KATARINA SVATIKOVA

ECONOMIC CRITERIA FOR CRIMINALIZATION

OPTIMIZING ENFORCEMENT IN CASE OF ENVIRONMENTAL VIOLATIONS

Economische Criteria voor Strafbaarstelling:
Optimalisering van de Handhaving bij Milieu-inbreuken

Economic criteria for criminalization:

Optimizing Enforcement in Case of Environmental Violations

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Promotoren:	Prof.dr. M.G. Faure LL.M. Prof.dr. L. Franzoni
Overige leden:	Prof.dr. G. Heine Prof.mr. P.A.M. Mevis Dr. L.T. Visscher

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Table of Contents

EXECUTIVE SUMMARY

Background

Recent EU Directive (2008) on the protection of the environment through criminal law asked the Member States to use criminal sanctions to enforce several EU environmental directives. Because a Directive has to be directly transposed into the national legislation, the Member States have the obligation to enforce environmental violations through criminal law. Originally, criminal law was used only for the most serious and 'intentional' cases, such as murder, rape or theft. However, with the rise of the new economic order after World War II, more and more violations, regulatory in nature, fell under the umbrella of criminal law. Some speak of the overcriminalization phenomenon, others argue for the increasing need of criminal sanctions because of their deterrent effect.

Purpose of this Research

This debate on the use of criminal law as an enforcement mechanism, particularly in the area of "regulatory" crimes, brings forward a fundamental inquiry and the motivation for this research: why should criminal law be used at all to control these activities? Criminal law has traditionally been portrayed in the literature as the most coercive and expensive instrument to use to deal with harmful conducts because of its severe sanctions and high enforcement costs. Hence, it is puzzling why society uses it also for the allegedly minor harms, administrative in nature. In these cases, the use of administrative sanctions, particularly of administrative fines, might show to be more efficient, since the administrative proceedings are much simpler, and hence presumably cheaper, compared to the criminal proceedings. These developments in administrative penal law have been seen in certain jurisdictions, however, it is still questionable whether they make sense also from an economic perspective. The bottom line is that the rationale for using criminal law is not always clear. Therefore, the purpose of this research was to answer the question *why, from an economic perspective, society should use enforcement through criminal law, and when there should be a role for administrative law*. More particularly, the goal was twofold: first, to determine w*hat the economic criteria for criminalization are as*

opposed to relying on private and administrative law remedies, and two, to establish whether *there is a scope for administrative law sanctions, namely administrative fines, and if yes, under which conditions*. Thus, the main task of this research was to investigate whether there is an economic justification for having two enforcement instruments, criminal and administrative, and under which conditions one enforcement instrument should be preferred to another. The application was made to the enforcement of environmental violations.

Methodology

To answer these research questions, three theoretical perspectives were discussed: the criminal legal theory (Chapter 2), criminology (Chapter 3) and particularly the economic theory (Chapter 4). The main focus was on the economic theory, principally the law and economics approach, based on which the economic criteria for criminalization were developed and summarized in Chapter 4. The different enforcement instruments were evaluated according to the normative criterion, efficiency. Efficiency means that a certain enforcement mechanism is effective in reducing social harm in question and at the same time it does so at the lowest possible cost. This approach allowed for the assessment of instruments and their impacts according to a structured framework, the so-called cost-benefit analysis. The analysis in this research was normative, as it tried to suggest when criminal law enforcement should be applied, but it showed some positive elements as well.

This normative framework was then applied to environmental harms in Chapters 5 and 6. In Chapter 5, a comparative analysis of four jurisdictions, namely the Flemish Region, the United Kingdom, the Netherlands and Germany, was made with regard to their enforcement practices of environmental law. Some enforcement data was collected and analyzed to suggest whether enforcement through criminal law alone is sufficient, or whether there is a role for administrative law remedies, such as administrative fines, which were not available in all jurisdictions until recently. The data availability was limited and not comparable across jurisdictions, however, it still offered important insights into the analysis. Whether this complementarity of criminal and administrative sanctions makes sense from an economic

perspective was analyzed in Chapter 6. Using a simple model, conditions were specified under which the use of administrative fines would be welfare enhancing, and hence would have an economic justification.

Findings

The analysis conducted in this research lead to several findings:

- *The enforcement through criminal law should be used only in limited circumstances.*

The comparative analysis of the criminal legal theory, criminology and the law and economics approach showed that each approach had different aims, which reflected in the diverging focus of the theories. Criminal legal theory discussed in Chapter 2 set up the legal and philosophical background for criminal law, presenting the four distinguishing elements of a criminal act, the main goals of criminal law, and the legal criteria for criminalization, namely the principle of individual autonomy, the principle of welfare, the principle of harm and the principle of morality. From the discussion in this literature, it could be implied that *the role of criminal law should be limited to where absolutely necessary*, i.e. *only to protect the society/individual from harm or to symbolize some common values and norms (declaratory function)*.

On the other hand, criminology portrayed criminalization as a power struggle among various groups in the society. The so-called victimized-actor model discussed in Chapter 3 pictured the offender as a victim of a social conflict, where the powerful groups in a society imposed criminal sanctions upon the less powerful groups. The labeling theorists argued that a certain behavior itself was not inherently criminal, that it is the society that labeled it so. Critical theorists tried to bring attention to the 'white-collar' crime, as a way of showing that crimes were not committed only by the poor, but also by those who were wealthy and powerful. The aim of these theories was to explain and maybe to bring attention to the fact that criminal law was a powerful tool, which could be misused. Thus what could be implied from this discussion

is that similarly as argued in the criminal legal theory, *criminal law should be used cautiously and fairly (when justified)*.

The economic perspective, particularly the law and economics, focused on deterrence as a goal of criminal law. According to this approach, potential offenders responded to incentives provided by the state, and violated criminal law if the expected sanction was lower than the expected benefit of violation. This so-called cost-benefit calculation rested upon the assumption that people were rational (do not make systematic mistakes) and weighed the costs and benefits of their actions. In addition, according to this perspective, the normative goal of criminal law was efficiency. According to this criterion, criminal law should be used only when it is the most efficient instrument to use in comparison to remedies offered by private or administrative law. Enforcement instrument was efficient if the social welfare was maximized, or alternatively, the social costs (harm and enforcement costs) were minimized. Because in general criminal law enforcement is the most expensive instrument to use, what could be implied from the economic analysis is that similarly as argued in the criminal legal theory and criminology, *only under certain limited circumstances enforcement through criminal law should be used*. The economic criteria for criminalization developed based upon this cost-benefit analysis formed the core of the framework used in this research.

- *The normative economic criteria for criminalization are: (1) harm is large and/or immaterial and/or diffuse and/or remote; (2) stigma is desired (educative role of criminal offences); (3) the probability of detection is low; and (4) the criminal enforcement costs are sufficiently low.*

Chapter 4 discussed the need for public law enforcement as opposed to private law enforcement, as well as the need for criminal law enforcement *vis-à-vis* administrative law enforcement. The normative criteria developed in this chapter showed the trade-offs between these three legal instruments, which all aim at reducing harm. There were six criteria identified justifying the use of public law enforcement: (1) intent, (2) imperfect detection and

enforcement by private parties, (3) the level of harm, (4) low probability of detection, (5) punitive aim of law, and (6) if the public law enforcement costs were lower than those of private law enforcement. Under these conditions, it was argued that private law, namely tort law, did not suffice to decrease and to internalize the cost of harm efficiently, hence, the enforcement through public law would be needed and socially desirable.

Moving on to the criteria for criminalization as opposed to the criteria for using administrative law, four normative criteria were pointed out: (1) the availability of imprisonment, (2) stigma, (3) deterrence strategy (as opposed to compliance strategy), and (4) if the criminal enforcement costs are sufficiently low. Under these circumstances, it was plausible to argue that criminal law was needed, and hence, that it would be the most preferable instrument to use from a social welfare point of view. Based upon this analysis, the economic criteria for criminalization were summarized. It was argued that criminalization of an act should be used in areas where:

1. harm is large and/or immaterial and/or diffuse and/or remote
2. stigma is desired (educative role of criminal offences)
3. the probability of detection is low
4. criminal enforcement costs are sufficiently low.

Under these circumstances, *ceteris paribus*, it was argued that the use of criminal law was the most efficient instrument to internalize the social costs of harms, and hence was justified. As expected, these findings all pointed to the same conclusion: *the use of the criminal law should be limited only to the cases where it was really needed – where the benefits outweighed the costs and where the private or administrative sanctions did not provide sufficient incentives for compliance at a relatively low cost*.

- *There is definitely a role for administrative sanctions, namely for administrative fines, the degree of which depends on the distribution of abatement costs among firms, on the marginal enforcement costs and on the probability of detection and sanctioning.*

Chapters 5 and 6 looked at the scope of criminal and administrative law in enforcing environmental regulations empirically as well as theoretically. In Chapter 5, from the data available and analyzed, it could be seen that the *dismissal rate of environmental crimes is relatively high*. In the Flemish Region, for example, the data showed that on average in around 60% of cases the prosecutor dismissed the case. Similar data was shown for Germany, during the 1980s. Hence, the prosecution rates were relatively low, in the Flemish Region around 7%, and in the UK around 3% (but the prosecution rate for serious violations was 63%). The Flemish Region and the UK until mid-2009 relied primarily upon criminal law to enforce their environmental violations. The purpose of this chapter was not to show that the prosecution rates were low, as this might have been the optimal range of violations for which criminal law would be the most efficient instrument to use. The problem lied in the fact that if only a small proportion of crimes were actually prosecuted, maybe the scope of criminalization should have been decreased. This would correspond well to the theoretical discussion presented in Chapters 2 to 4. One way of dealing with violations, which do not merit going through the criminal sanctioning process but still merit prosecution, was to apply administrative sanctions, particularly administrative fines, as was the case in Germany. The empirical assessment in Chapter 5 gave an indication that in practice this was the case, and hence, there should be a role for punitive administrative sanctions, particularly when talking about environmental violations. The data did not provide a clear indication about the relative effectiveness of these two systems on deterrence or compliance, but given that the current trend became to give environmental agencies the power to impose administrative fines, it could be implied that *an alternative to criminal law is needed to deal with this problem of 'under-enforcement' of environmental crimes*.

Whether administrative fines were indeed a good alternative to use was discussed theoretically in Chapter 6. In this chapter a simple model was developed to show which factors were relevant to assess whether administrative fines were welfare enhancing compared to using criminal fines. Administrative fines could act only as a complement to criminal sanctions in a sense that they substituted criminal sanctions for minor violations. For these violations harsh

and expensive criminal sanctions were not needed and would not have justified the high criminal enforcement costs. Based upon this analysis, it was suggested that *administrative fines could indeed be a welfare enhancing* (meaning more efficient than criminal fines) *instrument for minor violations*, but this would have been true only under certain conditions. *The relevant factors were the probability of detection and sanctioning, marginal enforcement costs and particularly the abatement costs and their distribution among firms*.

One condition for administrative fines to be welfare enhancing was that (1) there was a sufficient number of firms committing minor violations for which an administrative fine would have applied. Another condition was that (2) administrative enforcement costs (defined in Chapter 6 as the squared probability of detection and sanctioning multiplied by the marginal enforcement costs) were sufficiently low compared to the criminal enforcement costs. Because of the expected higher probability of detection and sanctioning of administrative fines, marginal administrative enforcement costs must be low enough to provide efficiency gains, as compared to using criminal fines. However, it was also debated whether enforcement costs differ greatly between criminal and administrative fines. As administrative fines were considered within the meaning of Art 6 of ECHR, at least in Europe, similar safeguards applied to them as to criminal sanctions. The conventional wisdom argued that administrative enforcement costs were lower than criminal enforcement costs, but this should be proved by empirical estimation. Thus, it might not be so straightforward to claim that the availability of administrative fines for those violations that do not merit criminal prosecution was desirable from the social welfare perspective. Nevertheless, practice seemed to show otherwise, as the trend became to use administrative fines.

Implications of the Analysis

Based upon the analysis, it could be implied that the differentiation between criminal and administrative sanctions made economic sense only with respect to the differences in procedure, stigma, and in the availability of imprisonment in criminal law. Imprisonment is available only under the criminal law with the primarily goal to incapacitate, which was

economically justified under the condition that the costs of imprisonment were outweighed by the benefits from incapacitation and deterrence. This was the case when monetary sanctions did not provide sufficient incentives (as discussed in Chapter 4), and when harm was so large that a severe sanction was justified.

Another reason why there should be two distinct systems was the procedure. Even though the procedural differences seemed to decrease, there were still important differences between the imposition of a criminal and an administrative sanction. These differences reflected the costs that needed to be borne by the government. In addition, procedural differences also justified why stigma should come only from a criminal sanction. *Therefore, one of the implications of this study was that in order to benefit from having two separate systems of laws, criminal and administrative, procedural differences should be maintained.*

Stigma and the declaratory function of criminal law was another differentiating factor. Even though stigma as a signaling device is difficult to manipulate and to measure as it is a non-legal sanction imposed by the society, it could still have economic justification. This was argued because stigma was seen as an extra cost to the offender, which did not tap government's resources. In addition, signaling a norm through criminalization could be cost-reducing if it decreased the information costs in a society with regard to 'learning' about social norms. *Hence stigma, with all the controversies about its effect, might justify the difference between criminal and administrative law from an economic perspective*.

Based on the model developed in Chapter 6, the society should have two differing systems of laws to enforce environmental violations in order to take advantage of the inherent efficiency gains, mainly coming from the enforcement costs, and the decreased level of harm. This suggested that the economic explanation for the use of the criminal law also boiled down to the fact that it should be reserved for the most serious violations, and hence in a way applied as last resort mechanism.

Chapter 1: Introduction

1.1 Introduction

Promulgation of an EU Directive in November 2008 on the protection of the environment through criminal law is asking the Member States to use criminal law to enforce several environmental regulations.[1] The reason given is to strengthen the compliance with the availability of criminal sanctions, "which demonstrate a social disapproval of a qualitatively different nature compared to administrative penalties or a compensation mechanism under civil law."[2] Historically, criminalization has been seen as a powerful tool to express condemnation with the most socially unacceptable acts, such as murder, rape or theft. An act done to further a criminal purpose and *mens rea* (intent) were among the requirements of criminalization, which cannot be said of criminal offences today. Among some examples of criminalization is the imprisonment of up to six months for the sale of perfume or lotion as a beverage, up to three months imprisonment for anonymously sending an indecent or 'suggestive' message, or countless petty offenses, traffic ordinances handled as serious offenses (Luna 2005: 703-743). What changed was that after World War II, the legislation increased enormously to regulate the new economic order, and new social-economic crimes were created. The "core" criminal law was extended by the "additional regulatory" criminal law, which created grey areas and the inherent distinction between administrative infringements and crimes became blurry. For example, releasing toxic substances into the water and a breach of administrative duties, such as failure to report, are both crimes in some jurisdictions, even though failure to report seems to have an administrative nature.

This so-called overcriminalization phenomenon, particularly in the area of "regulatory" crimes, brings forward a fundamental inquiry and the motivation for this thesis: why should criminal law be used at all to control these activities? More and more harmful activities are regulated by

[1] Directive 2008/99/EC of 19 November 2008, Official Journal L328/28 of 6 December 2008
[2] Ibid

criminal law, such as the aforementioned environmental violations, even though it is the most coercive and expensive instrument to use. The bottom line is that the rationale for using criminal law is not always clear.[3] Rather it seems that the evolution of criminal law depends on the cultural and political development throughout history. Certain acts have been criminalized before but are not now, and *vice versa*[4], and certain acts are criminalized in one country but not in another.[5] Thus, it is important to ask why enforcement through criminal law should be used at all. In other words, what are the comparative advantages of using criminal law to legal alternatives, such as private or administrative law?

