constraint and its relative scarcity. In the next chapter, we will address these issues and incorporate it explicitly in the individual decision-making process.

4 The role of the time constraint

4.1 Introduction

As discussed in the previous chapter, most of the previous studies concerning the fines-versus-incarceration debate start from the normative consideration of the role of positive enforcement costs in finding the socially optimal level of sanction. Implicit in the assumption is that at the level of individual decision making, imprisonment can be denominated into a monetary sanction in the form of foregone wage. Hence, a fine and a prison term can be treated almost as perfect substitutes in generating the total expected sanction from the point of view of the individual.

However, foregone wage is not the only binding constraint at work since a jail term also involves time which is a scarce commodity. Since a prison term is denominated in time, its cost as well as its relative scarcity should also be considered.

This chapter attempts to explicitly incorporate the role of the time constraint in individual decision-making starting with the assumption that the crucial difference between a fine and a prison term is that the former is denominated in time, which is a fixed endowment. As such, individuals face two forms of constraint -- a good and a time constraint. When the sanction for a particular activity is a fine, then the time

constraint is not binding. However, with a jail term, both become binding. Time, however, is an endowment that is fixed for all individuals regardless of wealth and wage earnings.

The law enforcement agency actually places restrictions on how the individual allocates his time with an incapacitating sanction. Although the role of time has already been considered in the literature, its implications have not yet been fully explored, especially in cases where individuals have varying levels of wealth and income. We argue that this distinction between a fine and incapacitation becomes crucial when wealth and income heterogeneity exists in the society. Since time is a fixed constraint, a sanction that is denominated as such will affect individuals with different wealth and income differently from a fine. Thus, this, could potentially address the bias associated with varying initial wealth endowment .

Jumping ahead of the argument laid out in this chapter, we find that aside from the judgment proof poor, there is another case where incapacitation may be preferable over a fine. To cite, individuals lying on the other extreme of the income and wealth spectrum may not be adequately deterred by a uniform fine. If the law enforcement agency is not allowed to impose discriminatory sanctions -- which is usually the case under the pretext of all individuals being equal under the law -- or when wage and income is unobservable, then incapacitation may be considered an alternative. However, it should be emphasized that incapacitation does not automatically imply incarceration. It should be underscored that the channel of deterrence lies in the nature of time as a fixed endowment and the ability of law enforcement agencies to constrain the individual's use of it to pursue all activities, as in the case of a jail term, or merely limit

its use for a particular activity as in the case of the revocation of driver's license.

Our results show that when the demand for the prohibited activity behaves like a normal good then, *caeteris paribus*, an increase in wealth leads to an increase in the level of such activity. On the other hand, since time is a fixed endowment, introducing incarceration leads to higher deterrence among high wealth individuals. This is contrary to previous studies that show that incarceration should be reserved for the wealth constrained individual. According to this argument, low wealth individuals cannot be adequately deterred by imposing fines alone especially when the utility they get from the prohibited act is higher. On the other hand, we explore the extreme case where individuals have high wealth and we find that the opposite case is also true -- that is, as wealth increases, the level of activity increases as long as the activity behaves like a normal good. The introduction of the time constraint then serves to correct the initial bias in wealth endowment since time is a fixed endowment that is the same for all individuals. Individuals use time to earn income and when a sanction is introduced that is denominated in it, the total endowment that is sanctionable changes and is reflected as a higher opportunity for the high wealth individuals.

The choice of whether to sanction an activity with a fine or imprisonment has been explored in the previous chapter. To reiterate, when fines alone are used, higher wealth individuals should be charged higher since the level of underdeterrence can be reduced at a less costly way. The prison length for the high wealth group may also be shorter or longer. On the one hand, given a particular length of incarceration, individuals with higher wealth are deterred more. When individuals can choose the severity of the crime and are heterogenous with respect to wealth, Chiu and Jiang

(1993) said imprisonment is needed to address the issue of marginal deterrence. Likewise, the said sanction addresses the issue of underdeterrence on the part of the rich. Friedman (1981), on the other hand, pointed out that the nonlinearity in the cost of imposing the punishment, the value of crime to the individual, and the demand elasticity, are related to individual wealth. Meanwhile, Polinsky and Shavell (1999) looked at the optimal length of the prison term with respect to the individual and society's discount rate.

More recently, Polinsky (2005) addressed the issue of wealth heterogeneity and showed that when wealth is observable, fines alone should be used. When it is unobservable, then the next best option is a regime of very high fine alone or low fine coupled with imprisonment. This stems from the fact that a jail term may also act as an incentive compatibility constraint when individuals have private information about their wealth (Levitt, 1997).

4.2 The role of the individual time constraint

The crucial assumption that we make is that a prison term cannot be readily converted into a monetary fine without considering the relative scarcity of time. Since the publication of the seminal articles of Becker (1965) and Owen (1971), it has been widely recognized that ignoring the role of the scarcity of time generally results in a biased demand for commodities (See also Gronau, 1977). The theoretical prediction of demand may be understated or overstated. This is best illustrated by the individual's

decision to supply labor. If the time constraint is not taken into account, then theory predicts that an increase in the wage will always lead to an increase in the individual's labor supply decision. However, this is not supported by empirical evidence. After enjoying a given level of wage, the willingness of individuals to work decreases since spending time in leisure becomes more valuable.

We argue that the same mechanism is at work when considering the impact of a prison term on an individual. Both money and time should figure in the utility of the individual in the generation of the individual's utility. The individual is treated not merely as a consumer but as a production unit who can devote his time to produce income.

Most of the literature consider the cost of imprisonment on the individual to be a fixed exogenous value that is determined outside the model. However, when the relative scarcity of time is considered, the determination of total income becomes endogenized.

While the role of the time constraint in imprisonment has been recognized¹⁶, to our knowledge, there are only a few studies that conceived the said constraint explicitly in the context of the choice between imposing a fine and imprisonment. Our approach is similar to Ehrlich (1975) and Block and Heineke (1975) who took into account the role of the time constraint in the individual decision to commit an illegitimate activity.

This is also similar to the study of Baum and Kamas (1995) which proposed the use of time as a numeraire instead of money in deducing the optimal punishment that would maximize social welfare. They argue that when individuals have different

¹⁶ See for instance Becker (1968), p.179.

wealth, the marginal utility for money would differ among individuals. On the other hand, time has a particular advantage since individuals are endowed with the same amount of time per day. As such, based on their income and preferences, individuals will choose whether or not to commit a particular act.

4.3 The Model

Individuals derive utility from a bundle of consumption goods, c as well as an activity we denote as x . We assume that preference is represented by a Constant Elasticity of Substitution (CES) since this allows fewer restrictions on the elasticity of substitution. Aside from exhibiting the other usual properties of a utility function, there are many advantages to using the CES (Stern, 1976). First, unlike the Cobb Douglas function, it does not restrict the elasticity of substitution to be equal to one and the input share in the utility function between x and c is set to be constant at all levels. This might pose some problems when the activity x is sanctioned by incarceration since there will now be a maximum level of x achievable as determined by the time constraint. Second, CES allows greater flexibility in analyzing cases at low levels of wealth or even negative levels of wealth. This is crucial in studying the optimal behavior of low wealth individuals and exploring behavior around the corner solution¹⁷.

We assume that individuals derive utility from consuming a basket of consumption goods, c and from performing a level of activity x . The utility of the

individual can be expressed as,

$$U = f(c, x) = [(1 - \alpha)c^{-\mu} + \alpha x^{-\mu}]^{-\frac{1}{\mu}} \quad (4.1)$$

where $U_c > 0$, $U_x > 0$ and $U_{cc} < 0$ and $U_{xx} < 0$. We also assume that consumption is a normal good and hence $\frac{\partial c}{\partial w}, \frac{\partial c}{\partial I} \geq 0$ where w and I denote wage and wealth respectively. On the other hand, we do not place any restriction on x and hence, $\frac{\partial x}{\partial w}, \frac{\partial x}{\partial I} \leq 0$. In the CES, the parameter α is interpreted as the input share in the utility function and is usually restricted to $\alpha + (1 - \alpha) = 1$. On the other hand, μ is substitution parameter between c and x and is restricted to $-1 \leq \mu \leq 0$.¹⁸

We assume that the activity x imposes externalities. To maximize social welfare, the social planner can either impose a fine, F or a nonmonetary sanction in the form of incarceration for a given length of time t .

In maximizing utility from the consumption of these two goods, the individual faces two forms of constraint, the goods and the time constraint. The goods constraint concerns the price of the consumption good c , the per unit fine F on the activity x and the monetary income, which is comprised of labor income and wealth, represented by wL and I , where w represents the wage per time and L represents the time devoted to labor.

$$pc + Fx = wL + I \quad (4.2)$$

¹⁷Unlike the Cobb Douglas that becomes problematic as wealth approaches zero ($I \rightarrow 0$).

To earn the labor income, the individual has to work L hours of time. We assume for simplicity that the individual spends his total time working and when he conducts activity x , he is incarcerated for a length of time t proportionate to the level of activity. Thus, total time can either be spent working or being imprisoned,

$$T = L + tx$$

We normalize the total time to 1 and we have,

$$1 = L + tx \tag{4.3}$$

The individual decision making problem therefore involves maximizing utility subject to the price of the consumption bundle, the monetary and nonmonetary sanction for x , and the time constraint. We first consider the case of a fine only and incarceration only regime. Then we consider the social welfare maximization problem.

In order not to complicate the analysis, we assume that the commission of x is observable and hence we ignore the probability of apprehension and conviction.

4.3.1 Monetary Fines

The individual decision problem is to maximize utility $U(c, x) = [(1 - \alpha)c^{-\mu} + \alpha x^{-\mu}]^{-\frac{1}{\mu}}$ such that $pc + Fx = w + I$ since $L = 1$. The Lagrange is

$$L = [(1 - a)c^{-\mu} + ax^{-\mu}]^{-\frac{1}{\mu}} + \lambda(w + I - pc - Fx) \tag{4.4}$$

¹⁸In the case of the Cobb Douglas this is equivalent to 1.

and we get the following first order conditions (FOC's)

$$\frac{\partial L}{\partial c} = -(1/\mu)[(1-a)c^{-\mu} + ax^{-\mu}]^{-(1/\mu)-1}[-\mu(1-a)c^{-\mu-1}] - \lambda p = 0 \quad (4.5)$$

$$\frac{\partial L}{\partial x} = -(1/\mu)[(1-a)c^{-\mu} + ax^{-\mu}]^{-(1/\mu)-1}[-\mu ax^{-\mu-1}] - \lambda F = 0$$

$$\frac{\partial L}{\partial \lambda} = w + I - pc - Fx = 0$$

$$x_F^* = \left(\frac{\alpha}{F}\right)^r \frac{w + I}{p^{1-r}(1-a)^r + F^{1-r}\alpha^r} \quad (4.6)$$

$$c_F^* = \left(\frac{1-\alpha}{p}\right)^r \frac{w + I}{p^{1-r}(1-\alpha)^r + F^{1-r}\alpha^r} \quad (4.7)$$

where $r = \frac{1}{\mu+1}$ and $1-r = \frac{\mu}{\mu+1}$.

Note that the optimal levels of x and c now depends on the fine, the price of the consumption good, the elasticity of substitution and the relative share in the utility¹⁹.

Suppose that individuals are heterogenous with respect to wealth, then as wealth increases, the consumption and the level of x increases too. Thus, the optimal levels of c and x chosen for different levels of wealth is shown by the income expansion path (See Fig.4.1).

¹⁹In the case of the Cobb Douglas function, x just depends on the fine and not on the price of the consumption good. The elasticity of substitution between the illegal good or activity x and the consumption good c is also assumed to be equivalent to 1 which may be restrictive especially when x is sanctioned by incarceration.

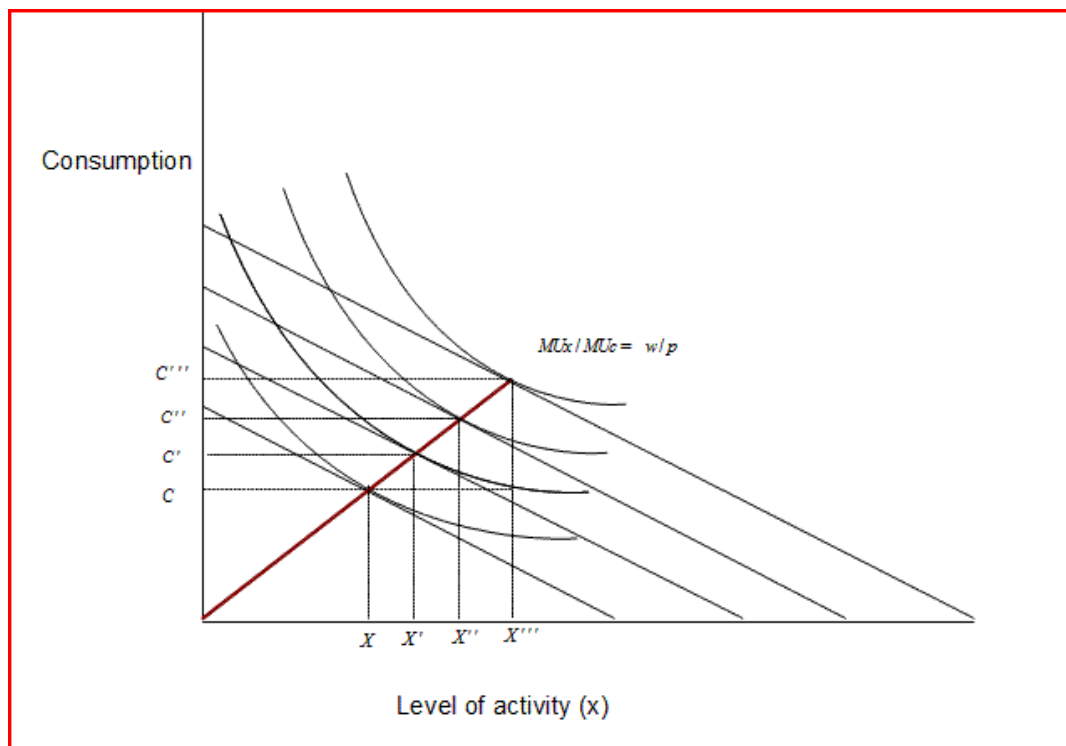


Figure 4.1: Optimal level of x with a fine and varying income.

4.3.2 Incarceration

When incarceration alone is used, then the time constraint becomes binding and the individual maximizes his utility subject to a goods constraint $pc = wL + I$ and a time constraint $1 = L + tx$. Combining both we have

$$w(1-tx)+I=pc \quad (4.8)$$

$$w+I=pc+wtx.$$

The Lagrange is

$$L = [(1-a)c^{-\mu} + ax^{-\mu}]^{-(1/\mu)} + \lambda(w + I - pc - wtx) \quad (4.9)$$

and the FOC's are

$$\frac{\partial L}{\partial c} = -(1/\mu)[(1-a)c^{-\mu} + ax^{-\mu}]^{-(1/\mu)-1}[-\mu(1-a)c^{-\mu-1}] - \lambda p = 0 \quad (4.10)$$

$$\frac{\partial L}{\partial x} = -(1/\mu)[(1-a)c^{-\mu} + ax^{-\mu}]^{-(1/\mu)-1}[-\mu ax^{-\mu-1}] - \lambda wt = 0$$

$$\frac{\partial L}{\partial \lambda} = w + I - pc - wtx = 0$$

$$x_t^* = \left(\frac{\alpha}{wt}\right)^r \frac{w + I}{p^{1-r}(1-\alpha)^r + (wt)^{1-r}\alpha^r} \quad (4.11)$$

$$c_t^* = \left(\frac{1-\alpha}{p}\right)^r \frac{w + I}{p^{1-r}(1-\alpha)^r + (wt)^{1-r}\alpha^r}$$

What we can see here is that the level of activity x chosen by the individual depends on both the length of incarceration, wealth and wage. It also captures the role of the time constraint. Due to the endowment constraint, for a given level of wage, there is a corner solution defined by $\bar{x} = 1/t$ and $c = I/p$ ²⁰.

²⁰ Note that we assumed that the value of x , and the amount of punishment are the same for all individuals such that the differences in the level of commission of x depend on wage and wealth differences and the shadow cost of time. Chu and Jiang (1993) for instance adopted the assumption that the benefit from x depends on the wealth of the individual. The value is exogenous from the model. Our attempt is to endogenize the differences in marginal benefit arising from the valuation of different wage and wealth groups of time.

At the corner solution, given the government imposed sanction t that is exogenously determined, individuals whose wage is lower than a particular threshold will always commit \bar{x} , while those whose wage lies above it will choose the level of activity that lies within the interior solution $x < \bar{x}$.

From Eq, 4.11, we derive the threshold level of wage w' as

$$\left(\frac{\alpha}{wt}\right)^r \frac{w+I}{p^{1-r}(1-\alpha)^r + (wt)^{1-r}\alpha^r} \leq \frac{1}{t} \quad (4.12)$$

$$w \geq w' = \frac{\alpha}{1-\alpha} \left(\frac{I^{1-r}}{p^{1-r}}\right)^{\frac{1}{r}}$$

$$w \geq w' \rightarrow x_t^* \leq \frac{1}{t}$$

$$w \leq w' \rightarrow x_t^* > \frac{1}{t}$$

Thus, if the individual's wage is above the threshold w' , then the individual chooses x below \bar{x} . However, if the wage is below this threshold, then the individual chooses \bar{x} . For the moment, we will first focus on wealth heterogeneity and assume that all individuals have the same wage.

Let us assume that individuals are heterogenous with respect to wealth. Then, there exists a level of wealth such that individuals whose wealth is equal to or above it are constrained to commit the maximum allowable level of activity for a particular t .

This level of wealth is given by \bar{I} .

Simplifying and factoring we get,

$$\hat{I} = \left(\frac{\alpha}{wt}\right)^{-r} \left[p^{1-r} (1-\alpha)^r - wt^{1-r} \alpha^r + tw \left(\frac{\alpha}{wt}\right)^r \right] \quad (4.13)$$

Graphically, this is shown by the intersection of the income expansion path with the corner solution. Any wealth that lies above it results in the corner solution. On the other hand, all wealth that lies below it is in the interior solution.