This research focuses exclusively on the repertoire of available enforcement mechanisms for disputes concerning the actions of private parties. Hence, I look at the situations where an individual (or a legal entity) committed a violation of law, which then needs to be enforced via civil, criminal or administrative law channels. The systems vary greatly across jurisdictions. Neither substantive nor procedural rules will be discussed in detail. It is sometimes difficult to make a clear distinction between the different types of enforcement mechanisms because rarely does one type of law work independently from another. There is no black and white distinction between criminal, civil and administrative law enforcement, but I observe three systems with different characteristics, particularly with regard to the goals, procedure and the sanctions available. Hence, it is important to evaluate the need for enforcement through criminal law in collaboration with these other types of law, which also aim at controlling harmful behavior. The focus will be particularly on the scope of criminal and administrative law enforcement, as both mechanisms work hand in hand within the public law enforcement. Both are enforcement instruments in the hands of the state agencies, such as police, prosecutors, judges, and administrative authorities and agencies. Both aim at protecting and furthering public interest by reacting to infringements via the imposition of sanctions and reparatory measures, or by proactively regulating potentially harmful behavior via monitoring and

[3] This has been argued on the example of English criminal law by Ashworth (2000: 225-256).
[4] For example the decriminalization of alcohol in the United States, and criminalization of insider trading in Italy, and in many other legal systems.
[5] For example the criminal law is used for environmental pollution in the UK, while administrative law is primarily used in the Netherlands.

requiring permits. The main difference between the two from a legal perspective is based on the principle of legality. It is a legislative decision to classify a certain act as a crime or merely as an administrative infringement. The main factors comprise the level of harm, the symbolic value, historical development and public interest. The main goal of criminal law is to punish, deter and stigmatize (Ashworth 2000: 225-256).

Administrative law within the scope defined here deals primarily with the relationship between the citizen and a governmental agency with regard to the regulatory issues, such as issuing of permits or forcing individuals to compliance by way of administrative measures, such as for example stop or enforcement notices in environmental law. The main goal of administrative law is to prevent or stop the harmful activity. Most measures are therefore reparatory. Even though the goals seem to diverge, one type of administrative sanctions, namely administrative fines aim also at punishment and deterrence (Seerden and Stroink 2007: 419). Therefore, a special attention will be given to the need for administrative and criminal fines and their goal of deterrence. What exactly is their difference, if any? Particularly, why and when one should be used and not the other? Because of their similar function, even for administrative fines similar safeguards apply as in criminal law. For instance an administrative fine is understood within the meaning of a criminal charge falling under the Article 6 of the European Convention on Human Rights (ECHR).[6] This provision provides minimum requirements for the imposition of a sanction, such as for example the right to a fair and public hearing within a reasonable time by an independent and impartial tribunal. Even though this requirement decreases the difference between administrative and criminal sanctioning with regard to fines, there are still important procedural differences between the two. Criminal law still has stricter requirements such as requiring the presence of a lawyer from the beginning of the procedure, it offers more powerful and intrusive investigative opportunities, or requires a suspect in order to start a criminal prosecution. And it is the judge or jury who has to impose the criminal sanction, unlike it is the administrative authority in case of administrative fines for violations committed by natural or

[6] ECHR 21 February 1984, Vol. A. 73 (Ozturk); ECHR 25 August 1987, Vol. A. 123 (Lutz); ECHR 24 February 1994, Vol. A. 284 (Bendenoun)

legal persons.[7] The presence of an independent judge might be needed particularly for certain offences, such as for example corruption, where the degree of independence from the executive (governmental bodies) would be relevant.[8] Moreover, the appeals procedure can differ for criminal and administrative tracks. Another peculiarity of criminal law is the availability of imprisonment as a criminal sanction, and the stigma effect, which does not exist in administrative law.

These differences, even though sometimes vague and blurry, make it a relevant case to assess whether there is an economic justification for this differentiation, when the goal is deterrence. Even if in practice the distinction is rather legal and naming certain acts as crimes or administrative offenses is less relevant from an economic point of view, it is important to develop an economic normative framework in order to explain why a certain act is classified as a crime while another as an administrative infringement, which seems not to be done by the legal scholarship. Thus the goal of this research is to see whether there are economic reasons for this differentiation, particularly with regard to the use of administrative fines, and under which conditions one enforcement instrument should be preferred to another. The economic theory provides for a benchmark according to which different legal instruments can be evaluated. This benchmark is economic efficiency. Hence enforcement through criminal law should be used when it is the most efficient instrument to use. The normative framework will be applied to environmental law. In environmental law in many legal systems, administrative enforcement goes hand in hand with criminal enforcement. Therefore, conditions will also be examined under which administrative law enforcement, namely administrative fines, is socially desirable from a deterrence point of view, not reparation.

[7] Obviously, the body that imposes an administrative sanction can vary across jurisdictions. In France and some other countries, for example, there are specialized administrative courts, which are separate from the general courts. However, these are mainly used for disputes concerning the exercise of public power, i.e. to check whether official acts are consistent with the law. This thesis focuses on disputes that arise from a violation by a private party. Nevertheless, for example in Lithuania, administrative courts can be used by private parties for appeal.
[8] Within public administration, administrative bodies might be part of the executive branch, but could also exist as independent administrative agencies, such as for example in the United States.

1.2 Relevance

There is a vast amount of literature in this field researching why society uses criminal law to control harmful behavior. However, there has been less attention paid to the aforementioned fundamental question of the scope of enforcement through criminal law and other enforcement mechanisms, such as administrative law. Different approaches have adopted different areas of focus. Criminal legal theory has focused predominantly on (1) the elements of the criminal act such as the *mens rea* (guilty mind), (2) the principle of legality, meaning that the criminal act has to be defined *ex ante* by the legislator, and (3) the fundamental principles and functions of the criminal law defining it as the best instrument to reach these goals (Ashworth 2006: 536; Ashworth and Redmayne 2005; Allen 2005: 534). Several scholars such as Ashworth and Hulsman have addressed the issue of criminalization and questioned the rationale for using criminal law (Ashworth 2000: 225-256; Ashworth 2006: 536; Hulsman and De Celis 1982; Hulsman 1972: 80-92). Continental European scholars have also touched upon the question why administrative fines have developed in certain jurisdictions (Hartmann and Van Russen Groen 1998; De Doelder and Tiedemann 1996). However, the aim of this scholarship is not to explain under which circumstances and why criminal law is the most efficient instrument to use.

On the other hand, criminology has traditionally adopted a 'science of a criminal' approach pointing out the causes of crime and what factors distinguish criminals from non-criminals and why. Nevertheless, the labeling perspective and conflict theories, among others, have attempted to indicate why society uses criminal law (Maguire 2002: 1248). The labeling perspective argues that it is the society that "labels" an act criminal, which makes someone become a criminal because s/he engages in these activities. Within the conflict theories, criminalization is seen as a result of a conflict among numerous interest groups (Vold, Bernard, and Snipes 2001: 352). For the radical criminologists, this conflict arises because of the social class struggle (Burke 2001). More recent criminological scholarship also discusses the possible ways how to enforce violations and whether this is effective, including the application to the

behavior of corporate actors (Struiksma, De Ridder, and Winter 2007; Faure 1995: 446-479). However, it is debated whether the whole use of criminal law can be explained in terms of a social conflict, and the criminological perspective does not address the efficiency of the different enforcement instruments.

Economic literature has also addressed this question in several studies. Unlike the moral and principled approach of the legal theories, a more pragmatic and calculative (cost-benefit) approach has been taken by economists. Economics of criminal law enforcement has been evaluating the need for criminal law by looking at the incentives it provides for potential offenders. Put differently, it looks at the deterrent effects of criminal sanctions and how to design sanctions optimally in order to maximize social welfare. Social welfare is defined as the total benefits of having a certain enforcement mechanism in place minus the total costs this mechanism entails. The main goals of criminal law from an economic perspective have been (1) to attach a sanction, not a price as in torts, payable to the state (Cooter 1984: 1523-1560), (2) to compensate for the low probability of detection and a high level of damage by deterrence (Posner 1985: 1193-1231), (3) to attach a nonmonetary sanction, which increases the deterrent effect (Polinsky and Shavell 1984: 89-99), (4) to reduce the error costs of convicting an innocent (Miceli 1990: 189-201), and (5) to create a stigma (Rasmusen 1996: 519-543).

However, most of the relevant literature has focused on the optimal choice between public and private enforcement (Posner 1985: 1193-1231; Polinsky and Shavell 2007: 2 v. (xxii, 1738 p.); Polinsky and Shavell 2000: 45-76; Shavell 1993: 255-287). Public enforcement is usually understood solely in terms of criminal law enforcement, ignoring the availability of administrative sanctions.[9] Economic literature did not really pay attention to the differentiation between criminal and administrative sanctions. As mentioned earlier, maybe the reason for it is the fact that from an economic perspective, there seems to be not that much of a difference, whether a sanction is called criminal or administrative if the goal is deterrence. It is seen merely

[9] Cooter (1984: 1523-1560) distinguishes between regulation and criminal law, however, his focus is on determining whether these activities are “priced” by the law (in a sense allowed if a price is paid) or “sanctioned” (prohibited).

as a cost to the offender that creates incentives to comply. The difference comes mainly from the legal perspective where violations are classified as crimes or as administrative infringements. However, it is argued that there still exist significant differences between these two legal systems, which can have an economic justification, and this research will investigate in more detail whether this is true. This gap provides space for a significant contribution into the field, as many violations, particularly regulatory offences, are enforced through the complementary use of these two enforcement mechanisms.[10] Understanding the circumstances under which it is more socially desirable to use one rather than the other and their scope is of major importance for the policy makers as well as for scholars. Regulatory authorities and courts do work hand-in-hand, and hence the coexistence of criminal and administrative law cannot be ignored.

1.3 Research Question(s) and Purpose

The question that needs to be asked to fill the gap in the literature is why, from an economic perspective, some activities should be subjected to criminal law enforcement and not to other legal alternatives, such as for example enforcement through private or administrative law.[11] It is important to make a distinction not only between private and public law remedies but also to be aware of the fact that public law remedies might have a non-criminal nature, such as the aforementioned administrative sanctions. Therefore, the comparative advantages of the criminal law enforcement have to be analyzed also relative to these other remedies, developing criteria for criminalization contrasted to the criteria for regulation. In addition, besides outlining the circumstances under which criminal law is needed, it is also important to find the conditions under which administrative law, namely administrative fines, which also have a deterrent effect, might provide more efficient remedies. This is due to the fact that administrative sanctions might be cheaper to impose and hence have a cost-effective comparative advantage

[10] By complementary use I mean that a range of violations is enforced via criminal law while another range of violations via administrative law. I do not mean that criminal sanctions are imposed on top of administrative sanctions for a certain violation.

[11] With regard to private law, the focus will be on tort law, and not on contract law, because the focus is on the enforcement of harmful conducts to which torts belong.

vis-à-vis criminal law sanctions. In other words, it is important to determine the scope of criminal and administrative law enforcement, particularly in cases when both are used complementary.

My research question can therefore be stated as follows:(Becker 1968: 169-217)

'Why should society use enforcement through criminal law and when should there be a role for administrative law?'

More particularly,

- *What are the economic criteria for criminalization as opposed to relying on private and administrative law remedies?*
- *Is there a scope for administrative law sanctions, namely administrative fines, and if yes under which conditions?*

To explain more precisely, it will be investigated whether there is an economic justification for the need of enforcement through a criminal law system, and what factors make it different from the enforcement through a private and administrative law system. More particularly, the focus will be on public law enforcement, and on the scope of criminal and administrative sanctions. This will provide insights into the circumstances under which criminal sanctions (or administrative sanctions) are the most efficient instrument to use. To gain better understanding into these questions, the application to environmental law will be made. This is a wonderful area of law not only because the protection of the environment should deserve everyone's attention, but also because it offers great comparative opportunities. The scope of criminal and administrative enforcement of environmental law varies greatly across countries, which offers important insights into the theoretical debate conducted in this research.

1.4 Methodology

The research question has two parts: first, it tries to find out why society needs criminal law enforcement, and hence what the critical factors for criminalization are. This part of the question will be answered using three theoretical perspectives, namely criminal legal theory (Chapter 2), criminology (Chapter 3) and particularly economic theory (Chapter 4). It should be noted that the goal of this research is not to provide an in-depth analysis into the criminal legal theory and criminology. Only the apparently most relevant points are selected and discussed. The main findings on the economic criteria for criminalization will be summarized in Chapter 4. The main methodology used in this research is law and economics. Taking this approach allows to evaluate the different enforcement mechanisms according to the normative criterion, efficiency. Efficiency means that a certain enforcement mechanism is effective in reducing social losses in question and at the same time it does so at the lowest possible cost. Hence, the main purpose of this research is to evaluate the comparative advantages of the use of criminal law *vis-à-vis* other legal remedies based on the efficiency criterion. Put differently, the costs and benefits of criminal, private and administrative sanctions will be evaluated according to their impact on social welfare within the deterrence framework. The analysis is normative, as it tries to suggest when criminal law enforcement should be applied. However, it will be also looked at how closely the normative criteria correspond to reality, which shows some positive elements as well.

Once it is established under which circumstances criminal law enforcement is needed from an efficiency point of view, this framework will be applied to environmental harm (Chapter 5 and 6). In environmental law, violations can be enforced through criminal as well as through administrative sanctions. This provides a great opportunity for comparative analysis as there is a great variation among countries with regard to using these enforcement mechanisms (Chapter 5). There are jurisdictions, which rely predominantly on criminal law (until recently, the UK and the Flemish Region), while other countries (such as the Netherlands and Germany) complement criminal sanctions with administrative ones. Therefore, some enforcement data is

collected and analyzed for these four jurisdictions to see the variation in the enforcement practices and whether there is a role for administrative law remedies, such as administrative fines, to provide sufficient deterrence. The main sources used are the annual enforcement reports of the environmental agencies and other publicly available information on their websites. The data availability is limited and not comparable across jurisdictions, but this is the *status quo* and it should not be an obstacle to nevertheless do an analysis since it still offers important insights. Given a thorough comparative analysis is not possible, the conclusions derived from it have to be taken with consideration. In addition, it is also important to see whether this complementarity makes sense from an economic perspective. Thus the second part of the research question will be answered by theoretically specifying conditions under which the use of administrative fines would be welfare enhancing, and hence would have an economic justification (Chapter 6). A simple theoretical model is built taking into account the benefits and costs of environmental violations, showing relevant factors that have to be taken into account when optimizing sanctioning mechanism.

1.5 Scope of Research

First, the scope of this research is limited to an economic explanation of criminalization. As mentioned above, the criminal legal theory and criminology are outlined very selectively and briefly. The focus will be on the cost-benefit analysis of various enforcement instruments based on the criterion of efficiency. It is acknowledged that the argument could be developed for many other justifications for criminalization, such as historical, moral or political; however, this will not be dealt with in this research. Particularly public choice theory might provide important insights by explaining criminalization as an interaction among interest groups in a society. Legal culture or path dependency could also be potential explanations of criminalization. These theories take more of a positive approach to explain the use of criminal law, while this thesis will take a more normative approach. The literature on the expressive function of criminal law will also not be discussed in great detail. The criterion of efficiency is sometimes debated (and rejected as a goal of criminal law), particularly in legal scholarship. This is because the focus lies

more on the individual and his protections (all violations should be punished), rather than on society as such (punishing only violations where the benefits outweigh the costs). Nevertheless, a cost-benefit analysis and the criterion of efficiency is more and more used in public policy making, such as for example at the European Union level. The majority of the European Commission policy proposals have to go through economic impact assessments in order to determine whether the proposals, which might become EU legislation, would be worth to enact from a societal perspective. For all these reasons, this research takes the approach of law and economics, which accepts efficiency as a goal of criminal law, and the fact that those violations, which are welfare enhancing, for example in terms of higher production output, should not be punished.