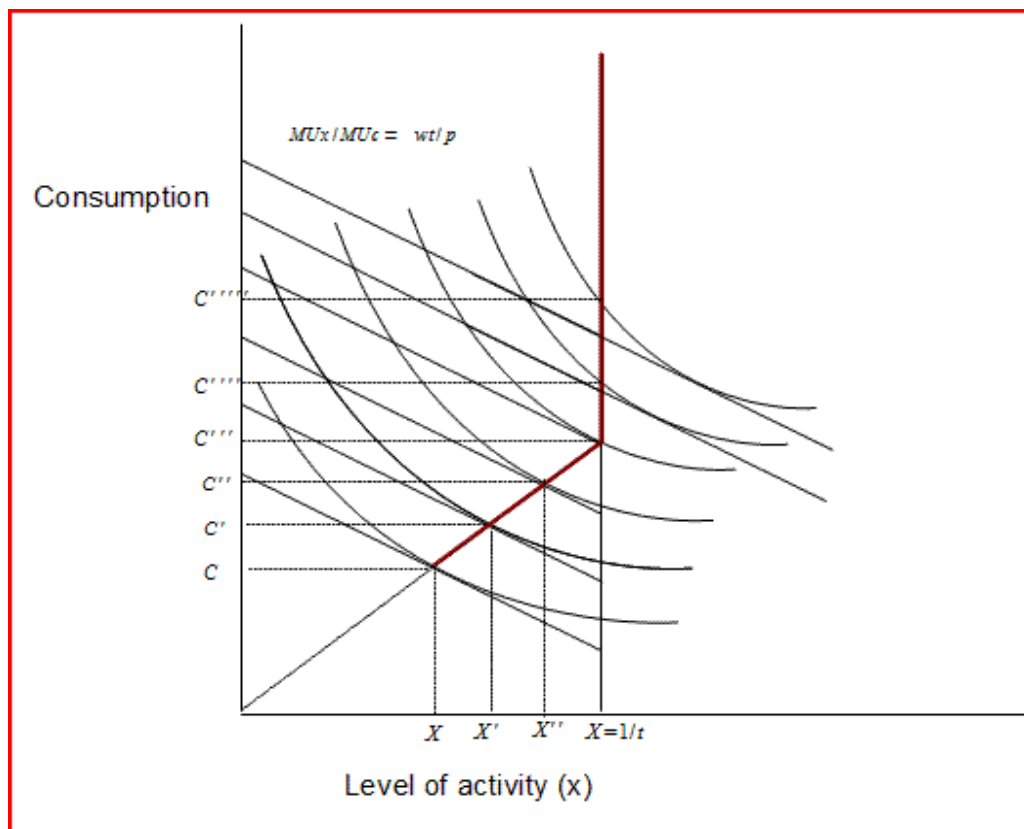


Figure 4.2: Optimal level of x with incarceration and varying level of income.

4.4 Social Welfare

In this section, we explore under what conditions would a fines only regime be preferable to an incarceration only regime.

4.4.1 Fines Only Regime

In order to simplify our analysis, we assume that there are two wealth groups where $I_1 < \bar{I} \leq I_2$ and we let π be the proportion of potential criminals with wealth I_1 . We let x_1 and x_2 be the optimal choice of individuals with wealth I_1 and I_2 when the sanction is a fine, F . For every level of activity, society suffers a proportionate harm equivalent to h . There is a cost of enforcing a fine denoted by a which is also proportional to the amount of the fine.

The social planner then chooses the level of the fine to maximize social welfare. We follow the social welfare specification in Chu and Jiang (1993). To simplify the analysis, they assumed the following: society does not give any weight to utility of criminal²¹, individuals cannot be criminals and victims at the same time, and perfect insurance against crime (Chu and Jiang, 1993; and Polinsky and Shavell, 1979). In this case, the maximization of social welfare can be expressed as the minimization of the social loss function given by

$$\begin{aligned} SC_F &= \sum \pi_i h(x_i(F)) - aF \\ &= \pi h x_1(I_1, F) + (1 - \pi) h x_2(I_2, F) - aF \end{aligned} \tag{4.14}$$

²¹ The rationale provided is that it sets aside the debate on efficient crimes.

where

$$x_{1F}^* = \left(\frac{\alpha}{F}\right)^r \frac{w + I_1}{p^{1-r}(1-a)^r + F^{1-r}\alpha^r}$$

$$x_{2F}^* = \left(\frac{\alpha}{F}\right)^r \frac{w + I_2}{p^{1-r}(1-a)^r + F^{1-r}\alpha^r}$$

Thus, the level of x that minimizes social cost is given by

$$\begin{aligned} \frac{\partial SC_F}{\partial F} &= \pi h \left(\frac{\partial x_1}{\partial F} - \frac{\partial x_2}{\partial F} \right) + h \frac{\partial x_2}{\partial F} - a \\ a &= \pi h \left(\frac{\partial x_1}{\partial F} - \frac{\partial x_2}{\partial F} \right) + h \frac{\partial x_2}{\partial F} \end{aligned} \quad (4.15)$$

which means that the marginal social cost of increasing the fine should be equivalent to the change in the marginal social harm from x . Note that optimal conditions now depend on the proportion of individuals with different wealth.

4.4.2 Incarceration Only Regime

Suppose that the social planner imposes incarceration instead of a fine. The individual spends a period in jail denoted by t . The cost of enforcement is given by b and is proportional to the length of the jail term. The minimization of the social loss function in the case of incarceration is given by,

$$\begin{aligned} SC_t &= \sum \pi_i h(x_i(t)) - bt \\ &= \pi h x_1(I_1, t) + (1 - \pi) h x_2(I_2, t) - bt \end{aligned} \quad (4.16)$$

where

$$\begin{aligned} x_{1t}^* &= \left(\frac{\alpha}{wt} \right)^r \frac{w + I_1}{p^{1-r} (1 - \alpha)^r + (wt)^{1-r} \alpha^r} \\ x_{2t}^* &= \frac{1}{t} \end{aligned}$$

The level of t that minimizes social cost is given by

$$\begin{aligned} \frac{\partial SC_t}{\partial t} &= \pi h \left(\frac{\partial x_{1t}}{\partial t} - \frac{\partial x_{2t}}{\partial t} \right) + h \frac{\partial x_{2t}}{\partial t} - b \\ b &= \pi h \left(\frac{\partial x_{1t}}{\partial t} - \left(-\frac{1}{t^2} \right) \right) + h \left(-\frac{1}{t^2} \right) \end{aligned} \quad (4.17)$$

4.4.3 To fine or to jail?

A fine is preferred over incarceration if for a given level of enforcement cost, the total social cost from imposing a fine is lower than imposing incarceration. Since we let the enforcement cost to be the same, then $aF=bt$, then, whether a fine or jail should be imposed depends on which of them leads to a lower total social costs. Intuitively, given the same spending costs, a fine or a jail term, is preferred depending under which regime is total harm lowered,

$$\begin{aligned}
 & SC_F < SC_t \\
 & \pi h x_{1F}(I_1, F) + (1-\pi) h x_{2F}(I_2, F) < \pi h x_{1t}(I_1, t) + (1-\pi) h l / t \quad (4.18) \\
 & h(x_{2F} - \pi(x_{2F} - x_{1F})) < h \left(\frac{1}{t} - \pi \left(\frac{1}{t} - x_{1t} \right) \right)
 \end{aligned}$$

Thus, this depends on the percentage of the population having income lower than the benchmark multiplied by the difference between the optimal activity level of the two groups. This implies that the higher the proportion of individuals is in the interior solution, which means that the higher proportion of middle range income individuals in the population, the more should a fine be preferred over a jail term.

4.5 Discussion

This shows that on the contrary, when we consider the time constraint,

incarceration provides a stronger deterrence for the rich. This is contrary to what Polinsky and Shavell posited -- that incarceration should be reserved for the poor. This is because they considered the case of wealth constrained individuals whose externalized harm exceeds their wealth. In this respect, they cannot be adequately deterred by fines alone. On the contrary, we explored the reverse case and found that when individual wealth is very high, fines may not provide adequate deterrence for the high wealth individuals. Imposing a jail term, on the other hand, will provide better deterrence for high wealth individuals since the social planner introduces a form of constraint, time, which is the same for all individuals regardless of wealth. Thus, while individuals may have different wealth endowments, considering the extent to which this affects their decision to commit different levels of crime, introducing another constraint in which individuals have the same initial endowment has the effect of correcting the bias in the initial endowment of wealth.

The result may not comport with the empirical fact that there are more low wealth individuals who are in prison as opposed to the rich. We propose two reasons. For one, high wealth individuals may have already been adequately deterred by the sanction and that is why we do not see them in jail. Thus, it may be more interesting to look at the change in behavior of individuals in a situation where a particular act was originally sanctioned with fines alone after which incarceration or incapacitation was introduced. It may be hard to find such cases. However, one that may readily come to mind is the introduction of the driving penalty point system in some countries. The deduction of points for every particular traffic violation results in the revocation or suspension of the driving license. There is an observed decrease in the number of

violations in jurisdictions where it was introduced. The deterrence effect of incapacitation in this case arises from the introduction of the time constraint.

The second main reason is that we have not yet taken into account the role of wage. We have shown that when a sanction is denominated in the form of incarceration, it is jointly determined by the length of incarceration, which is a fixed endowment, and the wage which is the opportunity cost of time. This may show that for individuals who possess the wealth above the given threshold and earning a high wage, choosing the corner solution is no longer optimal and they will opt for the interior solution instead.

Thus, when the wage is very low or zero, then it becomes optimal for an individual in every wealth level to choose the corner solution and commit the maximum level of the crime since there is no opportunity cost for it. Corollarily, an increase in wage will lead to a decrease in x . We study its social welfare implications below.

4.6 Social Welfare and Wage Heterogeneity

For simplicity, we assume three different wage groups, w_0, w_1, w_2 where $w_0 = 0$ and $w_0 < w_1 < w_2$ where $w_1 \leq \bar{w}$ is the average wage. We also let ρ_0 be the proportion of population who have wage equal to 0, ρ_1 is the proportion of the population whose wage is w_1 and $1 - \rho_0 - \rho_1$ are those with wage w_2

The social welfare can be rewritten as

$$\begin{aligned}
SC &= (1-\pi)x^*(I_2, w_2) + \pi x^*(I_1, w_2) \\
&+ [(1-\pi)(\rho_0 + \rho_1)] \left[\frac{1}{t} - x^*(I_2, w_2) \right] \\
&+ \pi \rho_0 \left[\frac{1}{t} - x^*(I_1, w_2) \right] - bt
\end{aligned} \tag{4.19}$$

Thus, the social welfare function depends on the proportion of individuals with different wealth and wage levels. Thus, individuals with high wealth and high wage will not choose the maximum allowable level of x or the corner solution since the opportunity cost of spending time in jail becomes high. This will only be the case when they earn a low wage. On the other hand, low wealth individuals will still behave in a manner predicted by the corner solution as long as their wage is not equivalent to zero. In such case, as the wage approaches zero, they will choose the highest level of activity.

The optimal level of t is given by

$$\begin{aligned}
b &= (1-\pi) \frac{\partial x^*(I_2, w_2)}{\partial t} + \pi \frac{\partial x^*(I_1, w_2)}{\partial t} \\
&+ [(1-\pi)(\rho_0 + \rho_1)] \left[-\frac{1}{t^2} - \frac{\partial x^*(I_2, w_2)}{\partial t} \right] \\
&+ \pi \rho_0 \left[-\frac{1}{t^2} - \frac{\partial x^*(I_1, w_2)}{\partial t} \right]
\end{aligned} \tag{4.20}$$

This implies that the marginal cost of the length of incarceration is equivalent to

the marginal decrease in the total social harm arising from the reduction in the level of activity. Note that the marginal reduction of social harm now depends on the percentage of individuals with high and low wealth and the proportion of those below the average wage and zero wage.

4.7 Tort and Crime

The analysis can also be applied to decide which acts can be governed by tort or criminal law from the point of view of social welfare maximization. Since criminal acts are punishable with incarceration, the scope of criminal law, impliedly, is actually very limited. However, acts where the wage income is highly correlated with social harm can be considered. For instance, insider trading and similar offenses in the financial sector, where individual wage increases with the harm, may be considered. The said analysis also argues for shorter jail term in order to avoid overdeterrence. However, there is a least costly alternative than imprisonment that would achieve the same level of deterrence by constraining the individual use of time. A form of partial incapacitation for instance, may also be considered such as the temporary revoking of license. If the wage distribution of professionals within the group is also skewed towards the higher income group, then the reduction in total social harm may possibly be greater than the increase in enforcement cost when incarceration is imposed as opposed to imposing a fine.

It is also interesting to note that during the Middle Ages in England, there was

no rigid distinction between tort and crime (Seipp, 1996). The same act, such as felony, can be addressed in either branch. The decision was left to the victim and it depended often on the wealth of the accused. Since the victims could not expect monetary compensation when the accused is poor, they opt to pursue the suit under criminal law. On the other hand, when they are rich, they choose to be compensated under tort²².

4.8 Fines plus incarceration as a form of discriminatory sanction

In the previous section, we considered the case where either fines or imprisonment are imposed. In some cases, however, sanctions consist of both a fine and imprisonment. In this section, we look at the optimal combination of fine and imprisonment when wealth heterogeneity exists. Our analysis is restricted to the case where society recognizes the benefit that the individual derives from the act²³. However, the activity also produces harm that is borne by others. Hence, it is more concerned with pricing than the total prohibition of the act.

Social welfare is simply the sum of individual benefits less the total societal harm from the activity x . Assume that the harm H increases linearly with x . We assume that individuals have the same tastes and preferences. Hence, the total benefits

²²See Seipp (1996), pp.83-84.

²³This excludes acts whose utility to the individual is not recognized by the society, for instance, the case of heinous crimes.

to society is just the summation of individual utility²⁴.

$$\begin{aligned}
 SW &= \sum [U_i(c,x) - Hx] \\
 &= \sum [c^\alpha x^\beta - Hx] \\
 &= Nc^\alpha x^\beta - NHx
 \end{aligned} \tag{4.21}$$

where N is the number of individuals in the population.

Maximizing social welfare with respect to x ,

$$\frac{\partial SW}{\partial x} = Nc^\alpha \beta x^{\beta-1} - NH = 0$$

$$Nc^\alpha \beta x^{\beta-1} = NH \tag{4.22}$$

The above equation tells us that the socially optimal level of x is when social marginal benefit is equivalent to marginal harm. Solving for x , gives us

$$x^S = \left(\frac{H}{C^\alpha \beta} \right)^{\frac{1}{\beta-1}} \tag{4.23}$$

If there is no sanction, then the individual is unconstrained in the level of activity x since the harm is externalized to others and the social welfare maximizing level will not be achieved. In order to maximize social welfare, the government can constrain the

²⁴In this case, we used the Cobb Douglas function for ease of computation. The CES can also be used and the same result will be derived.

individual by imposing either a fine, incarceration or both. We assume that there is no cost of enforcement. Although it is an unrealistic assumption, we abstract from it in order to simplify our analysis. The main objective of which is to find the most appropriate policy to pursue when there is wage heterogeneity and when this leads to different levels of harmful activity among individuals.

When individuals are homogenous, then it is sufficient to impose a fixed fine in order to achieve the optimal aggregate level of x . Substituting the above level of x^S to the individual maximization problem, we get the optimal level of the fine that will achieve this objective.

$$\begin{aligned}
 x^S &= x^* \\
 \left(\frac{H}{C^\alpha \beta} \right)^{\frac{1}{\beta-1}} &= \left(\frac{\beta}{\alpha + \beta} \right) \left(\frac{wL + I}{F} \right) \quad (4.24) \\
 F^S &= \frac{\left(\frac{\beta}{\alpha + \beta} \right) \left(\frac{wL + I}{F} \right)}{\left(\frac{H}{C^\alpha \beta} \right)^{\frac{1}{\beta-1}}}
 \end{aligned}$$

Thus, when individuals are homogenous, a fixed fine alone will lead to a level of x that maximizes social welfare.

4.9 Optimal sanction and distributional preference

Suppose individuals are heterogenous with respect to wage, and we denote the individuals with wage \hat{w} as the one indifferent towards obeying and violating the fine,

then those with $w > \widehat{w}$ will violate it. From the point of view of society, this may still be optimal since those who violate can still compensate those who are harmed as long as the transaction cost is zero. However, individuals who violate enjoy a surplus given by S_i ²⁵.

The social planner may have a distributional preference to deny violators of the surplus arising from wage differences alone²⁶. Another reason to deprive individuals from the surplus may be grounded on the overall incentives to the economy. Suppose that there are substitute goods or activities available in the economy that are less harmful, this will discourage individuals from choosing these legal or less harmful activities over the legal ones.

4.9.1 Income is observable

As such, the social planner would then desire the total level of activity where marginal social benefit is equal to marginal harm and individual surplus will be equal to zero. In this case, the optimal sanction will be to set the per unit fine equal to F^S which is equivalent to the marginal harm and a fixed sanction, A_i that is equivalent to the individual surplus which we denote by S_i . We assume that individuals have the same tastes and they only differ with respect to wage. In this case, the optimal sanction is

²⁵The surplus is simply given by $S_i = \frac{\left(\frac{\beta}{\alpha+\beta}\right)\left(\frac{w_i L + I}{F}\right)}{\left(\frac{H}{c^\alpha \beta}\right)^{\frac{1}{\beta-1}}} - F^S > 0$ where $w_i > \widehat{w}$.

²⁶The specification of distributional preference on the part of the social planner is studied in the public economics literature. Our study in this respect is similar to Sharkey and Sibley (1993), Spence (1977),

nonlinear,

$$A_i + F^S x \quad (4.25)$$

where $A_i = S_i$ for each individual. This implies that everyone faces the same marginal fine F^S which is equivalent to marginal harm and a fixed sanction that depends on the preference and income of each individual. Assuming that individual characteristics are observable, the social planner can act like a perfectly discriminating monopolist and achieve the socially optimal aggregate level of x and deny those who violate at the existing fine the surplus. An example of this sanction scheme is the day fine system. If we assume that individuals have the same preferences, then the surplus or the maximum willingness to pay is determined by income.

4.9.2 Income is unobservable

However, in some cases, individual demand or wage is unobservable or costly to observe²⁷. Individuals can take actions to understate their assets and the social planner only has knowledge of the population distribution. Hence, the social planner cannot distinguish the types. In some cases, the social planner may also be constrained to impose a uniform sanction. This may also be due to issues of fairness, prompting the

and Cremer and Gahvari (2000).