Secondly, as already mentioned, the scope is limited to the enforcement issue, which means that the main aspect this research looks at is how to deal with violations – the sanctioning process. Namely, the enforcement process of environmental law will be looked at. Neither substantive nor procedural rules of criminal, private and administrative law are going to be discussed. Private law enforcement is discussed only to the extent to justify public law enforcement. Private law remedies in environmental cases are not going to be looked at. Moreover, I will be doing the analysis predominantly within the deterrence framework, which means that sanctions, which aim at deterrence rather than compensation and reparation, will be mainly discussed. Neither goals of criminal law, such as retribution or incapacitation, are going to be elaborated on in detail.

Next, the application to environmental law does not look into any specific type of violation, such as waste, water, air, soil or whether it is a breach of a permit or dumping of a toxic waste. It discusses these environmental violations at a general level, classifying them into different levels of harm, such as minor or serious. Furthermore, it does not discuss the role of private law in protecting the environment. Private parties can be involved by for example suing for personal damage due to pollution. Neither do I discuss market-based instruments, such as emission taxes or tradable permits. These are indeed widely used, maybe even preferred to the

so-called command-and-control instruments, but this does not make the reliance on criminal and administrative sanctions any less relevant, as enforcement is relevant even for the market-based instruments. What this thesis focuses on is the public law remedies, where it is the state body which is responsible for the enforcement of environmental regulations. The reason for this choice is the fact that public regulation does play a great role in protecting public interests, such as the environment and has a great impact on the functioning of the entire economic environment.

The availability of enforcement data also limits the scope of this research. The data is not sufficient to conduct a thorough comparative analysis, but it can illustrate the main argument on the scope of criminal and administrative law enforcement. The model presented in Chapter 6 is also a simplification of reality; however, it still depicts factors, which are relevant when designing optimal enforcement policies.

1.6 Structure

This dissertation is organized as follows: Chapter 2 presents the different views in the traditional criminal legal theory on why criminal law is used in society. The distinction is made between the elements of the criminal act and the legality principle as well as the goals and principles of the criminal law and their relevance to the criminalization debate. Legal criteria justifying the use of the criminal law are discussed, such as the principle of individual autonomy, the welfare principle, the principle of harm and the principle of morality. In addition, also the development of administrative fines is touched upon.

Chapter 3 discusses the criminological theories, particularly the so-called 'victimized actor model' theories, where criminalization is seen in terms of a societal power struggle between various groups. The labeling perspective argues that a behavior itself is not inherently criminal but it is the society that labels it as criminal. Conflict, radical and critical criminologists have all elaborated on this issue, whose views will be presented in this chapter.

Chapter 4 analyzes what the economic perspective has to say on the goals of criminal law. The need for private versus public enforcement will be discussed, as well as the trade-offs between criminal and administrative law enforcement. Four criteria for criminalization are suggested, namely the nature of the harm, low probability of detection, stigma and the enforcement costs, which create a theoretical framework justifying the use of criminal law. This normative economic framework explains why society should use criminal law remedies compared to the other alternatives, such as private or administrative law remedies.

In Chapter 5, the theoretical discussion developed in Chapter 4 is applied to environmental law. It is shown that the criteria discussed in Chapter 4 apply to certain environmental violations, hence criminal sanctions are needed for these offenses. To provide an illustration of how the enforcement of environmental law works in practice, four countries and their enforcement mechanisms are comparatively analyzed. The enforcement data is collected from the reports and other publicly available sources, such as the percentage of criminal and administrative actions taken by the environmental agencies, the number of inspections, the prosecution rate and the average level of fines imposed. This data is then analyzed in order to provide insights into whether criminal law enforcement alone is sufficient, and whether there is a scope for administrative law enforcement, particularly administrative fines, in addition to criminal sanctions.

In Chapter 6, a further step is taken to evaluate the need for administrative fines by building a simple theoretical model to show the factors, which are relevant in assessing when administrative fines are welfare enhancing in addition to using only criminal fines. This is a static model, focusing only on monetary fines and disregarding stigma and reputational effects coming from a criminal sanction, as well as non-monetary sanctions. However, it is very useful in showing all the dynamics between the potential violator and the enforcement agency and its impact on social welfare under the two enforcement regimes, criminal fines only and the complementary use of criminal and administrative fines.

In Chapter 7, final conclusions of this research are drawn by answering the research questions of this thesis. In addition, limitations and implications for further research are discussed.

Chapter 2: Criminal Legal Theory: Why Criminal Law?

2.1 Introduction

What is criminal law? Defining 'criminal law' is not always an easy task. The simplest definition states that "criminal law is the body of law dealing with crimes and their punishment".[12] However, due to its constant evolution across time and space, there is no clear definition of what constitutes a crime. As such, it often seems that the boundaries of criminal law are historically contingent, determined by the evolution of political power and public interest, and dependent on the discretion of the enforcers. The formal definition states that "in short, a crime is an act capable of being followed by criminal proceedings having a criminal outcome (Williams 1955: 107-130)." Crimes involve rights which the state has a duty to protect as individuals cannot protect themselves against infringements and which cannot be redressable only by compensation (Allen 1931:233-234). According to Ashworth, to criminalize a conduct is to declare it should not be done, to institute a threat of punishment in order to supply a pragmatic reason for not doing it, and to censure those who nevertheless do it (2006:22). Which conduct becomes a crime is bound by the principle of legality. Put differently, the law, and more particularly legislation, determines what a crime is. Hence, from the legal point of view, a conduct is a crime and criminal sanctions apply if it has been classified as a crime in the relevant body of law. Similarly, administrative law sanctions apply to acts, which have been classified as administrative infringements. Hence, from a legal point of view, the decision to enforce through criminal or administrative law is clear. Whether it has any principled justification will be examined in this chapter. Society has indeed attributed specific functions and goals to criminal law. Among the most important are deterrence and punishment. In addition, legal scholarship has formulated several legal criteria for the use of criminal law. Furthermore, the existing literature also discusses the reasons for the development of administrative penal law (and its administrative fines).

[12] WordNet, A lexical database for English, Princeton University, <http://wordnetweb.princeton.edu/perl/webwn>, last accessed September 8, 2010

This chapter will explore these issues in more detail. However, it provides only a background to the rest of this dissertation, which focuses mainly on the economic explanations. An in-depth analysis is hence not given. The chapter gives a brief introduction based on the existing legal literature into why society should criminalize certain acts. The focus is strongly on the English and Dutch literature (due to language skills), but I do realize there may be differences between legal systems where other issues are discussed.

2.2 What is Crime: Distinguishing Characteristics of a Criminal Act

When discussing what constitutes a criminal act, the distinction has to be made between formally required elements (*actus reus* and *mens rea*), and elements defining a criminal act. *Actus reus* (or prohibited conduct) comes from the principle of legality, which states that the behavior must be defined as criminal in the statutes *ex ante* (discussed in section 2.3). *Mens rea* (or guilty mind) requires, at least formally, some form of intent on the side of the wrongdoer (section 2.2.2). This section identifies four elements, which define a criminal act.

2.2.1 Harm

One of the main philosophical conditions for the use of criminal law is the presence or a threat of harm. This harm should be substantial and at least in part public, unlike in torts where the nature of harm is private. The word 'substantial' is what stresses the importance of the need for criminal law. However, it is not clearly defined and hence at the discretion of the legislator to determine whether a particular harm is substantial. It is clear though that harms causing death or serious injury qualify as 'substantial'. Crimes are public wrongs even though the body or property of an individual is infringed, as these are seen as "wrongs against the community to which the individual belongs" (Marshall and Duff 1998:21). This focus on individual was the major differentiating factor between a crime and an administrative infringement. However in practice, this distinction has blurred with the spread of administrative law into areas where private interests and harm to others are at stake (Weigend 1988:25). Moreover, torts might also have a public dimension. For example in environmental law, private suits might arise with

regard to noise or pollution of a private property, which could also affect the community at large. Criminalizing regulatory offences, such as in the area of financial markets or environment further blurs the distinction between harms that fall under the criminal and administrative law.

The requirement of an "act" leading to harm is however, challenged by certain crimes, such as state of affairs, possession or omission, where the harmful "act" has not *per se* taken place. Another disputed area is corporate criminal liability where it is still doubtful whether companies can "act". However, the judicial system showed no problem with holding them liable for omissions or public nuisance (Ashworth 2006:114; Wells 2001). Corporate criminal responsibility can be seen as a response to the negative impact of corporate activities on individuals and the society at large. Companies can derive benefits from unlawful activities. Environmental disasters such as the 2010 BP oil spill in the Gulf of Mexico require severe action to be taken. Nevertheless, in practice, the imposition of criminal liability of legal persons to which companies belong is still disproportionately lower than of the liability imposed on natural persons (Ashworth 2000: 225-256; Ashworth 2006:113-122; Nelken 2002: 23). In some jurisdictions, such as in Germany, corporations still cannot be held criminally liable. Even though many exceptions can be seen in practice, harm is still a normative criterion for criminalization according to the legal theory.

2.2.2 Intent/ Guilty Mind (*mens rea*)

Another (crucial) element defining a criminal act is intent. There must have been an intention to do a crime, the so-called *mens rea* (Allen 2005: 534). The principle of *mens rea* states that the defendants should be held criminally liable only for events which they intended or knowingly risked; and this 'subjective' liability should be judged based on the facts as they believed them to be (Ashworth 2006:86). This is also the reason why corporate criminal liability met with so much opposition, since companies, which do not have soul, cannot act intentionally. However, intent seems to be the basis for liability also in German administrative penal law (Weigend 1988:26). In civil wrongs, there is generally no need to prove intent (only negligence under the negligence rule), except when the court wants to impose punitive damages, which award

compensation above the damage done. Punitive damages are mostly awarded in the United States, and only in rare occasions in European civil law countries. Nevertheless, despite the fact that criminal liability should require *mens rea*, many offences, particularly the regulatory or minor offences[13] are strict liability crimes requiring no fault element (Ashworth 2000:230). Then, the question is what makes them different from non-criminal wrongs and should these strict liability crimes really be criminalized? In many instances, both, criminal and private sanctions are imposed.

As already suggested, there are many levels of "fault" in criminal offences, varying from intentional to strict liability crimes.[14] Most common types of *mens rea* are: (1) intention (deliberate causing of harm), where the defendant intended and recognized that the *actus reus* was a virtually certain consequence of his actions; (2) recklessness (conscious disregard for risk) – to foresee but to not intend harm, where the risk to do the act is unreasonable (what is reasonable is to be defined objectively); (3) knowledge - only suspecting some goods were stolen is not enough to prove offence, the defendant must know they were stolen; and (4) negligence (failure to take care) where there is no presumption about the defendant's state of mind, rather it is about carelessness, thoughtlessness and unreasonableness of the defendant's behavior (on mens rea, see chapter 5 in Simester and Sullivan 2000). Offences that have no *mens rea* element are strict liability crimes (on strict liability crimes, see chapter 6 in Simester and Sullivan 2000), which require proving only *actus reus* (guilty act). However, should not all crimes require at least some intent on the side of the offender in order to differentiate them from administrative infringements? Arguments put forward in the literature state that sometimes requiring *mens rea* is not appropriate, and that regulatory offences are intended to be of strict liability (Simester and Sullivan 2000:161). This is because strict liability simplifies prosecution particularly in specialized activities and industries where there is information asymmetry between the defendant and the prosecutor (Simester and Sullivan 2000:162). It is particularly, *mens rea* that can help differentiate between "regulatory" and "truly criminal" offences, where the distinction is sometimes difficult to draw (Simester and Sullivan 2000:162).

[13] In English criminal law strict liability is restricted to minor offences, see Simester and Sullivan (2000:14-15).
[14] On the different varieties of fault, see Ashworth (2006:164-191).

However, others would argue that this association of "regulatory offences" with no *mens rea*, and "real crimes" with *mens rea* requirement is not as clear cut as it seems (Lacey 2002:271). Abandonment of *mens rea* in criminal offences hence further blurs rather than distinguishes the reasons for criminalization.

Among others, arguments in favor of abandoning a full *mens rea* requirement are to protect the society against carelessness, to deter people from being careless by the threat of a criminal liability, for example also with regard to regulatory offences, or to protect against risks (Simester and Sullivan 2000:169). This goal might be easier sustainable with strict liability crimes (or where proving negligence is sufficient) as intent requires a higher standard of proof (Simester and Sullivan 2000:169). Thus, it makes it cheaper, faster and easier to deal with the offences. As one Court accurately pointed out, "where one deals with others and his mere negligence may be dangerous to them, as in selling diseased food or poison, the policy of the law may, in order to stimulate proper care, require the punishment of the negligent person though he be ignorant of the noxious character of what he sells" (Lerner and Yahya 2007: 1383-1416). As such, strict liability crimes can be justified, however, the problem is that this undermines the moral authority of criminal law (Robinson 1996:212-214).

2.2.3 Punishment

Another specific element of a criminal act is the (risk of) punishment. There are different kinds of punishment for different types of criminal offences (Ashworth 2010: 502). Unlike private law sanctions, where the aim is to restore the *status quo* for the victim and the suit is brought by a private party, in criminal law the punishment derived from sanctions does not directly benefit the victim and the prosecution is brought by the state (on English criminal law, see Ashworth and Redmayne 2005). As such, private law sanctions are imposed without censure and are not regarded as punitive. In administrative law enforcement, the main goal of administrative measures is to stop the harmful activity and restore compliance (Seerden and Stroink 2007: 419). For example in environmental law enforcement, stop notices, administrative orders or even suspension or revocation of licenses all aim at forcing the offender to return to

compliance rather than to punish him. These are reparatory measures. Nevertheless, administrative fines are viewed as punitive, which make them similar to criminal fines. This does not make punishment unique to criminal law. Under criminal law, besides fines, there exists imprisonment or even execution, which cannot be found under private or administrative law.

2.2.4 Standard of Proof

Lastly, the standard of proof required by law to prove a criminal offense is regarded as another distinguishing element of crime. In a criminal suit, the standard of proof is considerably higher than in a private law suit or in an administrative proceeding. For example in the United States, the prosecutor must prove the case 'beyond a reasonable doubt', while in a private suit, 'proof by preponderance of the evidence', a weaker standard of proof is sufficient. Similarly, in administrative law, a less strict standard of proof than in criminal law is needed (on Germany, see Weigend 1988:24). Historically, the goal of criminal law with its strict safeguards was meant to protect the individual against the malevolence of state. The reason for a higher standard of proof in criminal law is that it adds a sentence, and thus there is a need to ensure better protection of rights of the defendant (Ashworth 2006: 536). Thus there is a trade-off between the protection of an individual and the likelihood of her conviction. A lower standard of proof offers less protection and by definition a higher probability of conviction. However, if private or administrative sanctions are severe (assuming in certain circumstances they could be), then the question is whether the safeguards should not be similar to those of criminal law (Ligeti 2000:206). With regard to administrative fines, as mentioned in Chapter 1, because these are regarded as punitive, they fall under the article 6 of the European Convention of Human Rights (ECHR), which applies to criminal charges. Article 6 specifies the minimum requirements that have to be met before the defendant is convicted of a criminal charge. Despite this similarity, there still exist procedural differences between administrative and criminal proceedings, which make the imposition of a criminal sanction more difficult. The person has to be a suspect before any prosecution can be started, while in administrative proceedings in general the administrative authority can initiate the process once a violation has been observed. The

preparation of a file as well as the investigative opportunities, such as a search warrant, increase the requirements needed for a criminal charge. This all makes the standard of proof a distinguishing element of criminalization.