²⁷ This is similar to Polinsky (2006) who has considered the unobservability of income as reason for

policy that all individuals have to pay the uniform fine. Then the optimal sanction would still be to price the per unit equivalent to the marginal harm, F^S but the fixed fine should be set equivalent to the set of individuals with the lowest surplus.

Let us assume for simplicity that there are just two types of individual violators, the low wage w_L and the high wage earners w_H , where the proportion of high income is denoted by δ . The respective individuals will undertake, $x_L^* = \left(\frac{\beta}{\alpha+\beta}\right)\left(\frac{w_L L + I}{F^S}\right)$ and $x_H^* = \left(\frac{\beta}{\alpha+\beta}\right)\left(\frac{w_H L + I}{F^S}\right)$. Since $w_H > w_L$ then $x_H^* > x_L^*$ and $S_H = F(x, w)x_H^* - F^S x_H^* > S_L = F(x, w)x_L^* - F^S x_L^*$.

In this case, the uniform sanction is given by a fine $F^S = H$ that depends on the level of activity and a fixed sanction equivalent to the surplus of the low income individual ($A_L = S_L$). The high income individual enjoys a surplus. Then the sanction will be

$$A_L + F^S x \quad (4.26)$$

where $A_L = S_L$. Setting the fixed sanction above A_L will lead to aggregate level of x that is below the socially optimal. At this level, the low income individuals do not enjoy any surplus from paying the fine. On the other hand, the high income individuals now enjoy a positive surplus.

On the other hand, the social planner can also choose to impose the fixed level

of the sanction not in terms of a fixed monetary fine but with incarceration.

$$t + F^S x \quad (4.27)$$

The question is how to set the length of incarceration t such that the socially optimal aggregate level of x is still achieved. The surplus can be expressed as the time it takes for an individual to earn it given his wage,

$$\begin{aligned} w_i t &= S \\ t &= \frac{S}{w_i} \end{aligned} \quad (4.28)$$

We first assume that the surplus for both groups is the same. Then the length of incarceration that will deprive the high income individual of his surplus will be lower than the low income group. To allow efficient violations, t should be set equivalent to the length of time to capture the surplus of the higher income group which is lower. In this case, high income individuals will have zero surplus while low income individuals enjoy a positive surplus. The intuition behind this is that although they face the same length of incarceration, the sanction proves to be more costly for the high income group since their foregone income is higher. Thus, they actually pay a higher fixed cost. Hence, t should be set at the lowest possible level in order to allow for efficient violations. This depends on the weight the social planner assigns to each group as well as the distribution of individuals.

When individual income is unobservable, there is a tradeoff between finding the right incentives to encourage the optimally level of the sanction and capturing the surplus. There are different forms of nonlinear sanction in criminal and tort law. One of

the possible rationale behind this is finding the right balance between the two. Aside from the distributional preference of the social planner, this may also depend on the nature of the aggregate harm which, for simplicity, we assumed to be linear in the activity.

Our analysis is similar to the price discrimination policy of a monopolist. In this case, the social planner has the monopoly of regulating or prohibiting the rights of individuals to perform a harmful activity. Most of the literature on law and economics posit that optimal sanctions should be based on the harm caused by the activity, not on the characteristics of the individual such as income and wealth. This shows that there might be a reason to set sanctions based on the characteristics of the individual if the objective is to capture the surplus of violators. This does not necessarily affect social welfare. It only affects the distribution of gains. However, since individuals are incapacitated or incarcerated, the surplus is actually not captured monetarily by the state. We have also ignored the costs of enforcing the social sanction and the shadow cost of implementing the distribution.

4.11 Conclusion

In this chapter, we took into consideration the role of the time constraint in the individual decision making process to explore the conditions under which a fine could be preferred over incarceration. We make the crucial distinction that the latter is denominated in time and, hence, the model of individual behavior should reflect the

relative scarcity of this resource.

We first considered the case when individuals are heterogenous with respect to wealth and how different groups of individuals behave when the sanction is only either a fine or incarceration. We found that under a fines alone regime, the very wealthy may not be deterred by a uniform fine. In order to be deterred, fines should be an increasing function of wealth. Imposing incarceration, on the other hand, deters individuals who are very wealthy. In order to complete the picture, we then considered wage heterogeneity. We found that individuals whose wage is below a given threshold also cannot be deterred. The choice of whether to fine or to jail then becomes dependent on the proportion of the wealth and wage groups in the society apart from the usual consideration of the harm and enforcement costs.

Our results show that when individuals are heterogenous, optimal fines are proportional to wealth. This scheme is similar to the day fine system extant in Europe. When it is not possible to impose discriminatory sanctions due to certain legal constraints that prohibit such discrimination on grounds of equity or in cases where wealth is unobservable, incarceration may be resorted to. However, we underscore that the channel of deterrence works through the law enforcer's control or restriction of the individual's use of time. Incarceration is a case of full incapacitation. On the other hand, there are other less costly ways of restricting the individual's time allocation. One such scheme is the driving penalty point system.

Since incarceration acts as an incentive compatibility constraint for the very wealthy, this may be the reason why law enforcement agencies choose to criminalize acts that are correlated with this group. However, as discussed earlier, imprisonment is a

very costly sanction. As such, alternative forms of constraining time allocation should be explored. For instance, professional licenses may be suspended or revoked or subject the individual to electronic monitoring, or probation.

It also points to the role of affirmative action as a complement to incarceration. As we have shown, an increase in wage and wealth will unambiguously lead to a decrease in prohibited activity.

To sum up, although effective at deterring particular groups, incarceration proves to be a very costly sanction. Since the mechanism of time allocation restriction can be replicated in other schemes, society should first explore these said methods.

III Social Stigma

5 Social Stigma and Criminal Law

5.1 Introduction

The existence of social stigma as an additional sanction in criminal law is widely recognized in the literature on the cited subject. It is not clear, however, why criminal law has a stronger capacity to stigmatize certain behaviors or why individuals who are convicted of a crime suffer from stigma.

The informal sanction²⁸ that is referred to here is more general than economic stigma which is commonly treated in the literature, starting with the seminal article by Rasmusen (1996), as the difference between the wage levels of the unconvicted and convicted individuals (See also Funk, 2004). Following Goffman's (1963) pioneering work, stigma stems from the alienation experienced by an offender. In particular, we define social stigma as an informal sanction, ranging from mere disapproval to the social ostracization of an individual by second parties for violating a particular social norm or for possessing an attribute that is devalued in a particular context and time (See Crocker, et al, 1998; Shoham and Rhav, 1982). Referring to social stigma as a sanction

²⁸See also Faure and Escresa (forthcoming) for a more general discussion of social stigma as an informal sanction.

avoids the problem of arriving at a definition that is tautological.

Although some argue that social stigma distinguishes criminal penalties from other sanctions, it is also not always the case that every conviction is accompanied by it. Thus, some skepticism has been expressed towards the existence of stigma in the new sets of criminalized acts such as regulatory and economic offenses. At the same time, social stigma is also invoked by law enforcement agencies as a reason for criminalizing a particular offense. Stigma as a form of sanction has a very low, if not zero enforcement cost and, thus, has attracted the interests of law enforcement agencies keen on providing additional means of deterrence. This becomes more apparent in some jurisdictions where shaming sanctions are employed. However, there is potential danger as stigma imposes huge costs on the individual since its variance may be high. The individual may thus suffer from a sanction that is very low or very high and in the latter case, deemed to be too severe as a punishment.

What is needed therefore is an understanding of the social process of stigmatization that takes place under criminal law. We need to understand the conditions under which social stigma exists as an additional sanction. Once we have answered these questions, we can have a better understanding of the criminal justice system as it relates to social stigma.

There are three issues that need to be addressed in studying the existence of social stigma as an additional sanction in criminal law. The first concerns an investigation of criminal law's institutional properties that enable it to inflict stigma. The literature on the subject is rich in suggesting ways by which criminal law's substantive and procedural issues relate to stigma. In fact, they attribute its existence to

these institutional properties.

The second concerns the nature of the sanction. Formal sanctions imposed by courts and law enforcement agencies are typically based on the actual harm or damage inflicted on the victims and individual culpability. On the other hand, the metric of social stigma is largely determined through a social process. It is largely based on the extent of the individual's deviation from the expected average conduct of a member of the group and the degree of difference that such attribute exhibits in relation to the average characteristics of the group. What is considered to be the average conduct or trait depends on social norms and the societal context that includes individual values and traits that are considered to be important.

The third concerns the particular characteristics of the actors imposing the sanction. Unlike formal monetary sanctions, social stigma is imposed by a loose group of individuals who we conveniently call the rest of society. While the court is a specialized institution that discovers and assigns blame in a more rational and systematic manner, the rest of society lacks the time, capacity, and skills involved in arriving at such carefully made judgments by the court. Hence, courts arrive at a decision in a relatively more rationale and systematic manner compared to the rest of society. Apart from their decision-making, we also have to consider how individuals behave as a group in assigning the sanction. There is a burgeoning literature in behavioral law and economics devoted to understanding the mechanisms behind second and third party enforcement and their relationship with one another. The former refers to group or peer enforcement, usually through social norms, while the latter refers to state enforcement through a legal rule. Social norms and the law are not unrelated and

there are circumstances when they reinforce each other or undermine the other. We draw on this literature to understand how criminal law affects social norms and illustrate their degree of complementarity and substitutability as sanctions²⁹. Thus, an appreciation of how they behave as a group, how they acquire information, and how they arrive at decisions is crucial to our analysis.

5.2 Criminal Law and Social Stigma

In this section, we look at the substantive and procedural issues of criminal law and how legal theory as well as the literature on law and economics relate it with the existence of social stigma. While the legal theories of criminal law emphasize its educative and socializing function, the law and economics literature, on the other hand, looks at the deterrence aspect.

5.2.1 Substantive Issues

According to Hart (1958), "what distinguishes a criminal from a civil sanction and all that distinguishes it, is the judgment of community condemnation which accompanies and justifies its imposition³⁰." This captures succinctly what is echoed by

²⁹ To be sure, social norms and the ensuing stigma that arise from its violation depend a lot on the culture and it varies across space and time. Its particularization and the specific application is not within the scope of this study and is a fruitful agenda for future research.

³⁰ Hart (1958).

many in the field regarding the stigmatizing aspect that is unique to criminal law³¹. Hence, a crime is defined as "conduct which, if duly shown to have taken place, will incur a formal and solemn pronouncement of the moral condemnation of the community³²."

Aside from the monetary and non-monetary sanctions delivered by the court, there is an additional burden to the person criminally convicted who must also grapple with the way others perceive or treat him as a member of the society. While it is possible to ostracize an individual for certain wrongdoings, criminal law is an institution that somehow legitimizes the stoking of such negative sentiments towards an individual³³. As conviction is the expression of the "community's hatred, fear, or contempt," it sends the message that after going through a trial, the individual is found to be morally culpable and blameworthy³⁴.

What is apparent in the definition is that it is the community that directly imposes the added sanction on the individual. The government can only influence it indirectly by identifying particular acts as criminal. This implies that in order to be binding, the community should first recognize the legitimacy of the criminal standard. Otherwise, if the community does not perceive the act to be wrong, and it is still within

³¹This may also be subject to debate as some tort scholars claim that civil sanctions also carry social stigma.

³²See Hart, *op.cit.*

³³" On other hand, the sentence of the law is to the moral sentiment of the public in relation to any offense what a seal is to hot wax. It converts into a permanent final judgment what might otherwise be a transient sentiment... . In short, the infliction of punishment by law gives definite expression and a solemn ratification and justification to the hatred which is excited by the commission of the offence, and which constitutes the moral or popular as distinguished from the conscientious sanction of that part of morality which is also sanctioned by criminal law. The criminal law thus proceeds from the principle that it is morally right to hate criminals, and it confirms and justifies that sentiment by inflicting upon criminals punishments which express it... ." -- James Fitzjames Stephen, *A History of the Criminal Law of England 1883* as cited in Dressler, Joshua, *Cases and Materials on Criminal Law* (1994) pp.28-29.

the bounds of acceptable behavior, then there would be no ensuing condemnation.

This may be the reason why criminal law is legislated and not judge-made. The legislature, composed of the citizen's elected representatives, offers a suitable forum for dialogue and consensus-building in modern democratic societies. When the government criminalizes a certain act, however, it does not necessarily follow that the act will carry with it the moral indignation of society, and will be automatically considered as wrongful. A distinction is thus made between acts that are inherently wrong or *malum in se* and acts that only became wrong because the government criminalized it or *malum prohibitum*. Courts and legal scholars, however, have difficulties using these classifications³⁵

The cited classifications are also not rigidly maintained throughout history. There are a number of acts considered to be merely *malum prohibitum* that over time, became *malum in se*. Larceny, for instance, slowly expanded in scope from an offense against possession to an offense against property from the feudal times onwards as the system of ownership became more sophisticated with the rise of the property-owning classes³⁶. When embezzlement was enacted as a statute in 1799, the boundaries of what can be considered as wrongful behavior by an agent towards his principal were less clear as it is nowadays (Tigar, 1984).

Over time, the contours of moral responsibility became clear alongside legal responsibility. A detailed illustration of the historical process, determination of the

³⁴Lafave, Wayne and Austin Scott. *Criminal Law* 2nd ed.

³⁵*Ibid.*, pp.32-34.

³⁶See Tigar (1984). Possession is based on reciprocal duties and obligations inherent in concepts of fealty and vassalage during feudalism. Property is the ownership of an object and connotes rights and usage.

factors behind the cited development, and an explanation of the crucial role of criminalization is beyond the scope of our study. What seems certain, however, is that once an act has become *malum in se*, the standard had been most likely internalized by a majority of the population and the cost of enforcement for a given level of activity could be potentially lowered.

A certain act does not have to be considered morally wrong in order to be internalized as a social norm. Conversely, it seems that such is one way that society defines its norms, with criminal law serving as the medium for internalizing such notions. The moral dimension pervades the language and substantive concepts of criminal law, rendering it difficult to deny that the said branch of law leans towards this direction. To cite, criminal law consists of prohibitions meant as guides to behavior³⁷.

With regards to efficiency, the next question that begs to be asked is why an act should be prohibited based on concerns of morality, or why it is important to label an act as morally wrong? Admittedly, this merits another separate discussion but for our purposes, moral acts may be defined as the minimum standards of behavior that is observed and expected from a member of a group to maintain the stability of the group or community³⁸. Refraining from murdering, raping, and stealing are the minimum standards of behavior that are observed and expected in civilized societies. Extreme cases of medical malpractice, for instance, can be prosecuted under criminal law

³⁷Coleman, *op. cit.* As opposed to tort that is involved with allowing a behavior as long as the individual pays all the cost of his action.

³⁸This definition comes from an evolutionary perspective of morality. Alexander (1985) for instance, defined morality as rules that stems from the "logical outgrowth or extension of the practice of social reciprocity by a complexly social organism which changes as a result of both genetic evolution and cumulative social learning."

because it goes against the grain of medical practitioners' professional commitment³⁹.

The substantive concepts also point to other roles that criminal law plays in society which is not limited to sanctioning or pricing behavior. According to Coffee (1991), criminal law operates as "a system of moral education and socialization," distinguishing it from other branches of law. It is a system for communicating society's moral values, consistent with Hart's view that people obey it not so much because of the legal threats that come as a consequence of its violation but because people consider it worthy of compliance.

Robinson cited two ways through which society defines its social norms. First, every criminal adjudication and legislative debate provides an opportunity to confirm, refine, or change a particular norm. Second, the passage of a criminal legislation ensures that a critical level of support had been achieved for the emergent norm (Robinson, 1996).

The first instance aids in the acquisition of information and the learning of individuals within the community. In a situation where society's moral values are changing because of rapidly changing conditions, criminal law can facilitate the process of achieving an equilibrium situation where moral values are appropriately suited to changing needs. It is within the range of these indeterminate cases that criminalization can provide clarity as to which acts can be considered morally reprehensible in the context of changing situations.

³⁹See for instance Bosk (2003) on how the medical profession regulates members of their community through social norms. He shows how certain diagnostic and patient managerial procedures serve as occupational rituals to validate and perpetuate rules of behavior in the community. See also Greaney (2008) for a discussion of why physician behavior may contradict economic predictions.

There are certain constraints that should be observed when using criminal law as such. As pointed out in Parisi and von Wangenheim (2006) and then later, Carbonara, Parisi and von Wangenheim (2008), the law can have countervailing effects -- the so-called compliance paradox when it is at odds with social norms. The implication is that legal innovation needs to proceed in incremental steps. We observe it happening also in criminal law as most cases of acts recently criminalized used to be and still can be sued under tort law. According to Coffee (1991), society first experiments with a certain standard under tort before it is prohibited in criminal law and, therefore, if there is a blurring distinction between these two bodies, it is but a natural, if not healthy process.

We can consider morality as a subset of the general set of social norms. In the case of criminal law, however, one of the main reasons why it is obeyed, at the risk of being redundant, is that it conveys the shifting standards of society's morality (Coffee).

Dau-Schmidt (1990) claims that a more appropriate channel by which criminal law affects individual behavior is the shaping of preferences. Society can choose to shape either individual opportunities or preferences, depending on the costs and benefits of tackling both. Criminal law belongs to the latter institutional technology as evinced by the substantive issues and structure of the criminal justice system.

According to Dau-Schmidt, this becomes apparent when the following characteristics are considered. First, the language of criminal law speaks directly to the individual. The focus on intent and premeditation is a clear indication that it serves as a warning for individuals who want to violate social norms. Second, imprisonment and fines are incommensurate and should not be considered perfect substitutes for each other. While the role of imprisonment in the usual analysis is reserved for judgment

proof individuals, Dau-Schmidt claims that society places a higher stigma on incarceration. This implies that it could be imposed against more serious offenders even if there is no limit to their solvency. The additional cost of doing so is what the society is willing to pay to shape social norms⁴⁰. Third, criminal punishment varies in amount and form depending on the characteristics of the individual, unlike in tort where the traits of the tortfeasor do not play a role in the determination of the damage. According to this view, only by looking at these other functions can the substantive issues and other elements of criminal law be explained -- including the greater role of intent or mens rea, the punishment of attempt, the secondary role of actual harm and irrelevance of compensation, and the proof of guilt as a prerequisite for conviction.