To sum up, four characteristic elements of a crime have been discussed in the above section, distinguishing a crime from torts or administrative wrongs. In practice, these distinctions are not as clear cut as they seem. The only 'unique' element of the criminal law system seems to be the higher standard of proof required by the law.

2.3 When is a Crime Crime: The Principle of Legality

The principle of legality, *nullum crimen sine lege*, means that there is "no crime without law". In other words, the criminal act must be defined *ex ante* by the legislator and must be known to the offender, *lex certa*, before criminal sanctions can be imposed. Besides other sources, this principle can be found also in the European Convention on Human Rights, Article 7: "no one should be held guilty of an offence on account of any act or omission which did not constitute a criminal offence under national or international law at the time when it was committed". This principle also prohibits retroactive criminalization, therefore, an act must be defined as criminal before a person can be held criminally liable for it (Ashworth 2006: 536). Allowing retrospective criminal liability would contradict the rule of law (Simester and Sullivan 2000:26). In order for the law to have a deterrent effect, the rules must be fixed, predictable and clear (Simester and Sullivan 2000:28-29). The same principle applies to administrative law. Administrative infringements must be defined *ex ante* in the law (Seerden and Stroink 2007: 419). The administration must have the authority to execute the law. With regard to administrative enforcement, administrative sanctions can be imposed by administrative authorities only if provided by the law and in case of coercive administrative acts (Seerden and Stroink 2007: 419). For example in case of environmental law, not all jurisdictions have given the power to the environmental agencies to impose administrative fines, which are regarded as punitive.

Hence, according to this principle, when criminal sanctions should apply highly depends on whether the legislature has made an act a crime. Similarly, the degree of administrative power to impose administrative sanctions depends on the decision of the legislature to confer this power upon the administration. According to which criteria does the legislature decide which acts to criminalize or how much power to confer upon the administration? Ashworth argues that the main determinants of criminalization are political opportunism and power, linked to the prevailing political culture of the country; in other words, harm, wrongdoing and offence are melted into the political ideologies (2006:52). Creating a new crime, for example from an administrative infringement, signals the government's willingness to tackle the problem with stricter enforcement, even if criminalization might make little sense. Among the factors taken into account when creating a new criminal offence are: the seriousness of harm, the availability of remedies under the existing legislation, enforceability in practice, the clarity of the offence and the proportionality of the penalty with the seriousness of the offence (Ashworth 2000:229). Giving more power to the administration also seems to depend on whether the legislature deems it necessary. An example from environmental law shows the trend is towards enhancing the sanctioning powers of the administration in order to deal with the problem of insufficient enforcement under the criminal law system (Hartmann and Van Russen Groen 1998; Hartmann, Van der Hulst, and Rogier 2002).

To sum up, the legality principle is a formal legitimization of criminal law as it clearly classifies which acts are crimes and which are not. However, it does not aim to answer the question why the legislator chose to criminalize a particular conduct but not another in the first place (Bowles, Faure, and Garoupa 2008: 389-416; Bowles, Faure, and Garoupa 2008: 389-416). The reasons stated are rather vague and are mostly based on pragmatic reasons, such as the practicability of using a certain enforcement instrument.

2.4 Functions and Goals of Criminal Law

By far the greatest attention in the English and continental European criminal legal literature so far has been paid to the functions and goals of criminal law and its role in society. Among the main aims of the criminal justice system are said to be the "reduction in crime, maintenance of public safety and good order, delivery of justice through effective and efficient investigation, prosecution, trial and sentencing, effective execution of sentences so as to reduce re-offending and protect the public" (Ashworth 2010:59-60). In short, the principal function of criminal law is to censure persons for wrongdoing, followed by a conviction and a sentence (Ashworth 2000:232). In general, the goals the public officials aim to achieve through the use of criminal law could be classified into six categories: deterrence, incapacitation, rehabilitation, restoration, reparation and prevention. Since some of these goals can be reached by private or administrative law, it is still not clear why society should need *per se* criminal law.

2.4.1 Deterrence

The most attention in the criminal legal literature as well as in other legal scholarship has been given to deterrence (individual as well as general). The purpose of individual deterrence is to deter one particular person from re-offending, and here the propensity to re-offend, not the gravity of the offence is the main determinant of the sentence (Ashworth 2010: 502). General deterrence seems to have a higher societal value, as the goal is to deter other people from committing that kind of offence. Deterrence has been given as the main justification for punishing individuals, and hence the main reason for invoking criminal sanctions. As Jeremy Bentham stated, "all punishment is pain and therefore should be avoided, however, punishment might be justified if the benefits (in terms of general deterrence) outweigh the pain inflicted on the offender punished and if the same benefits could not be achieved by non-punitive methods" (1823). However, the major assumption here, as well as in the economics of crime literature, is that people are rational and will adjust their behavior according to the disincentives provided by the punishment, which is sometimes criticized (Ashworth 2010: 502). In addition, critics of deterrence as a justification for the use of criminal law argue that there

may be an over-estimation of the efficacy of deterrence (Ashworth 2006: 536; Burney et al. 1999; Jareborg 1988). Furthermore, the empirical grounds for deterrence are also disputed (Ashworth 2010: 502). The goal of tort liability and of administrative sanctions, particularly of administrative fines is also deterrence. Hence, it can be implied that the goal of deterrence is not unique to criminal law.

2.4.2 Prevention

Related to the deterrence objective, prevention of crime has also been described as a justification for a criminal justice system (Ashworth and Redmayne 2005). Deterrence and prevention are mentioned in the literature as two separate goals of criminal law, however, they seem to be very similar. Braithwaite and Fisse argue for prevention of harm as the main function of criminal law (1994: 290), however, Ashworth thinks this "is not a reason for shaping the criminal law as it would lead to an unacceptably distorted system in which the prospects of effectiveness and prevention, not the seriousness of the wrongdoing would determine decisions to criminalize, to prosecute and to determine the penalty" (2000:250). In other words, other criteria than merely prevention of crime should be considered when deciding whether to criminalize a certain conduct or not. Besides, one function of administrative law is also prevention. Requiring permits, and in general the proactive role of regulation, tries to prevent harm from happening rather than to react to it.

2.4.3 Incapacitation

Another (particular) goal of criminal law is incapacitation (chapter 3 in Ashworth and Von Hirsch 1998). By detaining and imprisoning offenders, they are made incapable of offending for substantial periods of time (Ashworth 2010: 502). This is a very effective means to prevent future crime by repeat offenders, but it is too expensive to maintain. The main criticism, within empirical and principled objections, is that also non-dangerous offenders are incapacitated, which is unnecessary and undeserved (Ashworth 2010: 502). Neither private nor administrative law can use this type of sanction, which makes imprisonment unique to criminal law.

2.4.4 Rehabilitation

Supporters of rehabilitation as a goal of criminal law favor 're-socialization' of the offender over punishment (chapter 1 in Ashworth and Von Hirsch 1998). It is a means of achieving prevention of crime, by treating the offender through various programs (Ashworth 2010: 502), and trying to place him back into the society as a non-offender. The main drawback is that only few of these programs are better at preventing re-offending compared to normal non-rehabilitative sentences (Ashworth 2010: 502). This goal is also very specific to criminal law, as neither administrative nor private law aim at rehabilitation.

2.4.5 Restoration and Reparation

Those who value greatly victim's rights, believe in restoration and reparation of the victim as a goal of criminal law. They argue that justice to victims should be the first goal of the criminal justice system, and they support the view that the victim and families should be involved in the discussions about the response to the offence (chapter 7 in Ashworth and Von Hirsch 1998). This sounds very similar to the goals of private law. The main objective of tort law is "to provide a remedy to the victim for the invasion of protected interests, usually damages but sometimes injunctive or other relief" (Ashworth 2000:233). In other words, the goal is to compensate the injured party. As can be seen, criminal law also offers compensation (restorative justice) to the victim, however, in practice this has been rarely done by the courts (Ashworth 2000:234).[15] In contrary, in administrative law restoration of harm using reparatory measures is the main goal.

2.4.6 Punishment

Several scholars, such as Von Hirsch, argue that the primary function of criminal law should be punishment. They believe that the offenders deserve punishment for their offences, as this would create justice, and would work as a deterrent (Ashworth 2006:16). The leading proponent of this retributive philosophy has been von Hirsch (chapter 4 in Ashworth and Von Hirsch 1998). He argues that there are two justifications for punishment: (1) there is an intuitive connection between desert (what one deserves for his actions) and punishment (the actual

[15] However, this depends on the legal system. It is true for the UK, however, for example in the Romanic countries and Belgium, the victim can claim compensation in court as a 'private party'.

sanction), and (2) there is an underlying need for general deterrence (discussed in Ashworth 2010: 502). But others disagree by saying that it is "unsatisfactory to rest such a coercive institution on the mere intuition that punishment is an appropriate or natural response to offending" (Ashworth 2010: 502). Without going into details of this debate, the fact is that punishment can also be achieved by other legal instruments. Punitive damages in tort and administrative fines in administrative law, if available, are also punitive and deterrent in their nature. In this sense, punishment as a goal is not unique to criminal law. What is unique though, besides incapacitation, is the element of moral blame and stigma inherent in criminal penalties. This will be discussed in the following sub-section (2.5.4).

To sum up, the functions and goals of the criminal law discussed in this section are to some extent relevant to answering the question of why the criminal law should be used as opposed to other legal mechanisms. It has been shown that these functions and goals are not particularly unique to criminal law because other sanctions, such as punitive damages in tort or administrative fines and measures could achieve the same goal. This leads to the indication that the distinction between criminal and tort and administrative law enforcement should not lie in the function but in something else, like for example procedure. The next section will discuss in more detail the main principles (criteria) found in the legal literature, which are said to justify the need for criminal law. These will be the so-called legal criteria for criminalization.

2.5 Why Criminalize: Legal Criteria for Criminalization

Several legal scholars have contributed to the debate on when and why there is a need for criminal law. The approaches to criminalization differed across countries. In the United Kingdom (UK), the most prominent literature on this issue has been the work of Ashworth. In his article, "Is the Criminal law a lost cause?" he develops an argument in favor of having a more principled development of criminal law (2000: 225-256). According to him, the use of criminal law lost its principled character, as many new offences, which do not meet the criteria for criminalization, are made criminal by the legislators. He adds that the evolution of the

(English) criminal law is "historically contingent" and "not the product of any principled inquiry or consistent application of certain criteria, but largely dependent on the fortunes of successive governments, on campaigns in the mass media, on the activities of various pressure groups, etc (2000:226). Hence, he argues that in practice, criminalization is hardly based on any principled justification. No wonder his other important work has dealt primarily with this issue. In this book, *Principles of Criminal Law*, Ashworth discusses the criteria (principles) according to which a conduct should or should not be criminalized and as such to determine the frontiers of criminal liability (2006: 536). The following sub-sections will devote more attention to these principles. A similar observation of overcriminalization has been made by Husak who defends a "restrictive/negative" theory of criminalization. According to him, criminal law should be used only as last resort (2004: 207-235).

This approach of criminal law as *ultimum remedium* has been advocated also by Dutch legal scholars. Hulsman argued for the so-called subsidiarity principle, which basically meant that first, all other enforcement instruments, such as private and administrative law, should be used before resorting to criminal law (1965). According to him, these are the factors relevant for deciding whether to criminalize or not: the level of society's concern, ethical concern, societal harm and how difficult it is to identify the wrongdoer. As such, Hulsman argued for the use of criminal law only for serious harms and as last resort when all other available means fail. His approach became more extreme in the 1970s when he became a proponent of "abolitionism" of the criminal law system (Hulsman and De Celis 1982). According to him, if people knew how the penal system ('*machine repressive*') worked (in practice no theoretical principles adhered to), they would want to abolish it too. Hulsman adds that the system is incoherent, every organ works independently, sometimes contradictory to each other, and due to the fact that only a negligible portion of crimes gets punished, its social function is marginal, and hence, unnecessary (1982). However, his solution in form of a dialogue (and agreement) between the victim and the offender for the purpose of getting to understand each other's actions, and to feel compassion and regret, seems to be idealistic and utopian.

What should be noted is that Hulsman's focus is on '*delinquance traditionnelle*' (traditional crimes), and as such 'regulatory offences' are outside the scope of his analysis (1982:53-54). This is when he developed the so-called 'negative criteria' for criminalization laying down the conditions when criminal law should not be used at all. Among his four 'absolutely' negative criteria when criminalization cannot be invoked are: (1) to impose moral insights on the minority, (2) to reason that assistance and help should be created for the punished person, (3) if the capacity of the system would be insufficient to deal with it, and (4) if this would create only a '*schijnoplossing*' (a symbolic solution) to the problem (Hulsman 1972: 80-92). Another Dutch scholar, De Roos, was also a supporter of the negative criteria for criminalization. According to him, harm should be so large as to justify government's intervention, government should not interfere outrageously with individual rights (principle of tolerance), criminal law should be used as last resort (principle of subsidiarity) and there should be the capacity to enforce criminally (1987). These criteria were met with some criticisms arguing that they do not solve the problem of criminalization as these criteria are difficult to operationalize and basically useless in practice (Groenhuijsen 1993: 1-6).

German scholars have also dealt with the question of when to use criminal law and when the administrative penal law. Weigend looked at the potential 'qualitative' as well as 'quantitative' criteria for criminalization within the German legal scholarship. However, according to him, the answers are unsatisfying and rather contradictory. Therefore, he proposed to abandon the strict distinction between criminal and administrative penal law and to focus on the optimal 'resolution' on a case-by-case basis (Weigend 1988: 21-49).

Other legal scholars have also provided crucial insights into the question of rationalization of criminal law (Lacey 2002: 9; for example see Feinberg 1984; Dworkin 1978). Based on this literature and the literature discussed above, four legal criteria for criminalization are identified and analyzed:

1. the principle of individual autonomy
2. the principle of welfare

3. the principle of harm
4. the principle of morality.

2.5.1 The Principle of Individual Autonomy

As mentioned earlier, the basic justification for the existence of criminal law has been to protect the individual against state censure and to hold a person criminally liable only if she herself decided to commit a crime. This is the basic idea behind the principle of individual autonomy, one of the fundamental concepts justifying the use of the criminal law. What it means is that "each individual should be treated as responsible for his or her own behavior" and a penal sanction should follow only a freely chosen act (Ashworth 2006: 536). This principle has factual and normative elements. The factual element is that individuals have "the capacity and sufficient free will to make meaningful choices" (unless legitimate excuse for criminal liability such as insanity or minor age) (Ashworth 2006: 536). The normative implication of the principle of autonomy is that "individuals should be respected and treated as agents capable of choosing their acts and omissions" (Ashworth 2006: 536). From these premises stem the key formal elements of crime, *actus reus* (voluntary action) and *mens rea* (guilty mind), both needed to justify the imposition of a criminal sanction. In a nutshell, this principle states that individuals are free to choose their action but they have to bear the consequences. However, the key assumption underlying this is that the choices are unconstrained, which seems to be unrealistic. This core idea of protecting individual freedom from power of majority dates back to the 19th century to Mill's book *On Liberty* (Mill 1859). Mill argued that the only justification for which the power against the individual can be legitimate is to prevent harm to others, not to self (more in section 2.4.3 on the principle of harm). This 'negative' function of criminal law meant for example, that sending an individual to prison without a proof of fault (or a lack of fault) is against the principle of individual autonomy (in Ashworth 2000:240).

This is related to Hart's famous principle that an individual should not be held criminally liable unless he had the capacity, physical and mental, and a fair opportunity to exercise these

capacities (Hart 1968).[16] Thus again, the importance of making individual choices is stressed. However, as mentioned above, the assumption that individuals are absolutely free to choose their actions or to have no civil duties except for refraining from harming others is unrealistic. Collective goals have also been incorporated into the autonomy-based theory. Joseph Raz argued for three features of such a theory: (1) primary concern is the promotion and protection of positive freedom which is understood as the capacity for autonomy, consisting of the "availability of an adequate range of options", and of the "mental abilities" necessary for an autonomous life, (2) the State has a duty not merely to prevent the denial of freedom, but also to promote it by creating the conditions of autonomy, and (3) one may not pursue any goal by means which infringe people's autonomy unless such action is justified by the need to protect or to promote the autonomy of those people or of others (Ashworth 2006: 536; 1986:425). In a nutshell, this means that the state should provide conditions for individual freedom by having a criminal law system, which would safeguard it and sanction only those that would interfere with it. These features are also related to the following principle, the principle of welfare.

The third feature proposes a minimalist approach towards the use of criminal law (Ashworth 2006: 536), which could be identified as the principle of subsidiarity or criminal law as last resort, as discussed earlier. The proponents of this approach argued for criminalization only if "there is probably no other means that is equally effective at no greater cost to other values" (Simester and Sullivan 2000:11; Feinberg 1984:26).[17] Put differently, if less coercive means are effective and do not jeopardize the protected values, these means should be used. According to Simester and Sullivan, the reason for restricting the use of criminal law is because it prevents free choice and coerces people by threatening them with criminal liability unless they submit to its commands. They stress that if it wants to control people's lives it should have a good reason to because by restricting the ways in which a person may shape her life, the law has the potential to prevent her from pursuing the goals and aspirations which matter to her. The

[16] This work is discussing who should be punished, thus it is about the psychological criteria for criminal responsibility (i.e. *mens rea* and negligence).

[17] This citation is in the book with reference to the definitions of the liberty-limiting principles, and particularly with regard to the harm principle; Feinberg does not mean that these liberty-limiting principles, such as the principle of autonomy, are a sufficient condition for the State to invoke criminal law.

problem according to them is that the legislature imposes its view of how society should behave upon its citizens (Simester and Sullivan 2000:10; Raz 1986). In general, Simester and Sullivan argue that there can be criminal prohibitions but they should not interfere more than the minimum necessary (2000:10).

According to Husak, another proponent of the minimalist approach, criminal law burdens two liberties: besides (1) the liberty to engage in the proscribed conduct, it also burdens (2) the liberty not to be subjected to the hard treatment and condemnation that comes with a criminal sanction (2004:235). Therefore, assuming criminal law has two functions, preventive and expressive, imposing a criminal sanction requires a strict standard of proof and a justification in order to override the valuable rights, which could be infringed by (criminal) punishments (Husak 2004:232-233). To minimize the risk of infringing these rights, criminal law should be used as last resort.

The principle of autonomy underlines the principle of legality in a sense that it assumes all individuals are rational, choose knowingly their actions and are prepared to bear the consequences for them (Ashworth 2006:85). Therefore, unless a person knows what the criminal law prohibits (the principle of legality), it would be unfair to invoke criminal sanctions.

2.5.2 The Principle of Welfare

Unlike the principle of individual autonomy, the main goal of the principle of welfare is the State's obligation to protect collective interests through criminal law by imposing duties, for example "the fulfillment of certain basic interests such as maintaining one's personal safety, health and capacity to pursue one's chosen life plan" (Ashworth 2006: 536; Lacey 1988:104). It recognizes that the law must operate in a social context and must give weight to collective goals. According to this principle, criminalization may be justified based on the criterion of welfare, i.e. "necessary for the general good" (Ashworth 2006: 536). This seems at first to be in conflict with the principle of autonomy, however, as Ashworth points out, the principles can be in fact mutually interdependent if certain conditions are met (if there is fair warning and

exception for those not capable of attaining the required standard) (2006:85). If the autonomy principle talks about positive liberty (giving opportunity to act and fulfill one's potential) rather than merely negative liberty (freedom from restraint), the autonomy and welfare principles can work towards the same goal (Ashworth 2006: 536).

2.5.3 The Principle of Harm

By far the most important and discussed principle of criminal law is the "harm principle". It states that the use of the criminal law can be justified and invoked against an individual only on the grounds that it prevents harm to others (or to self). In other words, the reason for criminalization is the reduction of harm to others (Ashworth 2006: 536; Feinberg 1984), or as added by Feinberg, to prevent hurt or offence to citizens (the so-called "offence principle") (Mill 1859; Feinberg 1988: 350 who based his ideas on Mill). Nevertheless, the question remains how to set the boundaries of criminal law based on this harm principle. Feinberg proposed that "the need to prevent harm (private or public) to parties other than the actor is always an appropriate reason for legal coercion", but in other cases, the state interference is legitimate and morally justified only if it is reasonably necessary (necessary and effective). In other words, the seriousness of harm must be considered, and not all harms should be prohibited (Feinberg 1984:11-12). This relates once again to the argument that the function of criminal law is to protect individuals against state censure. According to Mill, the principle of harm is the ONLY valid principle to justify invasions of liberty, and hence the use of the criminal law (1859).

Several other scholars have built upon Mill.[18] Raz also argued for limiting the use of the criminal law to harmful conducts by stating that a conduct, which is not harmful to others, should not be criminally penalized even if it is regarded as immoral or otherwise unacceptable (1987:327). The above argument can also be derived from the principle of autonomy. According to Raz, state coercion violates the autonomy of the offender because invoking criminal sanctions upon

[18] For example, Hart (1968) argued that even though the general justification of criminal law is the reduction of crime through deterrence, the State is justified to use its criminalizing power only against a conduct for which the individual is responsible (the principle of autonomy), and which is harmful to others, or in certain conditions, to oneself.

him deprives him of a certain degree of autonomy. Coercion, and hence deprivation of ones autonomy, can be justified only to prevent harm but not for another reason as harm interferes with autonomy. This is because depriving individuals of their autonomy (opportunities and ability to use them) is a way of causing them harm in terms of diminishing their opportunities (Raz 1987). As such, according to this perspective, criminal law should be used only when absolutely necessary to prevent harm to others.

Another question emerges as to whether only actual harm or also potential harm should be criminalized. From the literature influenced by Mill, it seems that criminal law applies only to the former case. However, being written in 1859 under the circumstances of protecting the citizen against the despotic power of state, the question is whether this argument still holds (Groenhuijsen 1993:4). However, Mill is very clear on the limit where the individual freedom/autonomy ends: where the harm to others starts. This harm can be either actual, or a threat of harm, and people should not wait until the crime is committed but should try to prevent it (Groenhuijsen 1993:6 based on Mill; Mill 1859).

A more fundamental issue is to determine what constitutes (a threat of) harm. According to Feinberg, harm includes "those states of set-back interests that are the consequence of wrongful acts or omissions by others" (1984:215). Therefore, the protection of serious legal values and interests is assumed to implicitly underlie the harm principle. Von Hirsch and Jareborg also build upon the theory that values and interests matter in determining the seriousness of the offence (or in other words the level of harm), and hence, in determining (partly[19]) whether a harmful conduct should be criminalized or not (1991: 1-38). They identify the type of interests, individual as well as collective that ought to be protected by criminal law, by rating the seriousness of individual harm using their "standard of living criterion". This criterion is defined in terms of general well-being, material as well as non-material, and rates the seriousness of offence according to the degree the offence affects the individual's standard of living (Von Hirsch and Jareborg 1991: 1-38). For example, if harm interferes with interests,

[19] Partly, because they argue harm is not the only factor in deciding whether to criminalize or not.

which are fundamental to maintain the quality of person's life, this harm would be considered serious. On the contrary, Feinberg argued that it is the welfare interests that matter in assessing the seriousness of offences (1984:37). What can be implied from this debate is that the task of assessing the seriousness of offences (and hence of harm) is quite complex and problematic as it falls back to the problem of what defines a legitimate interest to be protected, especially if different moral, cultural and political systems are to be considered (Ashworth 2006:33,41). Thus, practically speaking, the discussion boils down to determining the threshold of the level of harm, which would justify criminalization.

Determining a sufficient level of harm, which would justify invoking criminal sanctions, is related to the question of determining the boundaries of criminal law *vis-à-vis* private or administrative law. Ashworth states that the principle of harm lacks clear justification as to why particularly the criminal sanction should be invoked as opposed to a private or an administrative sanction (2006:33). According to the 'minimalist approach', criminal law should be used only as last resort or for the most reprehensible types of wrongdoing, when other legal instruments such as private or administrative sanctions would not suffice. Ashworth agrees and adds that this would also be pragmatic because it is affordable and it would not weaken the significance of the criminal label and its process (2000:240, 244).

When looking how criminal law is applied in practice, it seems that the principle of harm is not always adhered to. There are non-serious or even "harmless" conducts criminalized, such as victimless crimes, remote crimes, or attempts. In case of harm to yourself (a victimless crime), the rationale justifying criminalization is paternalistic. The state believes it knows what is best for its citizen, and hence 'nudges' him in one direction or another. For example, soft drugs are made criminal because it is believed that this would have harmful effects for their users. However, it is sometimes questionable whether the underlying reason for criminalizing most of these acts is not the moral disapproval rather than the alleged furthering of individual interests (Simester and Sullivan 2000:9; on legal paternalism see Feinberg 1984:12). In some cases, the real reason, moral condemnation or prejudice, might be hidden behind the apparent

paternalistic thought. This shows that criminal law might also have a symbolic value and a declaratory power, which acts as an additional deterrent (Ashworth 2006: 536). From this discussion, it can be seen that the level and nature of harm is an important criterion for criminalization, but apparently it is not the only one (Von Hirsch and Jareborg 1991:3-4).

2.5.4 The Principle of Morality

One of the most controversial debates on the borders of criminal law has been surrounding the question of whether morally wrong behavior is a sufficient justification to invoke the criminal law. Devlin, in his work *The Enforcement of Morals*, proposed that the primary function of the criminal law was to maintain public morality (1965:7). However, his argument should be understood in terms of the preservation of society. As Dworkin explains, what Devlin had in mind was (1) society's right to protect itself, and (2) society's right to follow its own "morality" in defending its social environment from changes it opposes (1978 discussion in chapter 10). Put differently, Devlin believed in the existence of a common morality, which protects the cohesion of society, and that if a behavior deviating from this common morality is able to hurt the existence of society – if it rises to "intolerance, indignation and disgust", then consequently, the criminalization of this 'immoral' behavior, which threatens the existence of society, might be justified. As Devlin puts it, "if mere presence of this behavior is an offence and it is the genuine feeling of the society, it should be eradicated" (1965:11-17).

Robinson, when trying to justify the distinction between criminal and private law systems, also supported the moral condemnation of the criminal law as a fundamental reason for the criminal-civil distinction. According to him, this can be found particularly in the German system of criminal law, which influenced the criminal law system in many other countries, and which ties criminal liability to moral norms (Robinson 1996:206). On the contrary, Weigend claims that in the German system not all administrative violations are morally-neutral, such as knowingly driving drunk, or offering of advertising opportunities for commercial sex in public and in a grossly offensive manner (1988:42-43). Thus in this case, blame is not unique to criminal law. The reason why Robinson believes in the moral value of the criminal law and its distinction

from private law is because it is the human nature to make moral judgments and it is only through a distinct criminal justice system (and a criminal label) to "communicate a clear condemnatory message" (1996:207-208).

The controversy in this principle comes from the loose concept of morality. "Morality" varies across time and space, and across cultures. For instance, it is worth noticing how the acceptance of homosexuals or soft drugs has evolved in the recent decade. It is difficult, if not impossible, to find a common concept of morality, which would justify criminalization. And even if, it is debatable whether this is a sufficient justification. In reality, not all "immoral" acts (lying, adultery) are criminalized, and *vice-versa*, certain acts not considered immoral *per se* (speeding) are criminalized. Thus there is only a range of crimes which are considered really 'blameworthy'. The question, what determines which conduct 'deserves' moral blame, has been debated. Devlin distinguishes between real crimes and quasi-crimes (usually statutory offences). According to him, the quasi-crimes do not have such a strong moral content in the provision as it is difficult to translate morality into legal terms, unlike in the real crimes, where they protect a specific moral principle. He adds that the quasi-crimes are not directly breaching something morally wrong because they are not shaped by moral law, even though they are based upon it (chapter 2 in Devlin 1965). As such, the belief that criminal acts are morally wrong (*mala in se*), does not hold in modern criminal law, where acts are wrong because they are illegal (*mala prohibita*), thus morality cannot be a differentiating factor (Simester and Sullivan 2000:3).

From this discussion, it could be implied that it is important to distinguish between criminalizing morally wrong behavior (reason for criminalization, such as in Devlin), and moral condemnation coming from a criminalized behavior, such as Robinson claims (consequence). The latter could also be called an 'expressive' or declaratory function of criminal law, where criminal law can create morals (or moral judgments), rather than being solely an instrument to deal with 'morally wrong' behavior. Thus what we could see is a move away from criminalizing 'morally wrong behavior' to signaling 'morality' through criminal law. For example, imposing criminal

sanctions on environmental harms does not seem to signal that environmental harms are morally wrong *per se*, but rather to signal that the protection of the environment is an important goal.[20]

This signaling or expressive function of criminal law has been generally agreed in the literature as an additional function to the punitive/preventive function of criminal law. Thus, the goal of the criminal law is to prevent AND to censure.[21] A recent example of this dichotomy is the criminalization of blasphemy (speaking in offensive terms about God) in the Netherlands. The argument follows that criminalization of an act does not depend on the number of times it can be invoked, but it has an important expressive ('*normstellende*') function. Criminalization of blasphemy expresses that people can be hurt not only by hatred speech, but also by infringing what they consider sacred.[22] Therefore, when discussing alternatives to criminal law, Husak argues that it is important to include not only the efficacy in reducing crime, but also their ability to express censure (2004:223). Suggestion for a pragmatic reconciliation of the different rationales in legal doctrine is to divide criminal law according to the function into "real crimes" (moral core) and "quasi-crimes" (regulatory offences), and to accept the co-existence of the different rationales (discussion in Lacey 2002:269). This corresponds nicely with Devlin's distinction. However, Husak argues that this distinction between "real crimes" and "regulatory offences" or quasi-crimes does not always parallel with the distinction between the function to prevent and censure and to prevent, respectively (2004:226).

Another criticism with regard to the principle of morality as a justification for criminal law is the fact that the disapproval on moral grounds might be just an expression of prejudice or personal taste, which is morally irrelevant (Dworkin 1978:246-253). This even furthers the need for a clear definition of 'morality. Dworkin puts it that there must be a defensible definition of

[20] An example of this is the EU Directive on the protection of the environment through criminal law, which has been discussed in Chapter 1.
[21] However, there is a discussion in the literature on what the exact goals of criminal law are, see for example Husak in "The Criminal Law as Last Resort" (2004: 207-235).
[22] "Strafbaarstelling van 'smalende godslastering' blijft gehandhaafd", in *Nederlands Juristenblad*, 26 oktober 2007, No. 38, p. 2468

morality, which is not only about distaste and disgust, but also about an evidence for the existence of moral consensus (1978, chapter 10). On the other hand, this disgust or distaste, such as for example a sexual act in public, could be interpreted as being offensive to others. In this case, it is not only about the immorality of the act but also about its offensiveness to others, which according to Feinberg could justify criminalization of moral wrongs (1988: 350). All these controversies only point to the fact that criminalizing an act based on morality would be a difficult task giving a lot of room for heated debates. What could be concluded is that the fact that we live in a multicultural society, and hence with different moral norms, only affirms that the principle of morality should not be the only rationale for criminalization (Simester and Sullivan 2000:8).