According to Robinson (1996), a number of defenses allowed under criminal law can also be explained by the role of stigma and its relationship with social norm formation. The de minimis defense allows an individual to be acquitted even if the harm has been proven as long as it is too trivial to deserve the criminal label. On the other hand, if the act is sued under tort, damages should be paid no matter how small. It appears that courts are conscious of the huge discontinuous jump in stigma associated with criminal conviction that is absent in civil law. Another is that while the defense of consent is allowed under tort law, it is not considered under criminal law. The rationale is that a norm has been violated regardless of its voluntary nature⁴¹.

⁴⁰We should also note that Shavell (2003) claimed that there is a cost to imposing guilt on an individual but refrained from elaborating how. We argue that one way society does this is by using criminal law.

⁴¹This argument is compatible with Calabresi and Melamed's need for the maintenance of society's transaction structure but appears inconsistent with Posner's market bypassing theory for the existence of the criminal law. In this case, consent qualifies as a voluntary exchange and should not be prohibited. Some examples that come to mind are the so-called "victimless crimes" such as gambling and prostitution.

It could also explain why some acts, albeit petty like certain traffic violations, are considered criminal. Certain acts are also designated as criminal but remain unpunished or rarely penalized such as sodomy and adultery. The police do not preoccupy themselves with investigating the commission of the cited acts. While the latter clearly lacks moral culpability or blameworthiness, and the former does not appear to serve some efficiency goal except to violate morality, the objective behind criminalizing appears to be influencing social norms and taking advantage of criminal law's socializing forces to achieve deterrence.

To summarize, the stigmatizing sanction of criminal law is imposed directly by the community. As such, the magnitude may be subjective and arbitrary. Criminal procedure is distinct from tort and, as will be discussed below, appears to be especially designed to hold the inherent arbitrariness in check.

5.2.2 Procedural issues

Criminal law is distinguished by its more stringent procedural rules. At every step of the criminal proceeding, a number of evidentiary tests must be satisfied, the non-fulfillment of which could either stall a particular phase or terminate the whole procedure altogether. There are rules regarding investigation, the arrest of a suspect, the filing of charges, the trial, conviction, sentencing, and even correctional treatment. To illustrate, in common law countries, for an arrest to be justified, probable cause should first be established; bringing a case to trial requires the magistrate's review, a

preliminary hearing, or grand jury screening. The suspect also enjoys certain rights such as the right to counsel during trial and some pretrial stages, the right to trial by jury, and the beyond reasonable doubt standard for criminal conviction (Dressler, 1994). Most of these rules are constitutionalized⁴².

As the procedure progresses with the tests satisfied, the defendant's degree of guilt becomes progressively established (Lafave, 1986). The trial ends with a conviction only if the the prosecution manages to establish an accused person's guilt beyond reasonable doubt. Criminal proceedings are structured in such a way that once a case enters the trial stage, the chances of conviction become higher.

Why is criminal law riddled with these evidentiary tests and stringent criminal procedures that seem to favor the defendant? A liberalist explanation is that it is ther in order to guarantee the protection of the individual's rights against the potential abuses by the state.⁴³ Without these procedures, the individual appears powerless as the state has at its disposal its whole machinery that it can mobilize to start an investigation up to the trial stage.

Another explanation is offered from a law and economic perspective, the answer is that, since criminal law offers punitive sanction, such procedures ensure that no costly mistakes are made. There are two types of errors that can be committed -- convicting someone who is actually innocent or acquitting who is, in fact, guilty. In statistical terms, the former is referred to as a Type I error while the latter, a Type II

⁴²See Stuntz (1996). In the US, the search for evidence, the interrogation of suspects, or make arrests law that governs is the Fourth or Fifteenth Amendments, Sixth or Fourteenth Amendments, provision of counsel is in the Sixth Amendment. Plea bargains are also regulated by constitution. Jury selection is also in the Sixth Amendment.

⁴³ See also discussion on Chapter 1, Section 3.

error. The minimization of one increases the likelihood of the other. Posner (1985) posited that society places a higher value on reducing Type I errors (See also Posner, 1999). From the point of view of substantive justice, this makes a lot of sense. From the point of view of setting up additional deterrence measures, however, society should be interested in reducing both types of errors as this would lead to greater accuracy (Garoupa and Rizzoli, 2007).

If we consider the stigmatizing capacity of criminal law as a way to influence individual behavior and shape social norms, then there may be another reason, one that is consistent with providing additional deterrence, for the adherence to strict procedures. In US Supreme Court re Winship (1970)397 US358⁴⁴

"The reasonable doubt standard... is a prime instrument for reducing the risk of convictions resting on factual error. The accused during a criminal prosecution has at stake interests of immense importance, both because of the possibility he may lose his liberty upon conviction and because the certainty that he would be stigmatized by the conviction."

The Court went on to add,

"Moreover, use of the reasonable standard is indispensable to command the respect and confidence of the community in applications of the criminal law. It is

critical that the moral force of the criminal law not be diluted by a standard of proof that leaves people in doubt whether innocent men are being condemned."

This implies that procedural rules serve to protect the legitimacy of the criminal justice system in the eyes of the people, which as pointed out earlier, is necessary for stigma to operate. By ensuring that only the guilty are convicted, the pool of criminals continue to consist of only the most culpable wrongdoers. This makes the criminal justice system more effective in fulfilling its educative and socializing role. The same concern is implicitly expressed in Robinson (1997), Coffee (1991), and Hurd (1996) over the expansion of criminal law without regard for its moralizing function⁴⁵.

In a situation where the standard for moral blameworthiness becomes ambiguous due to rapidly changing social conditions, criminal law can provide the necessary clarity.

The step-wise fashion, characterized by strict tests to guide the process of the criminal proceeding may also function to check the arbitrariness of social stigma. The stigma does not necessarily start with the conviction but may already begin with mere suspicion or investigation. The announcement that a person is being investigated already sends a message to the community that the individual is suspected of committing a crime.

In common law countries, the accused under criminal law is also entitled to trial

⁴⁴ As cited in Lafave, *op cit*.

⁴⁵ Coffee (1991) calls it overcriminalization. "The excessive reliance on the criminal sanction, particularly with respect to behavior that is not inherently morally culpable." p.197.

by jury, ideally constituted by a fair cross-section of society. The defendant is given the choice between "the common sense judgment of the jury and the learned, calculating but less sympathetic reactions of the judge (Dressler, 1994)". In theory, even if the prosecution has met the required standard of proof, the jury could still acquit the defendant based on "some belief, some observation, some value or some other notion of that jury"⁴⁶.

The issue of jury nullification, on one hand, seems confounding when viewed from a justice and efficiency perspective. On the other hand, if we look at it through the lens of stigma and socialization, it seems fitting that the community, either through their representatives in the legislature or the jury, can both define acts as crimes and choose not to enforce criminal sanctions. Stigma is a very subjective sanction the magnitude of which may be hard to quantify or predict. Jury nullification appears to be an appropriate check to the unpredictability of the effects of social stigma. As individuals going on about their daily lives, summoned to fulfill a duty to the community, members of the jury are better positioned to gauge the public sentiment.

Another possible rationale of jury nullification involves the evolution of social norms. There are times when laws have become archaic or inefficient, with the legislature failing to adapt to certain changes in society. In place of such outdated laws, applying emergent or prevailing social norms have become more appropriate. In these situations, jury nullification serves a positive role as seen in the case of racial laws in the US.

⁴⁶Dressler, 1994. "Can jury violate or overturn the law? After advising on the law, the burden of proof, the duties of responsible citizen, in the end, he can do whatever he pleases. Juries are not required to follow the law but their most important function is not to follow the law and the judge tells them this."

5.2.3 Summary

Most of the traditional legal theory of criminal law explain that social stigma arises from its institutional properties. Its objectives underscore the shaping of social norms and not merely the pricing of behavior. The substantive scope of criminal law illustrates that the said branch of law is traditionally restricted to acts which society considers as morally reprehensible. The strength of social stigma relies on the community's recognition of criminal law as an institution that reflects their moral values. Moreover, criminal law's strict procedural rules exist not only to protect the accused from judicial errors. They also serve to protect and regulate the force of social stigma that accompanies a conviction. In a situation where the standards for determining morally wrong conducts become ambiguous, the high standard of proof required to secure a criminal conviction ensures that only the most morally culpable individuals are convicted. When viewed this way, social stigma in criminal law and its ability to shape social norms depend partly on its procedural rules. This suggests an additional economic rationale for the stringent procedural rules of criminal law aside from avoiding costly mistakes.

While literature on legal theory has served to illuminate how criminal law's substantive and procedural aspects give rise to social stigma, the whole picture, however, is far from complete. If we extend the analogy, the literature seems to suggest

that when an act is criminalized, any conviction for committing the said act will automatically result in stigmatization. This may not always be the case. We argue that what is lacking is an account of how the actors imposing the sanction behave strategically. This is appropriately addressed by the literature on law and economics, usually through game theoretic tools.

5.3 Social Stigma: Perspectives from Law and Economics

The seminal paper on stigma is written by Rasmussen (1996) whose main concern is to arrive at an economic measure of stigma as well as to provide a theoretical basis for its existence given that some studies are skeptical of its existence. In the moral hazard problem, a criminal possesses an unobserved characteristic, a lower marginal productivity of labor than the non-criminal. This particular trait, which is important for the employer, only becomes observable when he is convicted. A crime becomes more tempting for the individual when the difference between the wage of the convicted and the average wage of the non-convicted population is small. Thus, in order for stigma to be high, it is necessary that only individuals with low marginal productivity are convicted of a crime. In the adverse selection case, the incentive to commit a crime becomes dependent on the proportion of the criminal type to the population. The game theoretic tools allowed Rasmussen to predict the strategic behavior of group of individuals based solely on the assumption that individuals are acting on their own

private interests, without going into moral considerations.

Applying the same game theoretic tools within the context of social norms and social relationships, Cooter (1999), and Cooter and Feldman (2008) showed how the law can coordinate expectations among individuals in order to reach a low crime equilibrium. Punishment communicates moral indignation on the regulated behavior and commitment that the court will uphold the law. This coordinates the expectations among individuals. As more individuals become morally committed to uphold the law, the building up of trust raises the gains from cooperation and this results in a low crime equilibrium. In contrast to Rasmussen, Cooter is concerned with social stigma. He has identified the perceived violation of a group's social norms when a law is violated as the reason behind the imposition of the social sanction. Thus, the low crime equilibrium described depends to a large extent on how law coincides with social norms. However, there are circumstances when the law does not coincide or is opposed to social norms. What happens is that aside from the absence of condemnation, it may even have countervailing effects and lead to lower compliance (Carbonara, Parisi and von Wangenheim (2008)).

Stigma also arises out of the individual's concern for their social status. Arbak, 2005 showed that an increase in crime lowers the stigma of being convicted. In this case, an increase in the amount of the punishment will not always lead to additional deterrence. Further, when concern for social status depends only on a within-group setting and intragroup social status is deemed immaterial, the said concern may increase crime.

According to Galbiati and Garoupa (2007), moreover, the higher standard of

proof in criminal law plays an important role in fostering stigma. This is because criminal conviction conveys more reliable information to the rest of the society about a person's guilt than a finding of liability in civil law. As such, stigma is higher in the former. Another study that is similar to this approach was conducted by Hylton (2005). His study looks at the function of criminal law doctrines such as intent and explains its economic rationale in order to establish a criteria to determine the scope of crime and tort.

The studies mentioned have taken a signaling and moral hazard approach to criminal law and successfully illustrated how criminal law may be instrumental in attaining a desired equilibrium. Mostly using game theory in describing the strategic interaction of individuals in attaining equilibrium⁴⁷, the cited studies were able to show how social stigma could be conceived as a real sanction and identify the conditions where it applies. In contrast, traditional legal theory tends to subscribe to a static view of social stigma. Its overemphasis on moral issues renders it inadequate to address the issue of determining which acts should be criminalized in order to improve social welfare (See Coffee, 1991)⁴⁸.

However, most of the law and economics literature is concerned with the role of stigma in economic relationships where a criminal conviction sends a signal concerning a person's unobserved trait that is considered important in an economic transaction. For instance, in Rasmusen's study, the cited attribute concerns the individual's marginal productivity. On the other hand, social stigma is based on a general measure of the extent that the individual deviated from the average expected behavior of the

community or how far his attribute deviated from the average trait of the group. These issues will be discussed in detail in the next section.

5.4 Social Norms and Criminal Law

Social norms can also be perceived as the average behavior that the group or community expects from its members. As social stigma is imposed on the individual who violates such norms, we need to have an understanding of the relationship between social norms and criminal law, particularly their complementarity and substitutability as sanctions.

There are many reasons cited in the literature on why people obey social norms. We provide a classification based on the source of the motivation and, likewise, on the group imposing the sanction.

5.4.1 Intrinsic or Personal Motivation

According to this strand of literature, individuals obey a particular social norm because they feel particularly good about themselves when they follow a certain social convention and feel bad when they violate such convention. The representative proponent is Frey (2000). Since it is the individual who polices himself, it is sometimes

⁴⁷ See for instance Gibbons (1992) for a discussion of game theoretic applications.

classified as first party enforcement.

Other social sciences recognize the existence of this motivation, particularly in sociology and psychology which question the economic representation of man, the homo economicus. Economists, on the other hand, have exhibited guarded skepticism, as the cited motivation readily appears inconsistent with the assumptions of individual rationality (Stigler, 1984).

Personal motivation, however, could explain some empirical puzzles that could not be adequately explained by the earlier standard classical theory of incentives that only consider monetary rewards in the utility of the individual. Among them are the blood donation experiment (Mellström and Johannesson, 2008), the kindergarten experiment (Gneezy and Rustichini, 2000), and election voting (Jones and Hudson, 2000). In these cases, when a price was introduced to a voluntary activity, a decrease in the level of the activity was observed. In the labor market, moreover, data indicates that pay is weakly related to individual performance (Schwab and Olson, 1990). Increasing the price of labor does not necessarily lead to an increase in the supply.

The process detailing how prices crowd out the intrinsic motivation of individuals explains this phenomenon (Frey and Jegen, 2001). There are actually two factors at work when increasing the price of an activity: the relative price effect that tells us that individuals will supply more a good with a price increase and the so-called crowding-out effect which leads to the crowding-out of intrinsic motivation by the monetary benefit, resulting in a net decrease in the supply of a good. In most cases, the relative price effect is the only factor at work. There are cases, however, where the latter

⁴⁸ See also discussion on Chapter 2.

may be huge and we observe a backward bending supply curve.

There are a number of situations where this is more apparent such as when an altruistic activity starts to be priced from zero to a relatively small amount (Gneezy and Rustichini). In order to avoid this from happening, prices should be set at a very high level when introducing the pricing of individual behavior. Frey, on the other hand, identified the important role of moral suasion. The backward bending supply is more observable when individual self-determination is reduced and the "locus of control" over a particular action "shifts from inside to (the) outside of the person." In other words, this occurs when circumstances diminish the individual's opportunity to do things voluntarily where they are merely pushed into doing things.

Cooter also recognized the role of intrinsic or personal motivation and recognized that individuals feel good when they follow a social norm. McAdams (1997) refers to it as esteem. Sunstein (1996) calls it self-conception. When this happens, the individual is said to have internalized the norm. According to Cooter, most people obey and follow the law not because of the threat of material sanctions but because they have internalized the same values espoused by the law. For Cooter, the government can enact a law and it will still be observed and followed even without enforcement by virtue of its expressive effect. Sunstein agrees and observes that there is nearly always a social norm for every behavior and people observe it because they have an idea of who they are and they try to behave according to this conception. Otherwise, a person will experience a range of negative feelings from embarrassment to shame.

5.4.2 Desire for esteem

According to McAdams, people obey social norms because people like to be accorded esteem. Individuals care about how others perceive them and how others evaluate them. According to McAdams, there are three conditions for esteem-based norms to exist: consensus, detection, and publicity. First, there should be a consensus within the population regarding the esteem worthiness of a particular behavior. This could exist when there are venues for group discussion and exit. Second, there should also be a means to detect a violation and the person who commits such violation in order to impose the good or bad reputational benefit. Third, the information should be well known within the relevant population. All three conditions pertain to the crucial role of information with respect to the announcement of the norm, monitoring, and enforcement.

For McAdams, the granting of esteem by communicating approval has no cost and is often pleasurable on the part of the giver. For Cooter, however, upholding a norm involves certain costs. Whenever an individual decides to commit to a norm and enforces his obligation, he incurs certain costs in terms of lost time, effort, or the monetary equivalent of the lost opportunity had he decided to violate it. Norm internalization is not a costless process too.

5.4.3 Focal point to coordinate behavior

According to Cooter, the net cost to an individual following a norm depends on the proportion of the people observing or violating it. When there is a small proportion of violators, the expected payoff of a norm violator is relatively higher than that of the norm follower. This being the case, more people will be encouraged to violate the norm -- increasing the proportion of violators accompanied by a decrease in the expected payoff. This will continue until it reaches a point where the individual becomes indifferent to following or violating a norm.

However, it is unclear why a norm should depend on the proportion of people following it. One plausible reason is that a norm exhibits network externalities. As the number of people following the norm increases, the net benefit from following a norm increases. In this context, a norm serves as a focal point to coordinate people's expectations and behavior (See McAdams, 2000).

Economics usually makes a distinction between private and externalized cost and benefit and assume that the individual only considers the former when making decisions. When society finds it difficult to exclude individuals from the enjoyment of a public good, self-interested individuals will free ride. Experimental evidence, however, shows that people tend to cooperate and refuse to free ride far more than the economists have expected (Cooter). People appear to have an awareness of the increasing benefits of cooperation and, hence, create informal rules that become norms that are enforced by

members of the group.

As norms further exhibit network externalities, implying that the value derived from the act increases as the number of people observing it increases, the incentives for norm creation and observance increases⁴⁹. A bandwagon effect is observed until such a point where the norm becomes the standard and obeying it merely becomes a matter of custom and path dependence.

5.4.4 Monetary Incentives

Another reason why people obey norms is the associated formal monetary punishment in cases where a norm coincides with the law. In such cases, the punishment is meted out by the state. Individuals refrain from pursuing an activity because they face a monetary cost that is greater than the benefit.

5.5 Criminal law and the signaling of individual attributes

More than serving as a focal point, Sunstein argues that norms provide a system or a code to interpret the wrongness or goodness of a particular individual behavior.

⁴⁹The process is similar to the concept of tipping-point first espoused by Schelling (1978).

Individuals play specific roles in society. People form expectations on how they should and ought to behave based on their respective roles. A doctor, for instance, has sworn to save lives and protect the health of his patients. Society, therefore, expects him to perform the said role. Similarly, bankers and financial advisors are expected to take care of the wealth and assets of their clients. Social norms, as behavior and rules of conduct that is followed by the majority, are therefore very role-specific.

Individuals desire to live up to such expectations and build their reputations around them. They want to show that they perform their roles well and that they are committed to their obligations and responsibilities. A person's desire could be driven by a host of factors such as enjoying the good opinion of others for its own sake or because their present and future transactions, income or wealth depend on it.

Posner (1998) argues that the main reason why individuals obey social norms could be attributed to the desire to signal their individual type. His theory is an application of the asymmetric information problem in economics. A person would want to convey this information to society by performing observable acts, such as complying with a norm to signal their type. Building a good reputation results in higher future income, as employers prefer hiring a good type. However, signaling would only be valuable to the high type individual and the employer if the low type could not afford it.

Cooter underscores the need for both coercion and expression. Our point is that criminal law appears to address the complex dynamics between these two, which will be expounded in the next sections.

5.6 Process of Norm Change

Ellickson describes the process of norm change and provides a typology of norm agents. First, an exogenous shock occurs that changes the costs and benefits derived from following a certain norm. This can be due to new technological conditions. Individuals, called change agents, whose income or wealth are most affected by the shock have the right incentives to offer a competing norm to challenge the old way of doing things. Other individuals might also offer other competing norms. Individuals who also enjoy a tangible benefit and who possess technical skills and knowledge regarding the norm could best gauge the efficiency or the suitability of the emergent norm. Called norm entrepreneurs, their choice is decisive because their choice is communicated to the public, and provides a clue to the welfare enhancing capacity of the norm. This is partly because they have broader interests and, hence, regarded as more credible than the change agents. Then, Ellickson cited the role of opinion makers, who have a wider interest and more general knowledge that could further sway the tide towards the adoption or non-adoption of a norm.

This process, according to Ellickson is not linear and could best be described as a cascade. A new norm emerges slowly and as the proportion of people following it increases; the momentum of the adoption also increases and reaches a "triumphant rush." This process is similar to the biological system, borrowing heavily from concepts

in evolutionary biology, population dynamics, game theory, and the economics of information.

There are two sources of the norm cascade: one is informational and the other is reputational. According to Ellickson, it is optimal for an individual, after observing the actions of those ahead of him, to follow the behavior of the preceding individual without regard for the information itself. However, blindly following what the person sitting next to you seems hardly optimal. The implicit assumption it seems is the existence of bounded rationality on the part of the individual. He has no way to determine whether others have followed the social norm or whether he is perfectly rational. He would instead be tallying and calculating the probabilities given the data that he has. However, since he faces computational limitations when making a decision, as he cannot compute his utility for each expected contingency (See for instance, Kahneman, 2003 and Simon 1991), he relies on heuristics, such as observing what others do as a convenient approximation of the real population statistic.

The other source of the cascade works as the violator of the social norm provides a way to impose liability on the individual for the cost that he has externalized, which could be explained by traditional economic theory.

5.7 Social Norms and the Role of Information

When legislators criminalize a certain act, they usually engage the public in a discourse that makes them aware that a certain act has extremely harmful consequences

to society, making it fitting for society to spend resources to prohibit it. The establishment of a relationship between the act and the harm, whether intentional or not, changes the perception of society with regards to the act and the actor. Sometimes, the intent to stigmatize a particular behavior is explicitly stated as one of the intended objectives of legislation. When stigmatization is successful, an additional source of sanction, one that is non-monetary in nature, and relies on the rest of society for its enforcement, is evoked.

The first concerns the fact that most social norms are not written. This being the case, the next questions that we ask ourselves are the following. How do people learn of its existence? How is it announced? How does this information spread across society? In the previous section, the process of norm change was described and individuals learn of an emergent norm by observing the acts of others. As more people observe the rule, the more likely the individual perceives it to be a norm.

Even when a norm is written, as in the case where it coincides with a formal legal rule promulgated by the state or other organizations, it is still not easy to define what actually constitutes the prohibited act. The social norm and the law may not even coincide perfectly. Both could even contradict each other. Consider the case of killing a person, which is punishable by law and also carries a social stigma. The act generally carries both types of sanctions. However, there are certain conditions where one or the other may be absent. For instance, when killing another is undertaken as a means of defending oneself, the accused may be exempted from both sanctions. If the act was carried for the purpose of achieving a group's objective, for which the court finds the perpetrator guilty, the group may still confer honor to the act and the actor instead of

stigma.

We should note that there are two sources of informational ambiguity with respect to defining and identifying a social norm. The first concerns the announcement - the process which makes people aware of the elements constituting an act that is sanctionable under the norm, given that such norm is informal and unwritten. Unlike a formal law, it appears that mere announcement of the norm is already a process that needs to be identified. The second involves communicating that a particular act has been considered wrongful by the sanctioning community. A picture of how this particular information is transmitted to individuals should also be provided and the channels of transmission identified.

Another source of ambiguity lies in the nature of the social sanctions. If it is imposed by society and if it is non-monetary in nature, what unit can be used to measure it and if there is no such unit, what are the standards that could be used to approximate it?. Can it be monetized or is the subjective feeling one derives from violating the norm, including embarrassment, shame, and dispute, sufficient? (Sunstein, 1996).

5.7.1 Criminal Law and the regulation of social meaning

Lessig (1995) posited that law affects social norms mainly by regulating their meaning. Social meaning is a semiotic resource that can guide or constrain individual behavior. It can be constructed. History provides a wealth of cases where the

government or other groups have used such regulation to pursue a certain objective. In eighteenth century England, for instance, criminal penalties were meted out to people who dress in a manner that does not correspond to their designated class. By associating the mode of dressing to a negative concept like crime, the former act elicited stigma during that particular period.

While one method directly involves changing the social meaning of an act, the other works indirectly through a change in the frequency in which an act is observed. Semiotic technique proceeds by changing the social meaning of an act directly by "tying" it to or associating it with another act or institution that possesses the intended social meaning. The previous example works this way. Criminal acts carry stigma and tying improper dressing to crime makes the said act subject to stigmatization. Ambiguation, on the other hand, provides a second meaning to an act that would undermine its original conception. While tying aims to clarify the definition of an act, the latter method intends to blur its present social meaning.

Behavioral technique changes social meaning indirectly by changing the frequency by which a particular act is observed. In the process, this technique changes expectations and meaning attributed to an act. Inducing certain behaviors over time will eventually affect these meanings. A law that inhibits an individual from performing an act that will result in the construction or reinforcement of a social meaning alters expectations and, hence, achieves deterrence. The other technique works, in contrast, by encouraging the ritualistic performance of an act in order to change social meaning.

5.8 Criminal law and social norms: Towards a synthesis

In the previous sections, we considered criminal law as an institution that has the capacity to stigmatize certain behaviors and identified the institutional properties that enable it to do so. We are now poised to synthesize this with our understanding of individual behavior and social norms and show how this branch of law invokes the additional sanction of stigma and harnesses social norm. We argue that criminal law influences social stigma, to the extent that such is based on the deviation from the average behavior or trait, by determining the social distance of the act from what society considers as the average behavior.

5.8.1 Punishment

One of our propositions is that punishment under criminal law is suited to avoid the crowding out of personal or intrinsic motivation. Although personal motivation is commonly studied in the literature within the context of conferring honor and encouraging voluntary and prosocial activities, such as blood donation and voting during elections, the same mechanism applies when directing shame towards antisocial activities. Transposing the analogy to criminal law, most people do not commit a

criminal act because they want to avoid high monetary fines or imprisonment. The law had been internalized.

Although these factors affect their decision-making, most individuals do not commit an offense because they have internalized the norm of not performing a criminal act. Hence, the state does not need to spend too much resources to enforce sanctions on the crime of murder because the norm of refraining from killing another person has been internalized.

However, criminalizing a certain act that is not perceived negatively within certain groups could stoke intrinsic motivation and lead to more commission of acts of such nature instead of leading to a decrease in their occurrence. This is what happened when proposals for the criminalization of file sharing through the Internet surfaced during the 1990s (See for instance, Depoorter, et al, 2005; Feldman and Nadler, 2006). The number of file downloads performed using non-authorized mediums increased during this period. Prior to the said proposal, a norm of sharing has already developed among internet users who regard the free exchange of digital music and software as an altruistic and communitarian practice. If criminal penalties are low, then the personal motivation for performing the act could crowd out the prevailing price effect and, hence, lead to the backfiring of monetary incentives. Gneezy and Rusticchini (2000b) attributed the increase in late pickups of children by their parents when a meager fine was imposed to sanction their tardiness. Criminal law avoids this by imposing a very high fine, coupled with the possibility of imprisonment, intended to punish the offender. This would ensure that when criminalizing a certain act, the backfiring of incentives -- associated with low fines in a situation where personal or intrinsic motivation is already

at play -- would not occur.

5.8.2 Inducing Norm Cascade

With regards to the origin and evolution of social norms, a punitive sanction ensures that change agents, individuals who have a direct monetary benefit in changing or maintaining a certain social norm, would be deterred from performing the act. Change agents have a crucial role to play in norm cascades. To the extent that social norms are observed largely because a sizeable proportion of the population also observes it, the higher the population ratio that observes it, the more likely it is selected as to prevail as a norm to regulate a certain behavior. However, in order for a new norm to emerge, there should be a number of individuals who are willing to commit to it and enforce it. They are called norm entrepreneurs. The commitment to and the enforcement of a norm is not costless. Meanwhile, change agents -- persons who enjoy direct material or non-material benefit from the new norm -- are seen to be in the best position to supply it.

When an exogenous shock changes the costs and benefits of a particular act, a number of different norms usually arise and compete with each other to regulate the particular behavior. Some of these norms may decrease social welfare and, hence, government intervention in terms of promulgating a new law is in order. Consider the case of criminalizing insider trading. Due to the increasing role of the financial market in our daily lives, we have seen how huge societal losses result from insider trading.

However, it is very hard to detect and it is much more difficult to develop a standard to define such a behavior⁵⁰. There are a number of acts that could be considered within the borderline of insider trading that are nonetheless considered as prevailing norms within the community. Kaplan, et al (2009) showed that performing certain acts considered as insider trading depends on how they are perceived as parts of ethical norms. In a business that rewards profit-making and sound risk-taking, some of the acts are even considered unethical (Mc Gee, 2007). As criminalizing carries with it higher punitive sanction, a greater number of individuals will be deterred from performing it, particularly the marginal individuals whose current private benefits equal the private costs. Thus, our next proposition is that punishment ensures that a number of individuals would be deterred from performing a certain act, sufficiently creating or destroying a new norm. Some of the critics of criminalization claim that society would suffer from overdeterrence, as it would also discourage efficient transactions. However, if the aim of society is to affect or influence social norms, while their observance depends on the proportion of people committing to and enforcing it, then criminalization may also serve this efficiency goal.

Another group that plays an important role in norm cascades are the norm entrepreneurs. They tend to have high technical skills and possess information on the field where the norm governs. In the context of criminal law, norm entrepreneurs could confer a higher weight of social sanction on deviants. If the objective of criminal law is to start the actuation of second party enforcement and introduce a social norm, then it should understand the behavior of norm entrepreneurs.

⁵⁰See for instance, Bainbridge (2000) on what acts constitutes insider trading. Engelen and van

5.8.3 Substantive Issues

According to Kahan (1998) an individual's actions convey a particular meaning to society (Kahan, 1998). Communities try to encourage or suppress the meaning of a particular act through laws. It appears that criminal law has been a suitable vehicle to carry out this societal objective. Once an act is criminalized, the meaning of the act becomes obscured as it becomes associated with traditional crimes that are considered heinous and abominable such as theft and murder. Criminals are also regarded as individuals usually described as grossly negligent, amoral, wicked, or evil. This is bolstered by the requirement of establishing criminal intent or mens rea in commission of an act. A certain stigma is then created albeit small and ambiguous once an act is legislated as criminal.

In this respect, criminalization can be considered a semiotic technique to change a particular meaning that works either by tying or ambiguation (Lessig).

Most newly criminalized acts, however, are morally neutral and do not carry such negative connotations. In the case of insider trading for example, there is already a general and within group perception that the act is wrong. Making the said act criminal only clarifies the extent of the wrongness. In contrast, in the case of file-sharing within the small cybernet community the said practice is even considered as altruistic, fostering a norm of free exchange. Criminalization provided an alternative way of

Liederkerke (2006) for a discussion on the difficulties of defining the act and its ethical signification.

interpreting the act, blurring the original meaning of the act.

As more people are deterred, the occurrence of a criminalized act becomes rare. People's expectations regarding the criminalized act change as people's behavioral patterns are altered. While it might take a long time for criminal law, through stigma, to change the frequency of the act, the phenomenon nonetheless becomes more apparent with decriminalization. With the decriminalization of offenses pertaining to certain sexual acts such as sodomy, people have become more liberal in displaying their sexual preferences. As the act has become more and more commonplace, people's expectations regarding the act and the individuals behind the act have also changed.

Punishment also carries a signification (Kahan, 1998) that society wishes to condemn an act apart from merely imposing compensatory fines. Aside from this, the process of criminal adjudication that starts with a public debate in the legislature ensures that consensus, one of the main requirements for norm creation, is achieved.

To summarize, criminal law has another value aside from deterrence. This involves changing or constructing the social meanings of a certain act, affecting social norms, and inducing stigma. However, for such system to work, a key assumption is seemingly left out or had remained implicit in previous studies. This assumption, we think, should be recognized and made more explicit -- the individual's bounded rationality used in distinguishing acts construed to be wrongful.

5.8.4 High Standard of Proof

Choosing to obey a law or not, or choosing which of the competing norms to follow based on the individual cost benefit calculus is a difficult and challenging task even at the theoretical level. In real life situations, individuals could not be expected to act as perfectly rational decision-makers because of the constraints they face in processing information and formulating and solving problems (See Fox and Tversky, 1995; Kahneman, 2003; Tversky, and Craig, 1995). Individuals are "boundedly rational" and rely on heuristics to aid and facilitate everyday decision-making.

An individual could not make such calculation for himself but when he becomes aware that a certain act is criminalized, then the act joins the ranks of other acts that are considered harmful. As such, a person concludes that the said act is just as heinous as other abominable crimes. Consequently, persons who commit the said act are tagged as criminals who then deserve to be ostracized and stigmatized. This process of cognitive simplification is called representative heuristics⁵¹.

Merely enacting a law may not be sufficient for an individual to become aware of the criminalized act and what it exactly constitutes. Prosecution and conviction transpire in the public sphere and draw the attention of individuals. Awareness is completed when there is conviction. Since the intensity of the stigma inflicted on the individual depends on the extent to which his action deviated from what a person would normally do, the high standard proof required to convict a person ensures that the stigma inflicted will be high.

⁵¹Note that this is related to Lessig's semiotic technique. In fact, Lessig's tools for changing social meanings e.g. semiotic and behavioral technique could be considered as a subset of heuristics.

5.8.5 Criminal Law and The Problems of Information

In the previous sections, we have provided an overview of the law and economics literature on social norms. We claim that a social norm's conception and persistence can be explained mostly by the role that information plays. It is in this context that we appreciate criminal law's unique properties as a legal institution that affects individual behavior not only by increasing the monetary cost of a particular act but by influencing social norms as well as providing second party enforcement through social sanctions. However, we argue that this claim rests on two crucial assumptions that we feel should be made explicit.

5.8.6 Informational Asymmetry in Determining Individual

Types

Individuals are heterogenous with respect to their intrinsic motivation. Some individuals are personally motivated and will follow a rule even if there is no fine or punishment for violating it simply because they derive a positive utility from doing so. We assume, for the sake of clarity and simplicity, that the distribution of individual types is natural. In real life, however, this is a very problematic assumption since it ignores the role of the socioeconomic environment that shapes individual types.

However, we can make a thought experiment and assume two identical individuals who are exposed to the same socioeconomic conditions. Any difference in their action could be attributed to their different individual types.

Individuals who are more intrinsically motivated make good economic partners or good members of a group since the transaction and enforcement cost of engaging in a productive activity with them is lower. However, a person's individual type is known only by himself. It is unobservable to others. On the other hand, acts committed by individuals are observable. Society can make inferences regarding a person's individual type based on his commission of a particular act. In our case, such inferences will be based on whether or not a person committed a criminal act. Thus, committing or refusing to commit a crime can reveal to some degree the individual type of a person.

Thus, criminal standards, in order to be considered as good signals of type should be set in such a way that it would be cheap enough for the high type to pass on the opportunity and tempting enough for the low type to seize it. Committing a crime signifies that a person belongs to a low type. It is through such determination that criminal law inflicts stigma. However, if the standards include acts that confer honor or provide no clue regarding the type of the individual, the standard becomes confusing and would not be deemed as welfare enhancing.

5.8.7 Bounded rationality and cognitive biases

When there is perfect information and people face no computational limitations

in processing them, distinguishing harmful activities from those that are not would not pose any problem for society. Similarly, proving causality between an act and the ensuing harm would be easy. However, in real life, an act may be spatially and temporally separated from the ensuing harm and, thus, requires omniscience and foresight on the part of the observer. Even if all the information is provided to the individual, he faces computational limitations that prevent him from calculating the entire expected payoff for every alternative contingency that would help him choose the act that would maximize his utility.

Criminal law appears to be a heuristic device that allows individuals to choose the act that maximizes both individual utility and social welfare. When individuals learn that an act has been criminalized, while construing that all crimes are extremely harmful, he circumvents the process of complex computation and concludes immediately that the particular act is also extremely harmful.

It appears that criminal law as an institution has taken into consideration the presence of cognitive biases among individuals. In particular, it recognizes that people tend to overemphasize the role of personality dispositions instead of analyzing situational contexts. This is also called the fundamental attribution error (See for instance, Jones and Harris, 1967). If the aim of criminal law is to stigmatize certain behavior then the requirement of establishing mens rea and guilt beyond reasonable doubt, given this particular bias, would boost the magnitude of the stigma attached to the act. Both aid in the announcement and communication that an act has become harmful and should be prohibited.