To sum up, this section on the legal criteria for criminalization showed the many views legal scholars have on the reasons for the society to use criminal law. These reasons varied from the state's duty to protect the individual's autonomy as well as collective goals, and to invoke criminal sanctions only against those who would disrupt these liberties, and as such for example, cause harm to others. There is a disagreement among the legal scholarship on how far the state can go in punishing individuals, and whether it can go as far as preserving morality. What can be concluded from these discussions is that the role of criminal law should be limited as much as possible and used only to protect the society from harm and/or to symbolize some common values and norms. What is missing from the legal discussion or maybe more precisely, what the legal scholarship does not aim to clarify, is to explain why and when criminal sanctions should be used as opposed to other legal remedies, such as private or administrative sanctions, from an efficiency point of view. The next section will discuss in a more detail the development of administrative law, namely of administrative penal law, which provides some indication why some acts have been decriminalized.

2.6 The Development of Administrative Law

Recent legal scholarship has also discussed the differences between criminal law and administrative law, and private law on a less philosophical basis. Originally, the distinction between criminal law and administrative law was based upon differences in injustice – which rights have been violated. However, the borders have never been clearly defined. Thus according to Hartmann and Van Russen Groen, the choice whether a sanction is criminal or administrative is based on pragmatic grounds and decided by the legislator (1998:144). Since around 1980s, the so-called administrative penal law has developed, in for example the Netherlands and Germany, though in each country in a different form. The main characteristic of administrative penal law is the availability of administrative fines. As mentioned earlier, administrative fines are administrative sanctions with a punitive nature, hence, they are subject to the rules of administrative as well as criminal law. It is the administrative authority which imposes these sanctions, however, because of their punitive character, they are considered as a criminal charge falling under the Article 6 ECHR. In the Netherlands, there is still no general regulation for this type of sanctioning, rather the application of punitive administrative sanctions is spread across different acts (Hartmann and Van Russen Groen 1998:144). On the other hand, Germany has a well elaborate administrative penal law ("Ordnungswidrigkeitenrecht"). Two reasons will be discussed why administrative penal law has seen such a rise in several jurisdictions, which are also relevant for the discussion of environmental law enforcement later on: (1) the enforcement deficit under criminal law (based on the Dutch literature), and (2) the refusal of corporate criminal liability in some jurisdictions.

2.6.1 Enforcement Deficit under Criminal Law

Expansion of administrative law took course during the 1950s-1980s mainly for three reasons: it was a response to (1) the overload of the criminal justice system, (2) the inadequate expertise of the public prosecutor and the judges in several regulatory spheres and (3) because of the low criminal sanctions imposed (Hartmann and Van Russen Groen 1998:61; Hartmann, Van der Hulst, and Rogier 2002; Commissie Heroverweging Instrumentarium Rechtshandhaving 1995).

Since it became evident that with the rise of regulatory offences falling under criminal law enforcement in the 1980s criminal law became less effective, other means of enforcement were searched for, which would not only punish but which would also have a preventative function (Commissie Heroverweging Instrumentarium Rechtshandhaving 1995:59). In addition, criminal law was said to be excessively time-consuming and expensive, which could result in under-enforcement. In the Netherlands for example, first, a solution to this overload was searched within criminal law in order to safeguard legal guarantees and protections, which are present under criminal law. As such, the so-called "transaction" was developed (Hartmann and Van Russen Groen 1998:50). The transaction is a "deal" offered by the public prosecutor to the wrongdoer, which upon acceptance will release the offender from prosecution (more on this in Chapter 5). Then after World War II, the so-called "regulatory" law ("ordeningsrecht") developed within the social and economic sphere, regulating social and economic offences, including environmental violations. Because the enforcement of these offences was spread across different areas of law, the Economic Offences Act ("Wet op de economische delicten" or Wed) was created, unifying the regulation of these offences. However, with the rise of more and more economic offences regulated by Wed, the criminal justice system became overloaded even if action was taken to simplify the criminal procedure for certain offences. Since administrative law lacked legal safeguards of criminal law, relying on pure administrative enforcement was not a solution to the problem.

This has led to the development of administrative penal law in several jurisdictions, such as the Netherlands or Germany, which offered the legal safeguards of criminal law and still was outside the criminal justice system. The formal criterion for distinguishing criminal and administrative law is the authority, which can impose the sanction, the judge/magistrate or the administrative authority, respectively. An informal criterion is whether the sanction is punitive and deterrent or not (Hartmann and Van Russen Groen 1998:145). This led to the development in the Netherlands of administrative penal law within the sphere of traffic offences ("Wet administratiefrechtelijke handhaving verkeervoorschriften") in 1990 which sanctioned minor traffic offences by administrative fines instead of resorting to criminal law in cases where no

harm was done to persons (Hartmann and Van Russen Groen 1998:56). It was acknowledged that criminal sanctioning might not be effective and practical in all cases (low probability of detection, too low sanctions and the delay in imposing a sanction), which led to the transfer of some previously criminally enforced violations into administrative law (decriminalization), for example also in other areas, such as competition law or social security law.

The literature also discussed the possibility of administrative fines to enforce environmental regulations (Kleijs-Wijnnobel 1991: 461-467). According to Kleijs-Wijnnobel, the role of administrative fines in case of environmental violations could be many-fold: administrative fines could serve as a supplement to the available administrative sanctioning package, applied to violations for which other administrative sanctions are not adequate and for which up to now only criminal sanctioning would be an option or for those which are now exclusively enforced by criminal law (1991:465). Since criminal enforcement is not always the most desirable option, administrative fines could be a good alternative. However, the author mentions that administrative fines should not be seen as an alternative to other administrative sanctions since their goal is not to stop the violation or to repair the damage done, rather it is a penal sanction which should serve as a threat and a motivation to comply (Kleijs-Wijnnobel 1991:465). Thus according to him, the administrative fine would be suitable for "one-time" offences where reparation of harm is not possible or not applicable, such as in case of a violation of administrative duties, which do not generate harm themselves as such, and which are up to now enforced exclusively by criminal law in the Netherlands (Kleijs-Wijnnobel 1991: 461-467). Kleijs-Wijnnobel also adds that more opportunities could be created for the transaction, which is possible under Dutch law (and under Belgium law). This 'sanction' is within the criminal law system, regulated by the public prosecutor, which could provide for more uniformity in its application than an administrative fine would (Kleijs-Wijnnobel 1991:466). In addition to the transaction regulated by criminal law, there is the possibility of "administrative transaction" based upon the Article 37 of Wed, which gives power to the administrative authority to offer a transaction to the offender as well (Hartmann, Van der Hulst, and Rogier

2002:45). It still falls under the criminal law regulation, however, the public prosecutor does not have to be involved.

To summarize, one reason why administrative law has seen development since 1980s to incorporate administrative fines, at least in the Netherlands, is that a solution was needed to account for the enforcement deficit of criminal law. These administrative penal sanctions offered the legal guarantees present under criminal law while not tapping the capacity resources of the criminal justice system. The so-called "administrative penal law" was spread across several areas of law, such as traffic law, competition law and environmental law in for example Germany. This development evokes a question whether such legal developments make also economic sense. To see whether and when administrative penal law is indeed an efficient instrument to use has not been the aim of the legal scholarship. This economic justification will be further elaborated on in the following chapters.

2.6.2 Corporate Criminal Liability

Another reason why enforcement through administrative law has seen more development in recent years has been the need for corporation liability. Administrative penal sanctions, which do not distinguish between natural and legal persons are simply needed in jurisdictions where criminal liability does not apply to legal entities, such as for example in Germany (De Doelder and Tiedemann 1996). Corporate criminal liability means that a violation is attributable to the corporation as a whole rather than to a particular person. For example, a buyer purchases a product from the company, not from the vendor as such, even though it is the vendor who sells it. In this case, the activity of selling a product is attributable to the company rather than to the vendor. Corporate criminal liability has slowly evolved during the 19th century, and at the beginning of the 20th century, corporate criminal liability was fully established in the United States, even for crimes of intent (Khanna 1996:1482). The main reason being that enforcement can be effective only if the corporation itself can be held criminally liable, since it also derives benefit from unlawful activities (Khanna 1996:1483). In addition, the responsible person for the violations could not always be detected and sometimes there was a judgment-proof problem,

thus individual criminal liability might not always be efficient in these circumstances. However, still today some jurisdictions refuse the imposition of criminal liability on corporations for any crime, such as for example in Germany. The main reason why this is the case is based on the ancient rule '*Societas delinquere non potest*', meaning corporations cannot be held criminally liable (Weigend 2008: 927-945). This is because intent or '*mens rea*' is at the heart of criminal law and a company, which has no soul cannot have an intent.

If corporations cannot be held criminally liable, other instruments, such as for example the aforementioned administrative fines under administrative penal law, which do apply to companies (as well as to natural persons), could be seen as substitutes for this legal impediment. As a consequence, enforcement through administrative law is developing rapidly (De Doelder and Tiedemann 1996:293). Looking at some jurisdictions, differences can be seen with regard to the extent corporate criminal liability is applied. In the Netherlands for example, corporate criminal liability developed first with the enactment of the Economic Offences Act (Wed) in 1951. Article 15 Wed read that economic crimes can be committed by legal persons and hence, legal persons can be criminally liable. However, this applied only to the economic offences specified in Wed. Originally, the Dutch Criminal Code ("Wetboek van Strafrecht") was written in such a way that only natural persons could be subject to criminal liability. However, as corporations became more and more important, the role of a natural person acting in the sphere of a corporation had to be considered (De Doelder and Tiedemann 1996:290). First, only the members of the board of a corporation were made subject to criminal liability, depicted by the legislator as "the owners", and hence acting as the corporation. However, not the members of the board, but the corporation was "the owner", thus the sanctions were not addressed to them. To solve this problem, criminal liability for legal entities was introduced finally in 1976 by changing paragraph 51 of the Dutch Criminal Code and repealing Article 15 of Wed. Paragraph 51 of the Dutch Criminal Code states that criminal sanctions can be imposed on a corporation, on a natural person (who have instructed or given guidance to commit the offence) or on both. This possibility of cumulative liability (on the natural person as well as on the corporation) is not possible under administrative law (De Doelder and Tiedemann 1996).

On the other hand, in Germany, even today there is no criminal liability for corporations. Instead there is a well developed system of administrative penal law ("Ordnungswidrigkeitenrecht"), which offers a punitive sanction, an administrative fine that can be applied to legal entities if an organ or a person with control functions of this legal entity committed a crime or an administrative infringement (Weigend 2008:931). It is not necessary to identify the natural person who did wrong, it is only necessary to identify that *someone* acting on behalf of the corporation did wrong (Weigend 2008:931). Such a general legal system of administrative penal law is not yet developed in the Netherlands (De Doelder and Tiedemann 1996:294). This "ordnungswidrigkeit" only means a neglect of duties, thus the offences are usually classified as minor (De Doelder and Tiedemann 1996:303). Companies in Germany can be subject to liability only if the offence is labeled as "ordnungswidrigkeit" and committed by an official organ of the corporation, by a member of such an organ, by (a member of) the board of the corporation or by a partner of a trading corporation. The problem is that the sanction will impact the shareholders of the company rather than the actual offenders. On the contrary, in the Netherlands, the company is seen more as an entity whose actions are imputed from natural persons, hence the prosecutor can choose to prosecute the corporation as well as the natural persons, as described in paragraph 51 of the Dutch Criminal Code.

Under English law, corporate entity can be subject to criminal liability, however, it is based upon individual responsibility, meaning individuals who represent the "brains" of the company have to be identified, and their actions have to be attributable to the corporation (De Doelder and Tiedemann 1996:373). Thus the system a bit more strict compared to the Dutch system. This might cause a problem since in larger corporations, sometimes it is difficult to find persons responsible for the actions of the company.

To sum up, it could be seen that corporations are sanctioned differently in different jurisdictions. If legal impediments exist with regard to corporate criminal liability, this might explain why in some countries society uses more enforcement through administrative law,

rather than through criminal law, particularly in case of environmental violations where violations are also committed by legal persons.

2.7 Limitations of the Legal Approach to Criminalization

The limitations of the legal approach in answering the research question of *why enforcement through criminal law should be used* could be structured along two lines of thought: (1) the need for a benchmark to justify enforcement through criminal law as the best instrument, and (2) translating the criteria for criminalization into practical applicability. The criminal legal theory does not seem to aim at answering these two issues. Firstly, under which conditions the enforcement through criminal law would be the best instrument to reach the desired goal, for example deterrence, has been left unclear. In order to find the most suitable instrument, a benchmark has to be established according to which these three legal instruments could be evaluated. It seems that the benchmark the criminal legal scholarship is using is the effectiveness of law to reduce harms. For example, it is argued that criminal sanctions should be used because of their deterrent effect on offenders, but administrative sanctions might also have a deterrent effect. The problem with this benchmark is the fact that the effectiveness of law also depends on the level of resources made available for enforcement. Criminal sanctions can be very effective in reducing harm as long as enough resources are made available. However, resources are constrained, which means that we cannot evaluate legal enforcement instruments purely on the basis of their effectiveness in decreasing harm, in which case criminal sanctions would always be the most effective instrument. Due to the budget constraint, the costs of these instruments have to be taken into consideration as well. This benchmark, known as efficiency, and used in economics, has not found much support among legal scholars because it does not serve the goals the laws have set according to the legal perspective. That is, for example, all victims have the right to be compensated; all offenders should be punished, and violations should be deterred even if the cost of doing so is high. Using efficiency as the benchmark, such as is done in law and economics, the goal would be to compensate, punish

and deter only in those cases where it would be beneficial from the social welfare's perspective, that is where the benefits would outweigh costs ("optimal enforcement").

Another problem with the legal criteria for criminalization is their applicability in practice, particularly in terms of serving the policy maker. Principles, such as for example the principle of harm, provide useful insights into when criminal law should be used, however, a critical threshold must be established in order to assess what constitutes 'harm'. This holds particularly for the so-called controversial issues, such as morally wrong behavior, omissions, minor harms, remote harms or widely debated victimless crimes (for discussion, see Ashworth 2006: 536). It is not always clear what the 'sufficient' level of harm ought to be to justify criminalization. In case of omissions, it is not the act, but the failure to act, which is punished. Those placing strong emphasis on the principle of autonomy would oppose the omissions liability because this restricts the individual autonomy even further, even if omissions are regarded as causes of harms to others in certain circumstances (Feinberg 1984:163-165). Thus, there must be a good reason to require someone to act and avoid an omission. Criminalization of minor harms is also contrary to what the harm principle requires. Remote harms pose also a challenge because the harm has not materialized yet, which goes against the principle of harm. Feinberg (1984:216) and Ashworth (2006: 536) discuss these issues and conclude that even if the extent of harm does not justify the use of criminal law, criminalization can still be justified if it is the most cost-effective instrument to deal with these type of offences. Here, what can be seen is that the size of costs has been given some consideration when choosing an appropriate enforcement instrument. With regard to victimless crimes, criminalization is said to be justified in order to prevent that others would do the same (Ashworth 2006: 536). The bottom line is that many of these principles of criminal law provide philosophical concepts rather than practical applicability, which is not wrong *per se*, but this dissertation tries to suggest more "practical" criteria which could be relevant for the policy maker who usually needs simple, easily communicable but economically justified criteria.