5.9 Empirical evidence: Reputational penalties

Karpoff and Lott (1993) conducted one of the pioneering studies in testing the existence of stigma accompanying criminal allegation. They observed, for instance, a significant decline in firms' stock market values following allegations of criminal fraud. Thus, apart from the criminal fines by the courts, they are also punished by the market⁵².

One difficulty in estimating the effects of stigmatization is separating the effect of a legal penalty that may also be translated to lower stock prices from a reputational penalty⁵³. According to Karpoff, et al (2008) the reputational cost suffered by firms accused under civil, administrative, and criminal law is, on average, higher than the fines imposed by regulators and courts. On average, firms suffer a 38 percent decline in market values, 66 percent of which can be attributed to lost reputation. It also appears that the magnitude of the reputational penalty depends on the type of corporate malfeasance. To cite, the ensuing decline in stock prices of firms accused of environmental offenses can be attributed to expected legal penalties while allegations of insider trading leads to full reputational loss (Engelen and van Essen). Armour, Mayer and Polo (2011) conducted a similar study on financial firms in the UK and they found that the magnitude of the decline in stock prices depends on whether or not the act harms the interests of their trading partners. Thus, when the offense concerns the mis-selling of financial products and misstatement of financial reports, the decline is higher

⁵²See also Faure and Escresa (forthcoming) for a detailed discussion and review of the empirical evidence

compared to offenses that exclusively harm third parties. The effect of stigmatization also depends on the sociocultural context. In Japan, for one, shaming sanctions appear to be more effective than in the US (Tanimura, Okamoto, 2010).

Most of the empirical studies that have been conducted so far are restricted to economic stigma where data is readily available. A recent study by Buonanno, et al (2007, 2009) shows that social sanctions provide a strong deterrent to property crime. Unlike the reputational sanction imposed on the firm through the stock market, social sanctions are imposed through a number of social interactions. Thus, the higher the social interaction density, the higher the social sanction, leading to lesser incentives for the individual to commit a crime. Using data that links social interaction density with spatial and geomorphological characteristics of different communities in Italy, they found that property crimes are lower in places where the threat of the social sanction is high.

5.10 Naming and shaming

Since stigma is a real sanction as illustrated by the cited studies, law enforcement agencies are encouraged to use it deliberately as an additional sanction⁵⁴. One of the ways through which it is conducted is through public disclosure initiatives. Among the said initiatives are the publication of names of sex offenders under the US

concerning reputational penalties and the naming and shaming sanctions.

⁵³ See Engelen and van Essen, 2010 for a review

⁵⁴ Ibid.

Megan's Law and the publication of names of tax offenders (See for instance, Pawson, 2002). "Naming and shaming" typically involves the announcement or publication of names of individuals who have committed the corresponding acts in order to draw the attention of the wider public, eliciting public disapproval and subjecting the offender to an unpleasant experience (X, 2003). The said sanction is also used in administrative law. In the US, the Toxics Release Inventory requires manufacturing firms operating in selected areas to submit a report of their annual releases of specified chemicals (Khanna, et al, 2008). The objective was to give stakeholders information and help enforce regulation.

The "naming and shaming" strategy has its roots in criminological literature. Braithwaite (1989) makes a distinction between a type of shaming that is stigmatizing from one that is reintegrative. The former results in alienation that may lead to recidivism, while the latter encourages future compliance⁵⁵.

Coming from the law and economics tradition, Kahan (1991) proposed shaming as an alternative sanction to incarceration. Apart from being less costly to enforce, shaming also expresses society's moral condemnation in the same way imprisonment does. According to Kahan, the current shaming penalties, especially when combined with community service, are less harsh and becoming more politically acceptable. This combined sanction is akin to Braithwaite's concept of reintegrative shaming.

Van Erp (2008), meanwhile, examined the use of naming and shaming sanctions in private and public regulation and identified the conditions under which it is effective. First, when there are complexities to the market transaction such as

asymmetric information, legal enforcement may be deemed problematic. However, she cautioned against the redundancy of imposing the reputational sanction on top of the formal sanction. There must also be a way to punish the violator in the market and a way to spread the information concerning the sanction. It is also effective when the act coincides with moral norms in the community.

The crucial role of what type of information that is conveyed with the public disclosure of offenses is explored further by van Erp (2011) in a study of the Dutch financial market. According to her, naming offenders does not necessarily result in reputational sanction especially when no consensus is achieved within the community as to the inappropriateness of the conduct. Nevertheless, she argues that it can lead to higher compliance if the process of naming and shaming is conducted in a reintegrative manner. Often, as in the case of financial misconduct, what is prohibited by the law is spelled out in broad terms and only through violations can the act be precisely defined. It serves a communicative and educative function across the group if the process is regarded as fair, constructive and facilitates in the arrival of consensus as to the bounds of the regulated behavior.

Funk (2002), however, argued that shaming and other stigmatizing sanctions lead to recidivism. Stigma is a one-shot punishment and a person cannot recover from the loss in reputation for the rest of his life. The convicted and stigmatized individual, who suffers from a lower than average wage, has greater incentives to commit another criminal offense.

Due to the unrecoverable nature of stigma as a sanction, Faure, et al (2009)

⁵⁵This typically consists of a ceremonial integration to society.

questioned the earlier assumption that there are no costs incurred from imposing it. The costs suffered by an agent of a wrong conviction should be considered. Hence, they cautioned against its use alongside administrative processes. If a regulator has committed an error and the case was reversed on appeal, there is no way for the accused to recover the reputational loss. Thus, its use should be limited under criminal law where its strict procedural rules provides checks against wrongful convictions.

Apart from the unrecoverable nature of stigma, it also has a huge variance. This makes predicting its magnitude difficult. When deliberately used in policy, moreover, calibration becomes problematic. This issue becomes more acute with respect to social stigma. As argued earlier, its determination is governed by the community through a social process. On one hand, the rationale for the stigma may not solely be based on harm. On the other hand, it may be based on other objectives that may not coincide with social welfare maximization.

5.11 Conclusion

Given the nature of norms and how they are conceived and behave, we can surmise that criminal law's institutional design possesses characteristics that could influence and affect norms through the following channels. First, the high monetary punishment that affects individuals' extrinsic incentive serve to increase the average number of people who observe it, leading to higher stigma. Second, it serves as a heuristic device for society in a situation where individuals need to signal their true type

to a boundedly rational audience. Through these measures, criminal law is able to influence the number of people following a norm, thereby changing average behavior as well as providing a list of the average traits that an individual should possess. Since social stigma is dependent on the social distance of the act from the average trait, criminal law affects norms through the said distancing mechanism.

Punishment, aside from deterring individuals from committing an act by increasing its monetary cost, also increases the proportion of people who are likewise deterred -- not just limited to the marginal individuals. While society accords shame or stigma based on the distance of the criminal violator to the proportion of the population abstaining from the prohibited act and the frequency by which it is committed, criminal law pushes the said distance to the opposite direction, hence, raising social stigma.

Amid rapid economic, social, cultural, and technological change, distinguishing a wrongful act becomes more difficult. The complexity of the relationships makes it difficult to establish causality between the societal harm and the act. The two may also be separated in space and time. In this case, there could be too much harmful activity, making it necessary for society to be informed of the extent of such harm. Criminalization may communicate this message to society and could evolve as an institution to address this particular cognitive limitation.

An exogenous shock or a group could also arbitrarily change the perceptions about an act by attributing a harmful event to it without any grounds. In this case, criminal law also has the capacity to regulate the error in the attribution of stigma. Criminal law as an institution appears to recognize and address the informational problems in society associated with the identification and classification of individual

types. The cited branch of law aims to signal an individual's correct type and direct bounded rationality among individuals towards establishing causality between a harmful event and the act and actor.

6 Social Stigma, Heuristics and Criminal Law

In the previous chapter, the different factors concerning the existence of social stigma as an additional sanction in criminal law were discussed. Legal theory emphasizes the role of criminal law as an institutional technology that imbues it with the capacity to stigmatize certain behaviors. However, it is a static theory that suggests that everything that is criminalized automatically carries the sanction of stigma. The economic and law and economics literature, on the other hand, are successful in identifying the conditions where social stigma exists using the tools of game theory as it describes the strategic interaction of individuals when facing criminal sanction. Hence, the cited literature is veers away from an ad hoc assumption of stigma and describes the dynamic process of stigmatization.

Legal literature also relates the existence of social stigma with criminal law's educative and socializing function. It suggests the existence of an informational channel through which criminal law affects social norms, which has yet to be properly addressed in the literature on law and economics. As a category, it aids in attaining cognitive efficiency in determining which acts merit society's disapproval. On the other hand, the studies on social norm as well as behavioral law and economics provide tools to understand it.

Another aspect that has been largely ignored in the law and economics literature with respect to stigma is the appreciation of the characteristics of the party imposing the

sanction. Courts are specialized institutions that are paid for their time, possess expert knowledge, and skills to impose the sanction. There are rules that had to be followed in the investigation, accusation, and trial as well as in the determination of the magnitude of the sanction. On the other hand, the party imposing the informal sanction, social stigma, is comprised of a loose group of individuals who do not have the time, skills, and knowledge to do so. Hence, they are more inclined to rely on certain heuristic devices that simplify the process of imposing the sanction to economize time.

As we have already discussed in the previous chapter, we think that a consideration of the crucial role of information and the existence of bounded rationality in individuals in imposing the sanction will help clarify the process of social stigmatization that takes place under criminal law.

In this chapter, our aim is to explain this process and make our assumptions explicit within a model. In particular, we consider the case where individuals employ heuristics in order to simplify the tasks involved in imposing the sanction. Thus, we rely on the literature provided by behavioral economics (Garoupa, 1998; Jolls, 1998; and McAdams and Ulen, 2009). This is what makes our study different from other studies on social stigma. It is, however, similar to the studies of Parisi and von Wangenheim, and Carbonara, et al. with respect to the significance attributed to the interaction between the law and social norm -- the former represented by the average individual type. It is also similar to the study of Cooter et al. (2008) as it takes into account the same cognitive bias -- the overattribution error in explaining the attainment of equilibrium of social norms. However, unlike the cited study, we start with the individual decision-making problem and subsequently derive the equilibrium from the

interaction of other individuals' behaviors.

The model that we developed here is based on the seminal article of Benabou and Tirole (2006). In their paper, prosocial behavior is explained as a means to signal the degree of intrinsic motivation which is an unobservable attribute. Hence, honor is conferred to individuals based on the average traits of those who participated in a particular activity. We used it as the workhorse model to study the reverse case of imposing social stigma in criminal law. We also added the assumptions of boundedly rational agents and judgment heuristics. To sum, the story behind our model is that the violation of a criminal standard provides information to the rest of society regarding the type which is responsible for assigning the sanction, relying on the judgment heuristics that such type possesses. The strategic interaction of all the actors describes the movement towards equilibrium and the existence of social stigma.

6.1 The Court and the rest of society: the role of judgement heuristics

In this section, the difference between the two sanction-imposing institutions is discussed. The differentiation is based on the characteristics of the two institutions, the parties who comprise them, the processes for acquiring and disseminating information, and the procedures for making decision-making. Using the classification of cognition systems posited by Kahneman, the courts belong to the realm of reasoning where decisions are made deliberately, with effort, and based on rules. On the other hand, the

rest of society's decision-making process can be described as intuitive reasoning as it is "spontaneous, immediately comes to mind without conscious search or without effort."

6.1.1 Formal Sanction and the Court

Courts impose the formal sanction after establishing that an individual has violated a certain legal standard. The Court is a specialized institution possessing the knowledge, skill, and time enabling it to discover the commission of an act, establish causality between the act and the social harm, assign the degree of culpability, and impose the commensurate punishment. It carefully analyzes the circumstances surrounding the commission of an act, looks at the social harm caused by the act, considers external factors that may have contributed to the harm, and distinguishes the degree of individual culpability and blameworthiness. They also impose monetary sanctions based on the degree of social harm and culpability. At every stage of the imposition of the sanction, from accusation to the determination of the amount of the sanction, strict rules are followed, ensuring that the imposition of the sanction becomes rational, predictable, and calibrated.

Although the court itself is composed of judges and individuals who are also overburdened with work and are not impartial and perfectly rational, when compared to the individuals who impose the social stigma which we conveniently refer to as the rest of society, then the court spends relatively more time in determining the magnitude of

the formal sanction. In arriving at such characterization, we are guided by the classification provided by Kahneman (2003) concerning the two modes of thinking. The first which he calls System 1 involves intuitive thinking and is fast, almost spontaneous, associative, emotional, slow learning and sometimes governed by habit. System 2 involves reasoning, deliberate, effortful and rule-governed. Thus, the mode applied by individuals who comprise the court belongs to System 2 while the rest of the society more likely applies the former mode.

6.1.2 The rest of society and informal sanctions

Individuals who comprise the rest of society has relatively less time, specialized knowledge, and skills of the court. They only become aware that the individual has committed a certain act when law enforcement agencies apprehend, accuse, and convict an individual. Given these reasons, they are more inclined to rely on judgment heuristics when imposing the informal sanction. Empirical studies of jury behavior, for instance, point to the existence of cognitive biases (See Devine, et al, 2007 for an excellent survey). Two kinds of heuristics involved in the assignment of the informal sanction will be discussed in detail. One involves a heuristic to simplify the process of establishing the causality of an event while the other involves classification or ranking.

6.1.2.1 Causality heuristics

Empirical studies have shown that most individuals tend to overemphasize the role of individual attributes or personality predispositions as the underlying reason for the commission of an act while giving less weight to external or situational factors which may have contributed to its occurrence⁵⁶. This particular cognitive bias is known in the field of psychology as the fundamental attribution error.⁵⁷ Later studies tried to understand under the conditions under which this bias exists, taking into account judgmental uncertainty, ability, and motivation (Devine, 1989) as well as individual accountability (Tetlock, 1985). The studies concluded that there is initially a strong tendency to attribute individual dispositions to the observed behavior of others and discount situational factors (Kelley, 1967), especially when the acts committed violate widely accepted social norms (Jones and Davis, 1965). Although this particular bias is gradually tempered after additional information is provided, the rigidity does not completely disappear.

The main reason cited in the literature for its prevalence is the reliance of people on simple judgmental heuristics since acquiring information regarding to the circumstances surrounding the occurrence of an event requires time. In contrast, courts spend a lot of time and resources trying to establish causality between a harmful event and the individual act by gathering evidence and isolating external factors that may have contributed to the occurrence of the event.

⁵⁶The classic experiment is Jones and Harris. See also Morris, Larrick and Su (1999).

⁵⁷See also Morris and Larrick (1995) for a review of how people try to explain other individual's

Attribution theory, meanwhile, seeks to provide an understanding of how people make causal inferences based on the information that they possess. It explains how people attribute the observable behavior of others and reveals what they perceive to be the underlying cause of the behavior⁵⁸. It is concerned with how the "man on the street" provides casual answers to these questions. For this reason, it is sometimes referred to as "naive psychology". According to Nisbett and Ross (1980), the person and his disposition is the most cognitively available and representative heuristic. Since the act and the actor are immediately perceivable, it is easy to establish a causal link between the two.

6.1.2.2 Classification heuristics

In imposing the informal sanction, however, it is not enough that society learns about the individual's type or attributes. The rest of society must compare the individual's disposition or type to the average type of the population. If the individual type is believed to have the same attributes as the average person, then there exists no stigma.

This implies that the rest of society can make a rational and logical ranking of individual types along different dimensions. For instance, individual type can be conceived as a vector since a person can be classified as either good or bad with respect to his profession or to his role in the family and community. On the other hand, criminal

behavior. This is also known as inference *discounting* (Kelley, 1967).

law may collapse it into a scalar value, ranking individuals as being either a good or bad person. However, in a situation where this is too costly for the individual, they instead resort to assigning a heuristic attribute to the target attribute (Kahneman and Frederick, 2002) which is more salient to the observer. This attribute substitution becomes more apparent in the context of groups as the characteristics of the group become more associated with the individual.

Experiments in psychology have shown that when individuals think of a set, or a group, to the extent that the group is homogenous enough to have a prototype, this information becomes more accessible to them (Posner and Keele, 1968; and Rosch and Mervis, 1975). The prototype heuristic is the attribution of the average salient features of the group to the individual. Thus, when an individual is convicted of a crime, his individual type becomes associated with the average characteristics of the set comprised of convicted persons.

6.2 Model

The timing of the game is as follows. Nature chooses the distribution θ of individual types which is unobservable. The type defines the individual's intrinsic characteristics. Higher type individuals suffer from a higher cost in committing a harmful activity than the lower type.

We consider a discrete distribution of types, with mean and standard deviation

⁵⁸For a general view of causal attribution, see Sloman and Pearl.

respectively given by $\bar{\theta}$ and σ , both known to all agents. In our approach, we prefer not to specify a certain distribution so that any suitable one may be employed. However, since we just take into account two types, the most natural choice seems to be a binomial distribution.

Individuals that lie below one standard deviation less than the population average are considered by the rest of society as bad types, $\theta_b = \bar{\theta} - \sigma$. The individual then chooses whether to violate the legal standard ($x \geq \hat{x}$) based on the monetary benefit and costs of the act and their type. The rest of society observes $x \geq \hat{x}$ and imposes the informal sanction based on a belief function $\mu(\cdot)$, conditioned to such observation.

A one-to-one correspondence is set between the type and the actual level of x chosen. Thus, a conviction reveals the individual's true type. If the rest of society is not boundedly rational, then upon seeing the level of x , they will assign the unique individual attribute to the individual and gauge how far he deviated from the rest of society. However, this is also a complex task as this requires knowledge of the monetary gain and the expected sanction. Rather than assigning a unique value for each level of x , what actually happens is that they associate the individual with the average attribute of the set of violators.

6.2.1 Individual Utility and Sanctions

An individual i derives monetary benefit $k > 0$ from an activity x_i . As the same act also harms others, he suffers an intrinsic cost from committing x_i that depends on his

type θ_i . For a given level of x_i , low type individuals suffer from a lower cost while high type individuals suffer from a higher cost. The individual utility U_i from x_i is given by

$$U_i(x_i) = 2k\sqrt{x_i} - \theta_i x_i. \quad (6.1)$$

Eq. 6.1 implies that without law, different agents choose different levels of x depending on their monetary benefit and intrinsic cost, since the maximization of yields a unique maximum level of x_i :

$$\frac{k}{\sqrt{x_i}} = \theta_i \rightarrow x_i^* = \frac{k^2}{\theta_i^2}.$$

As they all face the same level of monetary benefit, differences in the level of x^* are explained by differences in intrinsic cost.

A law prohibits activity that falls beyond a legal standard \hat{x} , that can be thought of as the level at which a benevolent social planner maximizes the social welfare. When caught and convicted with probability π , an individual has to pay a monetary fine $\phi > 0$. At the same time, the rest of society also becomes aware of the individual i 's commission of x_i and updates their information regarding the individual type.

If the rest of society is not boundedly rational, then they will correctly ascertain the individual's unique type. In order to do this, the individual needs information on a

⁵⁹ Such a utility function has been chosen because of its concavity and the cost term is linear depending

host of variables such as the monetary benefit and the expected sanction. As this too requires time and effort, the casual observer instead assigns the average attribute of the group to the individual.

Based on the average characteristics of the group of violators, the individual violator is assigned the type $E(\theta_i | x_i \geq \hat{x})$. They then compare the individual with the average population type and impose the informal sanction Ω .

$$\Omega := \bar{\theta} - E(\theta_i | x_i \geq \hat{x}) \quad (6.2)$$

When there exists no information about his activity, i is perceived to belong to the average type and hence $E(\theta_i) = \bar{\theta}$ and $\Omega = 0$. On the other hand, knowing that the individual has committed $x_i \geq \hat{x}$, the rest of society updates its prior belief on i . The intuitive reason behind it is that, people ask themselves the question, if i committed $x_i \geq \hat{x}$, how bad a person could he or she be. Their belief function $\mu := \mu(\theta_i \leq \theta_B | x_i \geq \hat{x})$, that is, the probability that they consider an individual to be a bad type given that he has violated the legal standard involves a Bayesian process. If we call p_B the probability for i to be a bad type, and $p_G = 1 - p_B$ the one for i to be a good type, we have:

$$\begin{aligned} \mu(\theta_i \leq \theta_B | x_i \geq \hat{x}) &= \frac{\mu(x_i \geq \hat{x} | \theta_i \geq \theta_B) p_B}{\mu(x_i \geq \hat{x})} \\ &= \frac{\mu(x_i \geq \hat{x} | \theta_i \geq \theta_B) p_B}{\mu(x_i \geq \hat{x} | \theta_i \geq \theta_B) p_B + \mu(x_i \geq \hat{x} | \theta_i < \theta_B) p_G}. \end{aligned}$$

on the individual type. The monetary payoff appears in the concave term and affects the behavior of the

Intuitively, they also assess the likelihood that a good person could violate the same standard. If the answer is in the negative, then his would believe that all individuals who exceed \hat{x} are bad types. On the other hand, if the answer is in the affirmative, then they are less certain whether a person who violated the standard is a bad type at all.

Note that the informal sanction or social stigma is triggered by the public's awareness or perception of the commission of an act and, hence, does not necessarily begin with conviction. A fraction, if not the whole of the sanction, may already be imposed even with mere suspicion or during the accusation phase. This implies that the court and law enforcement agencies should consider that mere announcement of the conduct of criminal investigation may already lead stigmatization of the individual.

6.2.2 Result: perfectly observable case

When x_i is perfectly observable, there is no uncertainty in conviction. The expected value of the individual type conditional on the violation of the standard is

$$E(\theta_i | x_i \geq \hat{x}) = \mu\theta_B + (1 - \mu)\theta_G.$$

Since all bad types are those who are one standard deviation away from the mean $\theta_B = \bar{\theta} - \sigma$ and there is no sufficient information to distinguish the individuals

marginal utility, whose sensitivity to an increase in activity is independent of the type.

who lie above it from the mean, we make the simplifying assumption that $\theta_G = \bar{\theta}$.⁶⁰

Substituting, we have:

$$E(\theta_i | x_i \geq \hat{x}) = \mu(\bar{\theta} - \sigma) + (1 - \mu)\bar{\theta} = \bar{\theta} - \sigma\mu. \quad (6.3)$$

Then, by Eq. 6.2, $\Omega = \sigma\mu$.

We then consider two cases to consider how the rest of the society imposes the informal sanction. The first case is when x is perfectly observable and the other case is when x can only be observed probabilistically.

The definition of Ω shows that the informal sanction or social stigma depends on the beliefs of the rest of society with respect to the type of persons who violate the legal standard and the standard deviation of the population. If $\mu = 1$, then society believes that all those who are caught and convicted are bad types and Ω takes on the maximum value of σ . If $\mu = 0$, then no stigma emerges: $\Omega = 0$.

Proposition 6.1 *When x_i is perfectly observable, then the informal sanction or social stigma is based on the population standard deviation and the belief that an individual who has committed $x_i \geq \hat{x}$ is a bad type. An increase in μ and σ increases the level of the social stigma.*

Proof. The proof is straightforward,

⁶⁰This implies that individuals who are just in the border of committing \hat{x} receive the same Ω as the very bad type. However, we assume this for simplicity. Further research could involve having more than two classifications of individuals, that is, a distinction between the low and the very low type which lies at the extreme tail of the distribution, say a very bad type $\theta_{VB} = \bar{\theta} - 2\sigma$.

$$\frac{\partial \Omega}{\partial \mu} = \sigma > 0;$$

$$\frac{\partial \Omega}{\partial \sigma} = \mu > 0.$$

6.2.3 Result: The non perfectly observable case

When x_i is only observable probabilistically, then the rest of society only has a chance to update information regarding individual type and the conviction is only seen as probable. We will denote with $\pi_i \in [0, 1]$ the probability of conviction of i .

This implies that the informal sanction depends not only on the conditional probability $\mu(\theta_i \geq \theta_B | x_i \geq \hat{x})$ that an individual is of a particular type given that she has committed $x_i \geq \hat{x}$ but also on the probability that the action is observed. Assuming that the two events are independent, then the expected individual type given that he has committed $x_i \geq \hat{x}$ and given that he is convicted is expressed by:

$$\tilde{E}(\theta_i | x_i \geq \hat{x}) = \pi_i \mu \theta_B + (1 - \pi_i \mu) \theta_G$$

and making the substitutions as in Eq. 6.3, we have:

$$\tilde{E}(\theta_i | x_i \geq \hat{x}) = \bar{\theta} - \sigma \pi_i \mu.$$

The informal sanction or social stigma $\tilde{\Omega}$ is then given by

$$\tilde{\Omega} = \sigma \pi_i \mu = \pi_i \Omega. \quad (6.4)$$

Proposition 6.2 *When x_i is only observable probabilistically, the informal sanction or social stigma depends on the population standard deviation σ , the beliefs of society, and the probability of conviction. Any increase in μ , σ and π_i affects Ω positively.*

Proof. It suffices to evaluate the first order partial derivatives of $\tilde{\Omega}$ with respect to all the variables:

$$\begin{aligned}\frac{\partial \tilde{\Omega}}{\partial \mu} &= \sigma \pi_i > 0; \\ \frac{\partial \tilde{\Omega}}{\partial \sigma} &= \mu \pi_i > 0; \\ \frac{\partial \tilde{\Omega}}{\partial \pi_i} &= \sigma \mu > 0.\end{aligned}$$

Remark 6.1 . The level of social stigma equals the product of the probability of observation times the level of social stigma under perfect observation.

Remark 6.2. As a straightforward consequence of the assumption $\theta_G = \bar{\theta}$, neither Ω nor $\tilde{\Omega}$ depends on the average value of the distribution of the types.

Proposition 6.2 implies that while it is the rest of society that imposes social stigma, the social planner can influence it indirectly through its choice of π_i and the legal standard \hat{x} . The rationale for the latter is that x_i is not observable to the community and only becomes so when there is an accusation or a conviction. This provides the opportunity for the rest of society to update their prior belief about the individual's personality predisposition. The choice of the legal standard on the other

hand affects the belief function of the society with respect to the precision concerning the type of individuals that violate the legal standard.

6.2.4 Individual Expected Utility

An individual i 's expected utility from x_i is given by

$$\begin{aligned} EU_i(x) &= (1 - \pi_i)(2k\sqrt{x_i} - \theta_i x_i) + \pi_i(2k\sqrt{x_i} - \theta_i x_i - \phi x_i - \tilde{\Omega}) = \\ &= 2k\sqrt{x_i} - \theta_i x_i - \pi_i \phi x_i - \pi_i \tilde{\Omega}. \end{aligned}$$

The optimal level x_i^* , that is the level at which the expected utility attains its maximum value, can be calculated by solving the equations associated to the first order conditions (FOCs). From Eq. 6.4, we have to remark that $\tilde{\Omega}$ is affected by x_i , although it does not contain such variable explicitly. However, by construction, the μ increases as x_i increases, thus if we denote with μ_{x_i} the sensitivity of μ w.r.t. x_i , we obtain:

$$\frac{\partial EU_i}{\partial x_i} = 0 \Leftrightarrow x_i^* = \left(\frac{k}{\theta_i + \pi_i \phi + \pi_i^2 \sigma \mu_{x_i}} \right)^2, \quad (6.5)$$

for $i = G, B$, after substituting Eq. 6.2. Note that the square root structure of the expected utility ensures the uniqueness of the level x_i^* . Furthermore, note that

$$\theta_G \geq \theta_B \rightarrow x_B^* \geq x_G^*.$$

The optimal level of x_i depends positively on the monetary returns k , and negatively on π_i , ϕ , θ_i , σ , and μ_{x_i} . The variables k , π_i , and ϕ are what the usual

models predict. However, when the rest of the population owns the overattribution effect, the variance of the population type and the beliefs of the rest of society about which type of individual violates the legal standard also play a role. This implies that like in Rasmussen, the probability of conviction enters the utility twice. It increases deterrence through the extrinsic cost and it also increases their reputational cost. However, unlike in Rasmussen, the channel is not through the effect on wage but through the simplifying heuristics adopted by the rest of population that emphasizes the overattribution effect.

Thus, considering the relation obtained from the FOCS in Eq. 6.5, the good and the bad types will commit a given level of x_i if

$$\theta_i \leq \frac{k}{\sqrt{x_i}} - \pi_i \phi - \pi_i \Omega.$$

From now on, consider the assumption $\pi_B = \pi_G = \pi$, that is the probability of conviction is equal across types.

Let \hat{x} be the legal standard, then $\hat{\theta}$ is the individual type that is just indifferent to the choice of obeying or violating the standard:

$$\hat{\theta} = \frac{k}{\sqrt{\hat{x}}} - \pi \phi - \pi \Omega.$$

Therefore, individual types with $\theta \leq \hat{\theta}$ would commit $x \geq \hat{x}$.

6.2.5 Separating and Pooling Equilibrium

We now look for the equilibrium values. There are two kinds of equilibrium that are of interest: the separating equilibrium and the pooling equilibrium. In the separating equilibrium, the good type chooses to obey the legal standard and the bad type chooses to violate it and the rest of society is seen to correctly hold these sets of beliefs. In the pooling equilibrium, all types follow the same strategy and a violation is hardly gives information regarding the type of the individual violating the standard.

If an individual obeys the legal standard then his utility is given, with certainty, by

$$U_i(\tilde{x}) = 2k\sqrt{\tilde{x}} - \theta_i\tilde{x},$$

where $\tilde{x} < \hat{x}$. When he violates the legal standard, then his expected utility is given by,

$$EU_i(\hat{x}) = 2k\sqrt{\hat{x}} - \theta_i\hat{x} - \pi\phi\hat{x} - \pi\Omega,$$

An individual obeys the legal standard if he chooses a level x such that

$$U_i(x) \geq EU_i(x_i^*)$$

and violate the legal standard if

$$U_i(x) \leq EU_i(x_i^*).$$

There exists a particular level of legal standard \hat{x} where individuals who are of good type will always choose to obey the legal standard and the bad types will always violate the legal standard. At this equilibrium, the rest of society believes that all those who violate the legal standard are bad types and all those who obey are the good types $\mu(\theta_B | x \geq \hat{x}) = 1$.

At the separating equilibrium, the following conditions hold:

$$\begin{aligned}
U_G(x_G^*) &\geq EU_G(\hat{x}) \\
U_B(\hat{x}) &\leq EU_B(x_B^*) \\
U_G(x_G^*) &\geq EU_G(x_B^*) \\
U_B(x_G^*) &\leq EU_B(x_B^*)
\end{aligned} \tag{6.6}$$

Consider the inequalities in Eqs. 6.6. Since $EU_G(x^*) > EU(\hat{x})$, the first inequality is redundant. Now assume that the above level of legal standard cannot exceed the optimal level for the good type, that is $\hat{x} \leq x_G^*$, which implies that the second inequality in Eqs. 6.6 can be relaxed too.

Proposition 6.3 *If $\mu = 1$, and the following conditions hold,*

$$U_G(x_B^*) - U_G(x_G^*) \leq \pi(\phi x_B^* + \tilde{\Omega}) \leq U_B(x_B^*) - U_B(x_G^*) \tag{6.7}$$

then a separating equilibrium is admitted.

Proof. By writing down the last two conditions in Eqs. 6.6 we obtain:

$$2k\sqrt{x_G^*} - \theta_G x_G^* \geq 2k\sqrt{x_B^*} - \theta_G x_B^* - \pi\phi x_B^* - \pi\tilde{\Omega},$$

$$2k\sqrt{x_B^*} - \theta_B x_B^* - \pi\phi x_B^* - \pi\tilde{\Omega} \geq 2k\sqrt{x_G^*} - \theta_B x_G^*$$

then collecting the terms, we have

$$2k\left(\sqrt{x_B^*} - \sqrt{x_G^*}\right) - \theta_G\left(x_B^* - x_G^*\right) \leq \pi\phi x_B^* + \pi\tilde{\Omega} \leq 2k\left(\sqrt{x_B^*} - \sqrt{x_G^*}\right) - \theta_B\left(x_B^* - x_G^*\right)$$

which can be rewritten as

$$U_G(x_B^*) - U_G(x_G^*) \leq \pi\left(\phi x_B^* + \tilde{\Omega}\right) \leq U_B(x_B^*) - U_B(x_G^*) \quad (6.8)$$

Remark 6.3. Aside from π , ϕ , and x_B^* the separating equilibrium also depends on the standard deviation σ .

Remark 6.4 Note also that the legal standard is $\hat{x} \leq x_G^*$.

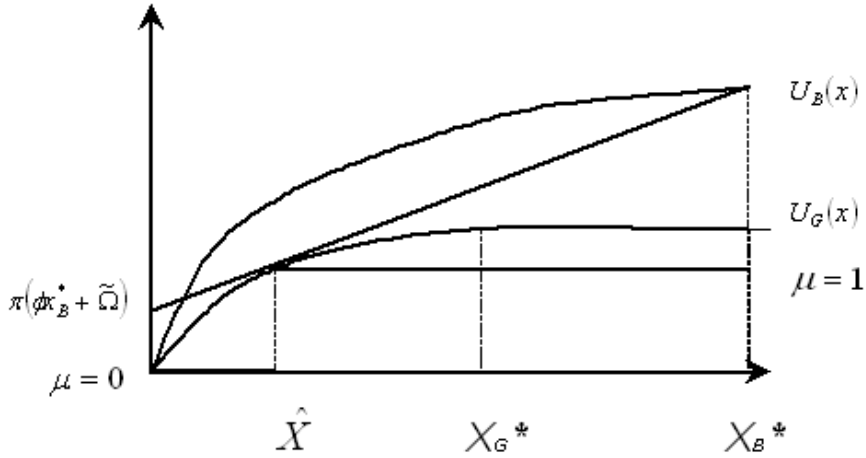


Figure 6.1: Separating equilibrium. For the full magnitude of social stigma to exist, the total sanction represented by the line $\pi\left(\phi x_B^* + \tilde{\Omega}\right)$ should lie above the net utility of the good type U_G and below the net utility of the bad type U_B . Under this condition, all bad types violate the legal standard and all good types obey it and confirms the beliefs of the rest of society about the type of the set of violators.

The above proposition tells us that the legal standard that leads to a separating equilibrium is equivalent to x_B^* , the optimal level for the bad type plus a positive function of the standard deviation (See Fig. 6). Within this range, the net increase in utility of the good type from increasing x_G^* to x_B^* is lower than the expected monetary sanction and social stigma while seen as higher for the bad type. This sustains society's beliefs that only the bad types violate the standard. When this is satisfied, a violation of the legal standard is informative with regards to the individual type for the rest of society.

When $\mu \rightarrow 0$, the violation of the legal standard does not provide any information regarding individual type and in this case, there is no social stigma. Thus, in the pooling equilibrium, $\tilde{E}(\theta_i | x_i \geq \hat{x}) = \bar{\theta}$ and $\Omega = 0$.

In the separating equilibrium, the bad types are worse off since the full magnitude of the social stigma is inflicted on them. When they violate another level of standard, they pay the total formal sanction. However, since a proportion of good types violate the standard too, then the magnitude of the social stigma is absent or, in the case of the semi-pooling equilibrium, only suffers from a fraction of the informal sanction.

On the other hand, while refraining from violating the legal standard allows the good types to correctly signal their type, they suffer a cost arising from the difference between the first best choice and the legal standard to be followed. There might also be some cases where, in the absence of social stigma, they would have chosen to violate the standard if their net monetary and intrinsic gain is higher. If transaction cost is zero, this would have been Pareto improving since the good type violators will just

compensate and pay for the marginal harm that they caused. However, since there is an additional social sanction, this would now prevent them from doing so.

6.2.6 Complementarity, substitutability of fine and detection

In the pooling equilibrium, when social stigma is absent, the relationship between the two policy variables π and ϕ in generating the total expected sanction from the point of view of the individual is the same as what is predicted by Becker (1968). That is, a decrease in π should be accompanied by a proportionate increase in ϕ . In the separating equilibrium, this no longer holds.

In the following we are going to investigate the relationship between the stationarity of the expected utility function for all types.

Proposition 6.4 *If $\mu = 1$ and $\sigma > \frac{\phi x_i}{2\pi}$, then π and ϕ are strategic substitutes.*

Proof. We get the total derivative of the expected utility function for the i th type,

$$\begin{aligned} d(EU_i) &= 2kd(\sqrt{x_i}) - \theta_i dx_i - d(\pi\phi x_i) - d(\pi^2\Omega) \\ &= \frac{k}{\sqrt{x_i}} dx_i - \theta_i dx_i - \pi\phi dx_i - \pi x_i d\phi + \phi x_i d\pi - 2\pi\Omega d\pi \\ &= \left(\frac{k}{\sqrt{x_i}} - \theta_i - \pi\phi \right) dx_i - \pi x_i d\phi + (\phi x_i - 2\pi\Omega) d\pi. \end{aligned}$$

By applying the envelope theorem to Eq. 6.5, the first term vanishes, thus the following implicit relation between the remaining two differentials can be obtained:

$$\frac{d\pi}{d\phi} = \frac{\pi x_i}{\phi x_i - 2\pi\Omega} \quad (6.9)$$

Which is larger than the slope at the pooling equilibrium, that is π/ϕ , provided it is positive.