One of the reasons explaining why the criminal legal scholarship does not aim to discuss the underlying reasons for criminalization from a broader perspective is the fact that criminalization has expanded into several new areas. According to Lacey, a so-called critical legal scholar, this expansion makes the reconciliation of different rationales for criminalization more and more problematic. She explains that this is the factor, which has brought the focus of the criminal legal scholarship closer to dealing with the formal conditions of criminal liability alone, such as the principle of legality, rather than closer to understanding of the underlying factors behind it, that is why criminalize (Lacey 2002:269). Unlike the traditional legal scholars, the so-called critical criminal lawyers argue that "the power and meaning of criminal laws depend on a more complex set of processes and underlying factors than the mere position of prohibitory norms to be enforced" (discussion of critical criminal law in Lacey 2002:273). In other words, according to them, the generally accepted legal doctrine is manipulable and indeterminate due to its influence by political and economic power (Lacey 2002:273). According to Lacey, this is where the links between the legal and social construction of crime appear, because the critical legal scholar does not take the creation of law as given by the principle of legality, but is interested in questions why particular law is created in the first place (2002:274). This discussion will be taken up in the next chapter, where some of the criminological perspectives and the social construction of crime will be elaborated on.

2.8 Conclusion

This chapter has provided a brief overview of the legal literature discussing the reasons for the use of criminal law. This literature is extensive and varies in focus and scope for different legal systems. As this dissertation focuses on the economic analysis of criminalization, only a very selective sample of this literature has been discussed, mainly the English and Dutch criminal law. Firstly, the elements of the criminal act have been reviewed. It was shown that the general characteristic elements of a crime distinguishing it from civil and administrative wrongs are not as clear cut as they seem. The only 'unique' element of crime seemed to be the higher standard of proof required by the law to impose a criminal sanction. Other elements such as harm, intent

and punishment could also be found in civil or administrative infringements, hence are not unique to crime.

Secondly, the principle of legality clearly shows when the criminal law and its sanctions should be used, that is when the legislature has provided for it in the law. However, this principle only provides a formal legitimization of criminal law by classifying harmful conducts as crimes without really explaining why these crimes became crimes. It has a bit of a tautological nature, where an act is crime because the legislature defined it as such. This is not sufficient to answer the question why enforcement through criminal law should be used as such.

Thirdly, an analysis of the functions and goals of criminal law and its sanctions followed. These goals of criminal law were identified in the literature as deterrence, incapacitation, retribution, punishment and prevention. It was shown that these goals except for incapacitation were not unique to criminal law, in a sense that only the enforcement through criminal law could reach these goals. Sanctioning through private law, such as tort law, as well as through administrative law could deter, compensate, punish or prevent harm. Hence, criminalization should not be justified solely on the basis of reaching these goals, as using other legal instruments such as private or administrative law could as well reach these goals.

Fourthly, the legal criteria for criminalization found in the legal literature (predominantly the English legal literature) were discussed. These were the principle of autonomy, the principle of welfare, the principle of harm and the principle of morality. Discrepancy among the legal scholars has been shown with regard to what the criteria for criminalization should be. From the discussion it could be concluded that the role of criminal law should be restricted as much as possible and used only to protect the individual and the society from harm and/or to symbolize some common values and norms, since the criminal law is said to be morally bound. Therefore, what could be implied is that criminalization should be done with care and should not be overused.

Next, two reasons were discussed which led to the development of administrative law to incorporate punitive administrative fines. First, there was an observation in the 1980s of enforcement deficit under criminal law, which needed to be solved. A sanctioning instrument had to be developed which would offer legal guarantees of criminal law, while making the imposition of the sanctions by administrative authorities possible. Second, because of the legal impediments to impose criminal liability on corporations in some countries, this administrative penal law was needed in order to make corporations liable for crimes and other administrative infringements. From these developments, it could be implied that the criteria for using criminal law as opposed to administrative law are based on pragmatic and legal reasons.

Lastly, two limitations of the criminal legal approach were pointed at. The problem with this legal approach was said to be first, the fact that it does not seem to aim at providing a sufficient explanation of the reasons for the use of criminal law enforcement as opposed to the enforcement via private or administrative law since there is no clear benchmark based upon which the three legal instruments could be evaluated. Second, a framework justifying criminalization should have the ability to be applicable in practice, particularly to be able to serve policy-makers. This shows the need for simple but economically justified criteria for criminalization. The next chapter will build upon the social construction of crime literature and explore in more detail one part of the criminological literature, which also focused on answering the question why society needs enforcement through criminal law.

Chapter 3: Criminological Perspectives on Criminalization

3.1 Introduction

In addition to the criminal legal theory and its legal construction of crime discussed in the previous chapter, criminology has been studying the nature, extent, causes and control of criminal behavior. It focused on the social construction of crime, taking into account broader social processes surrounding it, rather than on the principled or philosophical foundations of criminal law debated in legal scholarship. In simple terms, social construction of crime means that classification of crime as a crime is not simply taken as given by the legislature, but investigations are made into the underlying reasons for criminalization in society. While criminal legal theory concerned itself with formally established norms, criminology tried to put this legal analysis into a historical, social and political context (Lacey 2002:277; Lacey 1995). Looking at crime as socially constructed and forming a part of a political process might help explain why society should or better should not use criminal law as an enforcement mechanism.

The main focus of this 'science of a criminal' approach has been on the explanation of the criminal behavior itself. Hence, it looked at the behavioral aspects and factors, which would induce an individual to commit a crime.[23] Nevertheless, there have been several theories put forward, which look deeper into the reasoning why society enforces through criminal law. One approach is the so-called 'victimized actor model' discussed in 1970s, which will be the main focus of this chapter because it tries to explain criminalization. More recent literature will be also briefly discussed which touches upon the enforcement of environmental violations and the sanctioning of corporate actors as such. The main purpose is to introduce the reader to the rationales for criminalization from a criminological perspective, and critically analyze to what extent these theories could contribute to answering the research questions of this dissertation.

[23] Among others, there is the rational actor model (classical criminology) and the predestined actor model (determinism). For an overview of some criminological theories, see Roger Hopkins Burke (2001) and David Garland (2002:27).

Neither is the aim, nor is it within the scope of this research to provide a full account of all relevant theories found in criminology. The purpose is to sketch the principle arguments of the most important criminological approaches dealing with the society's decision to criminalize. This might prove useful when discussing the need for criminalization.

The victimized actor model presented here does not take criminalization as given (by the legislature) but tries to explain it in terms of a conflict between various groups in a society. According to this perspective, the borders and scope of criminal law, and hence of the use of criminal sanctions, are shifting mainly according to conflicts and "triggering events" in a society.[24] In the words of Burke, the "criminal is a victim of an unjust and unequal society, it is the behavior of the poor and powerless sections of society that are targeted and criminalized, while the dubious activities of the rich and powerful are simply ignored or not defined as criminal" (2001:13). The offender is pictured as a victim of a social conflict, thus the name 'victimized actor model'. According to the criminal legal theory presented in the previous chapter, the main justification for the use of criminal law in very simplified terms has been to protect the individual against state censure and to impose criminal sanctions only when absolutely necessary and when founded on some principled reasoning, such as for example the principle of harm. The offender has been pictured as an individual with rights and liberties that needed to be protected by state. It seems that criminologists transformed the offender into a victim who has been left at the mercy of the powerful groups controlling the state. A criminal sanction here is not seen as something deserved, but as something unjustly imposed. This is just another way of looking at the problem of criminalization. Even though the attitude towards the use of criminal law seems to differ, both approaches seem to argue for a cautious and limited use of criminal law as an enforcement mechanism. However, not all scholars agree with this classification of criminal law as *ultimum remedium*, particularly with regard to environmental law enforcement (Faure 1995: 446-479).

[24] For a literature overview about the developments in criminology with regard to criminalization, see Jenness (2004: 147-171). According to this article, the recent literature views criminalization as a process of institutionalization and globalization.

This chapter will start with discussing the labeling perspective, which gave an offset to social conflict theories questioning the rationalists' notion of criminality (classical criminology). The notion of criminality according to the rationalists accepted the classical view that an act is defined as crime because the legislature has defined it as such. As a reaction to this, conflict and radical theories emerged. These will be discussed next. Further, critical theory, which defines crime in terms of oppression, will also be elaborated on. Lastly, more recent discussion on enforcement of environmental violations and on corporate actors as such will be sketched. To conclude, limitations of these theories will be discussed with regard to their extent or aim to answer the research questions of this dissertation.

3.2 Labeling Perspective

The labeling perspective developed as a reaction to scholarship, which considered crime as defined by the state (as a legislative decision). This is the so-called principle of legality, discussed in the previous chapter. One of the main concerns of the labeling theorists was why and how some behavior is defined as criminal while other is not. Thus, unlike the criminal legal scholars who defined crime as the activity, which violated criminal law, labeling theorists wanted to look deeper into the reasons, practices and social groups that shape criminal law (Burke 2001:136-137). This approach is more positive in a sense that it tries to explain criminalization rather than to tell when it should take place (a more normative approach). Nevertheless, it can still provide some normative indications. The proponents of the rational and predestined actor models viewed the criminal and his characteristics as an explanation for the occurrence of crime. Basically, according to them, criminals were rational and biologically predestined to commit a crime. Labeling theorists shifted away from looking at these 'inherent characteristics' of a criminal to looking at crime as social construction that varied across time and space. The main argument of labeling theorists was that the behavior itself is not inherently deviant or criminal, but it is the social reaction to it, which labels this behavior as criminal. In Howard Becker's words, "the deviant is one to whom the label has been successfully applied; deviant behavior is behavior that people so label" (1997:9). In other words, it is the naming of a

certain behavior rather than the behavior itself, which determines how one is treated by others, and how one views himself.

According to the labeling perspective, criminalization of an act occurs because people with power to make rules decide to label this act as criminal. Becker calls these people "moral entrepreneurs", as they create new rules for the "benefit" of the less powerful groups. However, he contends that these rules, accepted as given by the subordinate, may be designed to keep the powerful in place and to serve their interests (Becker 1997). That is, the rules may be designed to the disadvantage of the less powerful groups in society, such as for example (ethnic) minorities. This shows that it is not the inherent harm of a behavior or its pervasiveness that creates changes in law, but rather it is the powerful groups in society that shape the contours of criminal law (Burke 2001:138-139). When applying this concept to environmental law, according to this perspective the legislature would decide to confer the criminal label upon those committing environmental harms or disregarding environmental regulations, which are usually companies. It is questionable whether businesses are the less powerful group in a society, and whether the legislature does it just to keep the power balance.

Normatively speaking, the question that still needs to be answered is which behavior is likely to be labeled as criminal. It seems plausible to say that it is the behavior that would challenge the position in society or norms of powerful groups. However, it is still unclear which behavior this is likely to be. The only answer given by the labeling theorists is the reference to four societal factors: age, gender, class and ethnic group. It is more likely that minors, women, lower class and ethnic groups will receive the criminal label (Quinney 1970). Unfortunately these notions are very broad and vague and cannot be used as normative criteria for criminalization.

This drawback of the labeling perspective has been pointed out also by its critics. Gibbs argues that labeling theorists offer no clear definition of deviance. According to them, deviance is present if societal reaction follows. However, not all deviants are detected; hence, deviance cannot be defined only in terms of societal reactions but also in terms of existing social norms,

which shape the definition of deviance (Gibbs 1966: 9-14). Another limitation coming from the conflict and radical theorists is that labeling theories neglect the structures of power that ultimately allow the construction of deviance (Burke 2001:145). Thus, these structures of power, for example the rich and the poor, are more clearly accounted for in these conflict and radical theories (as will be seen later). Moreover, the criticism was also that the deviant is not a passive actor at the mercy of official labelers, but is a decision-maker to break the law (Taylor, Walton, and Young 1973; Gouldner 1968: 103-16). Put differently, the offender should not be pictured only as a victim but rather as a person who chooses freely to deviate. Becker's response to these criticisms has been that the aim of labeling theorists has been modest. According to him, they merely wanted to balance out the traditional approaches within criminology, as these were severely biased against the deviant (Becker 1967: 239-47).

In overall, the labeling perspective shed some light on the question why certain acts are criminalized, but it provided few normative implications. In addition, this perspective lacks the power of a clearly defined theory. Its explanation of criminalization, as a conferral of a criminal label on certain behaviors by the powerful societal groups, is vaguely defined and does not give any clear indication under which circumstances the society is likely to use more of criminal law sanctioning.

3.3 Conflict and Radical Theories

Conflict and radical theories have developed as a response to the criticisms directed towards the labeling perspective. According to them, the labeling 'theory' does not go far enough in acknowledging the origin and capacity of powerful groups to make laws in their advantage. Conflict theorists argue that laws are formulated to express the values and interests of the most powerful groups in a society and to restrict the behavior common to the less powerful groups. Thus, the behavior of the members of these latter groups is disproportionately criminalized. The radical theorists go a step further in claiming that it is the capitalist economy that generates crime, as crime is a product of the social inequalities inherent to the logic of

capitalism (Burke 2001:14).[25] This claim might seem a little strange in today's society, but it should be noted that these theories gained popularity in the 1970s. The basic driving force behind these theories is the assumption that there is a conflict in society over who gains power and control, which in turn is a driver for change towards more efficient structures. This social struggle is said to be inevitable in a pluralist society. As such, according to these theories, a social consensus is a temporary situation managed by those with a substantial power in a society (Burke 2001:132-133, 147).

3.3.1 Conflict Criminology

According to the conflict theory, it could be implied that the main reason why criminalization is used in some circumstances but not in others is that it reflects the interests of the most powerful groups in society. Thus, the whole process of law making, law breaking and law enforcement reflects this struggle between groups. As the less powerful groups do not have sufficient means to push forward their interests, their behavior is most likely to be defined as criminal, if this leads to the advantage for the powerful. According to the conflict theorists, criminalization of these acts then justifies their enforcement on behalf of the ruling group (Vold, Bernard, and Snipes 2001: 352).

The question that deserves attention is why these "labels" imposed on the minority groups are seen as legitimate even by those that are labeled so. Turk argues that this is because coercion is exercised by those in control, through the control of legal images, as well as because of the effect of time. What he means is that as people get accustomed to domination and control, they will not question it (Turk 1969). According to Quinney, diffusion via means of media communication helps to sustain politically constructed conception of crime (1970). Moreover, the lack of sophistication among the subordinate groups is another reason why the minority groups choose to "accept" the labels conferred upon them (Quinney 1970:15-23).

[25] On 'criminogenic' (crime producing) capitalism, see Taylor, Walton, and Young (1973).

The main problem with this theory of criminalization is again the lack of clarity which acts (and groups) are more likely to be labeled as criminal. Furthermore, the theory does not aim to give any normative implications about when criminalization should be used.

3.3.2 Radical Criminology

The main concern for radical criminologists is that criminalization is used to preserve social order, namely a capitalist society. For example, the statutes may be designed to express a purpose and keep the ruling class in its powerful position: "to force laborers to accept employment at a low wage in order to ensure that landowner has an adequate supply of labor at a price he could afford to pay" (Chambliss 1964:69; Chambliss and Seidman 1971). Thus, according to this perspective, the main task of radical criminologists has been to expose to the public the truth about why specific laws are being made and to uncover the wrongdoings of the powerful class, which is responsible for these 'unequal' laws. As such, they suggest an explanation of criminalization based on Marx, because capitalism produces these social inequalities and problems, which give rise to crime. There are several propositions found in Chambliss: (1) acts are defined as criminal because it is in the interests of the ruling class to define them as such. (2) The ruling class violates the law with impunity, while the powerless are harshly punished. (3) With the rise of capitalism, the gap between the classes widens and hence, the criminal law will expand to coerce the working class into submission. (4) Acts are criminalized in order to reduce the surplus labor and create employment for criminals, as well as for law enforcers, welfare workers and all people who live off the fact that crime exists. (5) In addition, crime diverts attention of the lower classes from the exploitation, and directs it towards their own members. According to this perspective, certain acts are criminalized because the ruling class wants to have these acts criminalized (Chambliss 1975:152-155). Radical criminologists argue that the only way to eliminate crime is to destroy inequality and thus the power and the need to criminalize (Taylor, Walton, and Young 1973).