If we refer to the case $\mu=1$, then the social stigma reduces to σ , and if $\sigma > \frac{\phi x_i}{2\pi}$ then Eq. 6.9 is negative and the two are substitutes.

Thus, in the separating equilibrium, whether whether π and ϕ remain to be substitutes depends on the standard deviation. If the population variance is large enough such that it satisfies the above condition, then they are substitutes but if it is low enough, they are complements.

6.3 Discussion

Although this chapter is limited to a positive analysis of social stigma, we can already draw certain implications to guide policy. One is that aside from considering the individual benefits and social harm, the social planner should also consider the distribution of individual types when determining the optimal level of monetary sanction. If it is disregarded and the legal standard falls within the range of the

separating equilibrium, then the additional informal sanction exists on top of the formal sanction and there may be overdeterrence⁶¹.

As the range where social stigma could be present has been shown to be related to the population variance and the optimal level for the bad type, the policymaker is provided with the knowledge of the circumstances where social stigma exists as an additional sanction. To be more specific, when the population variance is low, a slight increase in the legal standard implies the existence of social stigma. This is because it is clear to the rest of the society that a person of average type will not commit the act. On the other hand, with a higher variance, the legal standard may be high but only formal sanctions exist.

Since the mechanism by which social stigma operates relies on judgment heuristics, one way that the social planner could put it into good use is by providing a more rational mapping of individual types and action instead of the average attribute of the group⁶². This points to the crucial role of information in social stigma and social norms. Providing more information to society in order to arrive at a more precise and rational mapping of individual types and actions is crucial in optimizing second party enforcement of stigma. For instance, laws, rules, or organizations that explicitly define professional or ethical codes of conduct are useful and may be treated as substitutes for other laws⁶³.

⁶¹See for instance Karpoff and Lott (1993) for evidence concerning reputational penalties for criminal fraud.

⁶²See for instance Jolls and Sunstein (2006) for a discussion of how law can take account of boundedly rational individuals.

6.4 Tort and Crime

The separating and pooling equilibrium also serves to illustrate the absence or weakness of social stigma in tort law while establishing its presence in criminal law. The scope of tort law is traditionally confined to regulating accidents and negligent behavior. For instance, an accident could happen to the average person, providing little information regarding individual type. On the other hand, criminal law usually employs a higher legal standard, requires a higher standard of proof, and requires the establishment of the offender's intent. Thus, the institutional properties of criminal law ensure that the set of individuals found violating the criminal standard are, indeed, bad types. Hence, to the extent that individuals possess judgment heuristics, social stigma is more likely to be present in criminal law.

Apart from this, the requirement of adhering to a high standard of proof in criminal law and the requisite establishment of preponderance of evidence in tort law can be explained by the degree of complementarity and substitutability between the probability of conviction and the fine. Since criminal law usually has a higher legal standard than tort law, it lies within the domain of the separating equilibrium where social stigma exists as a sanction. Stigma is already triggered by the announcement of commission of the wrongdoing. Hence, the high standard of proof that lowers the probability of conviction appears to take into account the additional informal sanction. On the other hand, under tort law, as it lies within the pooling equilibrium, there is no

⁶³See for instance Jones (1991).

accompanying social stigma and the fine and the probability of conviction can be taken as substitutes in generating the total sanction. As such, the degree of complementarity between the fine and the probability of detection in generating the total sanction is only true under tort and they become complements under criminal law⁶⁴.

6.5 Conclusion

This chapter provides a positive analysis of social stigma. It illustrates how social stigma can arise due to the judgment heuristics adopted by the rest of society in assigning the informal sanction and the strategic behavior of individuals in equilibrium. Two judgment heuristics concerned with attributing causality and classification are identified in simplifying the decision-making process -- the emphasis on personality predispositions as the cause of an act and the propensity to assign to the individual the average attributes of the group.

Although the courts do not directly impose the social stigma, they can still influence it by making the act visible to the rest of society and influencing the society's belief function. Within the range where social stigma is present, the choice of monetary sanction and the probability of conviction affect the total sanction differently.

The study helps to understand the relationship between legal and informal sanctions the extent to which they can be regarded as complements and substitutes. However, imposing social stigma as shown in the analysis also involves cost to the

⁶⁴This is contrary to the results derived in Becker.

society. While the good types can correctly signal themselves to the rest of society, the legal standard is set below their optimal level and they bear the cost.

Although we did not consider explicitly the social welfare function, we can already discuss the broader policy implications of the model developed in this chapter especially with respect to criminalization and social stigma.

(1) Criminalization and criminal law as a category

Criminal law aids in achieving cognitive efficiency⁶⁵ in the assignment of the informal sanction or stigma to the extent that the parties imposing the sanction are boundedly rational and asymmetric information exist. This is due to criminal law's existence as a separate category whose traditional scope is restricted to morally reprehensible acts, committed only by the most antisocial individuals. Thus, when an act is criminalized, its social meaning becomes associated with the traditional set of criminal acts, resulting in stigma. However, the act of criminalizing also adds to the existing pool of criminal acts. By doing so, criminalization affects the magnitude of social stigma. If newly criminalized acts are comprised mainly of trivial acts, the existing pool of criminal acts would be diluted, resulting in lower stigma. In this case, criminal law fails to provide an effective and credible signal of the individual's intrinsic motivation.

A paradox is seen: while one of the purported objectives of criminalizing so-called morally neutral offenses is to invoke the informal sanction in criminal law it ultimately serves to undermine this same purpose. There are two things at work here. Due to representative heuristics, the newly criminalized act may be accorded a higher

stigma. Thus, more individuals will be deterred. However, it also affects the distance of the average type of convicted criminals from the average of the population. If this social distance becomes smaller, the stigma that accompanies a criminal conviction becomes lower, leading to lower deterrence.

As such, if society wishes to preserve the informal sanction under criminal law, which some scholars point as the main reason why people observe it, then only the most serious offenses that clearly indicate culpability should be criminalized. The criminal standard should be set in such a way that only individuals whose intrinsic cost from violating it is low -- or at least one standard deviation away from the average intrinsic cost suffered by the average individual – would choose to transgress the said standard. In layman's words, only those who are incapable of feeling any guilt, remorse, or shame could violate the standards. Aside from this, the standard should also be clear and unambiguous in order to have a clear correspondence between the individual act and the individual type⁶⁶. This does not imply, however, that stigma is static. According to Coffee, society appears to experiment first with a particular standard under tort, to differentiate negligence and culpability. Hence the standards under tort sometimes start out as fuzzy until it becomes clear and hardens into a criminal standard followed and accepted by the majority.

(2) Overdeterrence

As already discussed earlier, law enforcement agencies should be aware that stigma may exist alongside formal monetary and non-monetary sanctions. Hence, they

⁶⁵ Cognitive efficiency refers to a condition that facilitates cognitive processes and learning.

⁶⁶ In the Benabou and Tirole, 2006 model for instance, there exists multidimensional signaling.

should calibrate the the said informal sanction in order to avoid overdeterrence. We have already determined earlier the conditions under which it exists. In particular, when the legal standard is high enough, a pooling equilibrium is achieved. This implies that formal and informal sanctions may complement each other at this level, implying the possible imposition of lower sanctions.

Moreover, stigma may already be imposed by the mere announcement of investigation or suspicion, whereas formal sanctions are only imposed after the conclusion of a trial. This implies that law enforcement agencies should exercise extreme caution when publicizing their efforts during the early stages of the trial, especially if the legal standard is within the range of the pooling equilibrium. Otherwise, they are indirectly and unfairly inflicting a sanction on the accused. The sanction is also deemed as irreversible in cases of mistakes. This is why law enforcement agencies rely on criminal law and its strict procedural rules when invoking social stigma. Thus, "naming and shaming" policies should be avoided outside criminal law.

As already discussed in the previous section, the substitutability between the fine and probability of conviction changes in tort and criminal law. The main rationale is that stigma most likely exists in criminal law, where strict procedural rules provide a check to the unpredictability and high variance of the informal sanction.

IV Conclusion

7 Conclusion

This book aims to contribute to the discourse on the expansion and the blurring boundaries of criminal law, especially with respect to tort by focusing on the two distinguishing features of the former -- incarceration and stigma. As mentioned earlier, this trend can be characterized by the criminalization of formerly tortious acts, the use of tort law to pursue criminal law objectives as a matter of procedural convenience, the awarding of punitive damages in tort law, and the relaxation of of the requirement of establishing mens rea in criminal law, among others. A debate currently exists in the literature as to its desirability. On one hand, it allows greater flexibility in addressing new sets of problems. On the other hand, critics argue that there is a good reason to maintain the traditional boundaries between criminal law and tort law.

The purpose of the book is to help understand the conditions under which it would be socially desirable to allow the cited trend to continue. The paper, however, is limited to the analysis of incarceration and social stigma. A clear understanding of how incarceration or the threat of imprisonment and social stigma affect individual incentives to violate a particular legal standard is needed to address the issue. Only with the proper identification of the channels by which the two sanctions affect individual behavior can we properly proceed with their normative implications.

7.1 Fines versus incapacitation

In analyzing how incarceration affects the incentive to an individual to violate a legal standard, we considered the crucial role of time constraint. This aspect has not been fully explored in the literature on law and economics, especially with respect to the analysis of the beneficiality of imposing either a fine or a prison term. We observed that that when individuals are heterogeneous with respect to wealth and wage income, and when the level of activity can be considered a normal good, only the middle wage and middle income groups can be adequately deterred by a fixed fines alone regime. The existing literature only considers the case of the very poor, deemed as judgment proof. However, we illustrate that this also holds for the other extreme of the wage-income spectrum. One way to address this issue is the imposition of discriminatory fines -- that is, imposing higher fines for the rich, similar to the day fine system that exists in Germany and other Northern European countries. In this case, the legal system can rely on tort law alone to address deterrence issues. Aside from this, day fines may also be seriously considered as part of the intermediate or alternative sanctions in criminal law. On the other hand, the very poor can also be deterred by increasing wage income in the form of affirmative action.

Conversely, if discriminatory sanctions cannot be imposed by the social planner, then a jail term may also be imposed. In this case, the legal system may take advantage of incarceration which is a sanction under the ambit of criminal law.

However, the social planner should exercise caution. While effective deterrence leans towards the imposition of imprisonment as well as wider criminalization of acts, the scope for the said sanction is very narrow -- that is, only in cases where the social planner cannot impose discriminatory fines due to legal constraints or unobservability of wealth.

Moreover, we have to keep in mind that the main reason for imposing imprisonment is wealth and wage heterogeneity. Allocating time endowment, which is the same for all individuals, is seen as a possible way to correct other endowment biases that lies at the core of the problem with deterrence. Thus, society should pursue less costly alternatives since there are less costly forms of sanction that may achieve the desired level of deterrence aside from imprisonment. Incarceration or imprisonment is the only widespread and universally adopted sanction or punishment that is denominated in time. However, this is a costly way to deprive individuals of their time, from the point of view of enforcement agencies and from the point of view of the individual, as evinced by the huge amount spent annually in maintaining the penal system and huge losses due to the destruction of human capital in prison. There are other forms of sanctions that are less costly that achieve a similar deterrence effect. As opposed to full incapacitation, such as imprisonment -- which disables the individual from pursuing opportunities to earn income or enjoy any utility during the period of incarceration -- partial incapacitation may be seen as a more equitable and productive form of sanction. An example of this is the driving penalty point system where the individual's time allocation is simply restricted as opposed to the total deprivation of time experienced in incarceration. An offender, in the cited system, is only deterred

from spending his time to pursue a specific activity. As mentioned earlier, there are empirical studies that show that the system has been effective in curbing vehicular accidents. The mechanism and channel at work in the said system is the same as those that are present in imprisonment albeit less costly.

Another important policy implication is that in choosing between a fine or imprisonment, the distribution of wage and income in society should be taken into consideration. Thus, only in cases where the social planner cannot employ discriminatory sanctions -- that is, if he cannot impose a higher fine on the rich -- should imprisonment or criminalization be considered.

In cases where both a fine and a jail term are imposed, the sanction actually becomes nonlinear from the point of view of the individual. Fines should be set equivalent to marginal harm. In order to extract the surplus, imprisonment should be imposed but the jail term should be very short. We have to emphasize, however, that our analysis of fines and jail term as nonlinear pricing only applies to the category of efficient crimes, which are crimes that are seen to bring immediate benefits to the offender. Hence, the activity is being priced and not being prohibited.

7.2 Social stigma

According to traditional legal theory, criminal law plays another important role in society aside from deterrence. It has an educative and socializing function. If this is disregarded, criminal law would be treated as an institution that merely prices and

sanctions behavior. Critics of the law and economics approach would then claim that the said framework only dilutes the cited functions of criminal law. Moreover, they claim that criminal law is obeyed not only because of the punitive sanction and the threat of incarceration but also because it is an expression of society's treasured values and norms. Thus, they argue that the criminalization of morally neutral offenses, the relaxation of the requirement to establish mens rea, and the use of civil law to pursue criminal law objectives will undermine the educative and socializing function of criminal law.

However, it is not clearly understood how criminal law could fulfill the said functions. Also, such a characterization renders criminal law as an anachronistic category since it fails to address welfare enhancement concerns. We attempted to address this issue by focusing on social stigma by exploring the circumstances where a criminal conviction carries an additional social stigma. Through such an analysis, we can better understand the dynamic process.

We first identified the issues that make it difficult to study social stigma from a law and economics perspective. The first concerns the metric by which social stigma is imposed where we claim that the sanction is not necessarily based on the harm caused but on how far the individual deviated from the average expected behavior of individuals also known as social norms; and how far his attributes deviated from the average traits possessed by the rest of the society. These two averages are determined by a social process and depend on the social context. The second issue involves the nature of the institutions imposing the sanction. Unlike the courts, which is a specialized institution tasked with discovering and assigning blame, the rest of society

is comprised of a loose group of individuals who lack the time and specialized knowledge and skills to do what the court does. Hence, the rest of society rely on heuristics to simplify the complicated tasks associated with imposing the sanction.

Social stigma is seen to accompany a conviction under the following conditions: first, when the law coincides with the society's social norms; and second, when the prohibited act provides information on an unobservable attribute or trait of an individual -- crucial in establishing or maintaining social relationships beyond mere economic relationships.

Criminal law may serve as an institution that facilitates cognitive efficiency in the process of imposing the social sanction to the extent that the rest of society is boundedly rational and use judgment heuristics. The rest of society must simplify the complicated and time-consuming task of assigning blame and culpability and determining how far the individual deviated from the average trait or expected behavior of individuals. We also considered cases where the rest of society relies on prototype heuristics and exhibits overattribution bias.

With these considerations, it appears that the institutional properties of criminal law such as the requisite high standard of proof, ensures that the pool of convicted criminals are veritable bad social partners. Hence, since the rest of society possesses prototype heuristics, criminal law assigns or associates group attributes (the stereotypical criminal types) to the individual without investigating the details of the case or the circumstances surrounding the commission of the act. This makes the task of imposing the social sanction easier.

Apart from this, punitive sanctions -- onerous monetary sanctions imposed for the commission of a crime -- also ensure that more people are deterred from violating a particular legal standard. Hence, it moves the average expected behavior of individuals, influences social norms, and increases social stigma.

Thus, even if the social planner does not impose the social sanction directly, the impact of social stigma can still be influenced by the probability of conviction and the level of the monetary fine imposed as well as the varying degree of correlation between the legal standard violated and the social traits or attributes of the individual. The first two look at the complementarity and substitutability of the probability of detection and monetary fines when social stigma is present or considered. The last relies on the crucial role of information provided by criminal law as an instrument of cognitive efficiency. We think that this should be underscored since the degree of individual culpability is now difficult to ascertain amid complex economic relationships and the complications posed by the technological infrastructure of globalization. Criminal law, in this case, serves as a medium to communicate the degree of seriousness of a violation. In identifying the channels through which formal sanctions can influence informal social sanctions, we have illustrated how they can be complements and substitutes.

Paradoxically, using criminal law in order to invoke stigma for the violation of a legal standard may also serve to undermine its strength. This is because newly criminalized acts add to the brimming pool of acts considered criminal. Hence, when such criminalized acts are deemed to be merely trivial offenses, the determination of acts considered criminal fails to effectively reflect the intrinsic cost of committing a

crime, which is crucial in establishing and maintaining of social relationships.

The study on social stigma is also a response to earlier calls to put the study of bounded rationality and heuristics back into the context of society and institutions (See Knight and North, 1997). To date, the concepts of behavioral economics and boundedly rational individuals are studied in the context of the individual's own physical and temporal cognitive limitations. It is conducted outside the social context. However, it appears that institutions, including legal institutions, may have already evolved to address these cognitive limitations (See for instance North, 1996; Sunstein, 2005; and Tirole, 2009). Thus, this study explores this function in criminal law.

7.3 Recommendation

This book, however, was mainly concerned with providing a positive analysis of incarceration and social stigma. Its foremost aim was to describe and identify the channels by which these instruments affect individual behavior. This will serve to guide the social planner in choosing and devising the legal architecture that will best enhance society's welfare. The policy or the normative implications considered in the book are the narrow extensions of the positive analysis. The study is therefore limited to this. The explicit normative implications are not thoroughly discussed, especially with respect to how it applies to specific policy issues and is, thus, a good subject for future research. Its particularization across space and time is also needed. Another worthy endeavor is the testing of the theoretical results we have obtained through empirical observation.

To sum, the results of our analysis reveal that the scope of criminal law is narrow both for the purposes of deterrence and cognitive efficiency. While there are

certain conditions where the enforcement of criminal law may lead to an increase in social welfare, particularly with respect to incarceration and stigma, we have also identified the channels through which they could affect behavior. Since such mechanisms can be replicated in less costly ways, society should first try or seek to employ these legal institutions before turning to criminal law as a last resort.

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