This generalized prescription for a crime-free society has been regarded by the critics as utopian (and I think not only by the critics). According to Burke, similarly as in case of conflict

theories, there is no adequate definition of crime and deviance. He adds that in general, it is difficult to encompass the diversity of criminal behaviors into one grand theory (Burke 2001:155-156). Due to this diversity of criminal behaviors, it is unlikely that the laws can be made only in order to repress the working class. Rather law was their instrument of authority (Thompson 1975; Hay 1981:24-25). In addition, Burke summarizes, that first, there has been no comparative study done in a non-capitalist society, which would work as a benchmark for assessing criminalization, second, it is usually the lower class that commits the majority of crimes, hence that is why criminal sanctions are mostly imposed upon the lower class and should not be seen as unjustly impsed, and third, it might be naïve to think that crime would disappear with the rise of socialism (2001). Therefore, what can be concluded is that the explanatory power of criminalization of this theory seems to be very low.

To sum up, despite their interesting explanation of the use of the criminal law, conflict and radical theories fail to answer sufficiently the question why some acts are criminalized while others are not. In addition, these theories do not provide (or aim to provide) any normative criteria for criminalization.

3.4 Critical Theory

Unlike the conflict and radical criminologists, critical criminologists define crime in terms of oppression. In their view, vulnerable groups are more likely to suffer oppressive social relations, based upon class division, sexism and racism. Their main concern is that working-class crime is insignificant when compared to the 'crimes of the powerful', which largely go unpunished, generate material advantage for the offenders, who have their own lawyers and lobbyists, or are portrayed as wealth-creating and entrepreneurial (Burke 2001:173-177). Put differently, some crimes are not enforced, while some acts (committed by ethnic minorities, women, *et cetera*) become part of the criminalization boundary even if these behaviors do not seem to justify it (Lacey 1995:7-8). Hence, this could be seen as a process of categorization and

discrimination. Therefore, these critical criminologists advocate that more attention should be paid to the crimes of the powerful (First argued by Sutherland 1940: 1-12).

This has been done by several critical criminologists who focused mostly on 'white-collar' crime. Mars argues that there is only a fine line between "entrepreneurialism and flair" and "sharp practice and fraud". This is why activities of the powerful are not perceived as bad/criminal, even though they lie at the border of criminal activities (can produce deaths and illnesses) (Mars 1982). This description of 'white-collar' crime would directly apply to environmental crimes, since most of the violations are related to business activity. Conventional wisdom sees a negative relationship between economic profits/growth and environment. This example goes against what the theory is predicting, since it is these business activities that are criminalized. This might have to do with the fact that these theories come from the 1970s, when criminalization of environmental violations was at its beginnings. The main point of these theories according to Box was to show that corporate crime is indeed serious and harmful, and that it protects the powerful segments of society who benefit from this crime: "not only does the promotion system mean that people who rise to the top are likely to have just those personal characteristics it takes to commit corporate crime, but these are reinforced by the psychological consequences of success itself, for these too free a person from the moral bind of conventional values" (1983:39:39). This argument might sound fairly exaggerated, but the idea is to convey a message about the inequality of sanctioning between the 'powerless' and the 'powerful'.

According to Reiman, criminalization occurs when the less powerful protest. In his view the ruling class wants "the rich [to] get richer, and the poor [to] get prison" (1979). Therefore, criminalization of an act, according to this perspective, seems to be used to justify taking of measures to control the less economically and politically powerful groups who have fewer means of resisting. If their activities are criminalized (and hence the controlling of deviance/protest is legally justified), this is a way to preserve social order and avoid social unrest. Thus, the whole point of using criminal law is not about solving crime as such, but about

uniting people against the "deviant" (Burke 2001:178-180). This could be seen as a normative implication of this approach.

The main criticisms of this criminological theory have been that this view of the world is too simplistic and a denial of reality. The individual nature of criminality cannot be simply regarded as a manipulated construction of state. It has been further claimed that the assumptions, (1) that the aim of criminal behavior is to put down the present social order and (2) that the purpose of criminal law is to restrain the power of the less powerful groups, are not plausible (Burke 2001). This makes the explanatory power of this approach doubtful.

In addition to these conflict-based theories, other criminologists, such as Lacey, argue for a general theory of the "frontiers of criminality." She argues that criminalization should be influenced not only by what the state wants to criminalize (as in criminal legal theory), but also by non-state actors, such as individuals and groups, and their *interpretation* of these *processes* (Lacey 1995:25). In other words, this might mean that what she is arguing for is also criminalization as a socially constructed process, taking into account all state and non-state parties. Nevertheless, this does not seem to provide any clearly structured framework of analysis for criminalization.

3.5 Corporate Actors and Enforcement of Environmental Law

The role of criminalization in case of environmental violations has been discussed by criminologist Henk van de Bunt in late 1980s (1989: 1-76). In his book, Criminal Enforcement of Environmental Law ("Strafrechtelijke handhaving van het milieurecht"), he questions the role of criminal law as *ultimum remedium* for these violations, since according to him, in practice this statement is used only to legitimize the inaction of the public prosecutor with regard to the criminal enforcement of environmental violations. He adds that the main reason why criminal enforcement is seen as last resort remedy in these cases is the fact that environmental violations are assumed to be ethically indifferent, which according to him is an inadequate

assumption (Van de Bunt 1989: 1-76). Furthermore, in his view criminal sanctions are incorrectly shown as disproportionately severe sanctions, except of the imprisonment, which is hardly imposed anyway. Thus according to him, limiting the use of criminal sanctions in case of environmental violations is not based on sound arguments, rather it seems to be used as a justification for inaction, and hence, he suggests that the role of criminal law with regard to the protection of the environment should be strengthened (Van de Bunt 1989: 1-76). This is in contrast to the views of the legal scholarship discussed in the previous chapter, which suggests that criminal law should be used as last resort because of its severe sanctions and strong moral connotation (e.g. see Commissie Heroverweging Instrumentarium Rechtshandhaving 1995:66).

In addition, a couple of Dutch scholars have conducted a research on the effectiveness of environmental law enforcement (Struiksma, De Ridder, and Winter 2007). The main question of this research was to analyze which enforcement instrument is the most effective in a certain situation in case of environmental violations. Based on the assumptions found in the literature about the relationship between the characteristics of a case and effectiveness of criminal enforcement, administrative enforcement and the combination of both, the authors have developed a "decision-making model". Depending on the particularities of a certain environmental case, this model attributes an ideal enforcement instrument. Further, this model was tested on 58 case studies, however, it was found that in reality, only a small portion of cases is actually enforced according to the predictions made by the model, and hence the enforcement instrument does not seem to be effective in all cases. This shows that habits and normative considerations about the appropriate enforcement approach are also important when deciding which enforcement instrument to use (Struiksma, De Ridder, and Winter 2007). The problem is also that the two enforcement bodies, public prosecutor and administrative authorities do not always cooperate sufficiently. In the Netherlands, the dominant enforcement strategy model is Braithwaite's pyramid, "responsive regulation" (Van de Bunt, Van Erp, and Wingerde 2007: 386-399). According to this enforcement model, regulation should be responsive to industry and to the behavior of its players. In other words, enforcement should be tailored to the behavior of the violators, starting from persuasion or

'light' sanctions, and once this does not lead to compliance, the regulator would move to more severe sanctions (Ayres and Braithwaite 1992: 205). These also act as a threat and a motivation to comply (Ayres and Braithwaite 1992: 205). As such, this model is trying to find the right balance between persuasion and sanctioning. Thus the issue of enforcement is more a question of applying cooperative or punitive strategies in order to secure compliance.

Other criminological research focusing on corporate behavior (which is in a way related to the discussions on "white-collar" crimes) stressed the importance of supervision and control with regard to the behavior of firms and their employees (Van Erp et al. 2008). In the Netherlands, the regulators have the possibility to impose criminal and administrative sanctions. As mentioned earlier, originally, social-economic regulatory law was mainly sanctioned by criminal law, however, due to the lack of capacity and diminished quality of enforcement, administrative sanctions, including administrative fines, became more and more used instead. In some areas, the provisions were even taken out of criminal law and placed under administrative law (Van Erp et al. 2008:88). However, the authors state that there is little known about the number of imposed criminal and administrative sanctions on companies, as well as about the effectiveness of these sanctions, control strategies or enforcement styles, as there is little empirical research done (Van Erp et al. 2008:87-88). The scarce empirical research within this area does not allow for credible conclusions to be made based on evidence but merely based on belief. The traditional view in the literature is that companies will comply because of the threat of sanctions. However, recent research shows that this might not be the case (Van Erp et al. 2008). According to Gunningham et al., it was shown that criminal sanctions are only seldom known to companies and that the size of the fine was estimated by the companies to be much lower than the size of the fine actually imposed (2005: 262-288).

To summarize, the brief sketch of the criminological literature on the enforcement of environmental law and on corporate actors suggests that first, classifying criminal law as *ultimum remedium* in case of environmental violations seems to be just an excuse for inaction by the public prosecutor, and its role should be strengthened. Second, there is a need for more

empirical research in order to be able to conclude which enforcement mechanism is more effective, and lastly, supervision and monitoring of compliance by corporate actors is important.

3.6 Limitations of this Approach

As has been discussed in this chapter, criminological theories have explained criminalization in terms of a social conflict, or have questioned the legitimacy of the actions of the enforcer. Thus, according to the 'victimized-actor model', criminalization occurs as a response to a political or a structural struggle between different groups in society. According to this perspective (with minor variations between the different theories), it is the powerful groups that determine changes in law, and hence, also for which acts criminal sanctions should apply. However, as mentioned already, the concept of what determines deviance is very vaguely defined and no clear criteria for criminalization could be implied from it. In addition, Rock argues, the whole process of criminalization cannot be explained purely in terms of a social conflict, as even in a pluralist society, the different interest groups share some basic common values of what is right and wrong (1974: 139-149).

The criminological approach is very interesting and definitely attracts attention particularly with regard to the development of "white-collar" crimes. This theory could also become very popular among the public because showing that powerful rich are taking advantage of the poor could appeal to the average citizen. Furthermore, making conclusions based on sound empirical analysis as suggested by criminologists would definitely be an important contribution, also for the economists dealing with this topic. However, this criminological approach does not aim or seem to have sufficient explanatory nor predictive power with regard to the question why certain acts should be sanctioned criminally while others not. Rather the focus of criminologists seemed to be on the analysis of factors or motivations which make people and companies comply or not with law - thus, it looked more into the behavioral aspects of enforcement, i.e. how enforcers or actors think, and based on that, regulators can respond accordingly. In other

words, it could be implied that the choice of enforcement instrument is based on the characteristics and behavior of the offender (I would call it a psychological approach), rather than on a cost-benefit analysis of using a particular enforcement instrument to attain compliance. As could be seen from the study on the application of Braithwaite's pyramid in the Netherlands, regulators do not always enforce accordingly (Van de Bunt, Van Erp, and Wingerde 2007: 386-399).

3.7 Conclusions

To conclude, this chapter briefly sketched the main arguments of some criminological theories, which tried to explain why criminalization is used in a society. The common feature of these theories has been their focus on criminalization as a result of social conflict between various groups in a society. In simple terms, according to this perspective, criminalization occurs because the powerful groups in society impose criminal law sanctions upon the weak groups, such as on minorities or women. The aim of the labeling theorists was very modest: their main argument was that a behavior in itself is not inherently criminal, rather it is the social reaction to it, which labels this behavior as criminal. Conflict and radical criminologists went a step further by elaborating on the power structure of the society. Conflict theorists argued that laws were formulated to express the values and interests of the most powerful groups in a society and to restrict the behavior common to the less powerful groups. The radical theorists took a more Marxist approach by claiming that it is the capitalist economy that generates crime, as crime is a product of the social inequalities formed by the capitalist society. Critical criminologists defined criminalization in terms of oppression against the less economically and politically powerful groups. According to this theory, criminalization is a way to preserve social order and avoid social unrest.

The aim of these theories was to explain criminalization as a social-political process. The concept of deviance has been vaguely defined, which makes it difficult to derive any criteria for criminalization. What the aim seemed to be was to bring attention to the sometimes unjust and

abusive treatment of the disadvantaged groups in a society by the more powerful. Enforcement through criminal law is seen as one of the means to achieve these goals. Therefore, it could be implied from this discussion that from a normative perspective, these theories would argue for a cautious and limited use of criminal law as an enforcement mechanism. Nevertheless, more recently there has been a deviation from this perspective and the focus seemed to shift to analyzing more the behavior and motivation of actors and how the regulator should respond. It was also suggested that more empirical research should be done in order to derive conclusions based on evidence rather than on belief.

The following chapters will take a completely different approach to the use of criminal law as an enforcement mechanism. This approach is law and economics, or the economic analysis of law, which is also the main methodology used in this dissertation. First, the economic approach to criminalization will be discussed (Chapter 4). Second, the economic framework developed in chapter 4 will be applied to environmental violations. Chapter 5 will present and compare the enforcement mechanisms of environmental law in four European countries and derive some indication into whether enforcement through criminal law is the best instrument to use. Chapter 6 will try to theoretically underpin the conclusions in chapter 5 through the use of a simple economic model.

Chapter 4: Economic Criteria for Criminalization

4.1 Introduction

Criminal legal theory (Chapter 2) and criminological theories (Chapter 3) have explained criminalization as a legal or social process, which focused predominantly on the individual. The legal scholarship paid attention to how best to protect the individual, and the society that he belongs to, against the state by invoking criminal sanctions only against those that deserve it. The primary goals of criminal law were deterrence, punishment and censure. On the other hand, criminologists in the 1970s portrayed the offender as a victim of social conflict upon whom the criminal label was imposed in order to maintain the existing power structure in the society. Economists, and particularly those involved in law & economics, have also devoted a lot of attention to almost every aspect of criminal law, if not to all (for an overview see Garoupa 2009: 458). The main purpose of this dissertation is to investigate whether there exists an economic explanation why society should enforce through criminal law, and whether there is an economic justification for having two separate public law systems, criminal and administrative law when the goal is the same: deter and minimize the social cost of harms. The neoclassical economics takes an individual as a rational being who does not make systematic mistakes. In a stricter version of the definition of rationality, which is sometimes contested, the individual calculates the costs and benefits of an action and optimizes his decision accordingly. To give an example, an offender will weigh the benefits of robbing someone against the costs he might incur once caught. The benefits will reflect the total value of money or goods he manages to steal, while the costs will reflect the expected penalty he is facing. In the next chapters, this economic framework will be applied to environmental violations where the majority of offenders are legal entities, firms or natural persons acting in a professional function (on behalf of a firm). Since the decisions are made by managers on behalf of the firm, within this context, I believe it is plausible to assume that managers are rational even in the stricter sense, and do not violate environmental law for the sake of causing environmental damage as such, but to maximize utility (profits). However, as there are multiple decision-makers within

the structure of a firm, it might arise that the costs and benefits of non-compliance might not fall on the same party.

Once the offender decides to violate, the state has to decide whether, to what extent and by which means it will sanction this violation. There is an enormous amount of literature on this so-called optimal law enforcement. These studies researched how potential offenders react to changes in legal policies, and hence, to changes in their incentives in order to design the optimal mix of enforcement strategies (Polinsky and Shavell 2007: 2 v. (xxii, 1738 p.); for example see Becker 1968: 169-217; Garoupa 1997: 267-295). In a nutshell, optimal law enforcement maximizes social welfare. Social welfare is defined as total social benefits minus total social costs, including the costs of harm and enforcement (external costs), as well as any private costs incurred. There is a debate in the literature on whether private benefits of violations should be included in the total social benefits or not. This is because the goal is to deter these "socially illicit gains". An enforcement instrument, which maximizes social welfare is said to be the optimal or efficient instrument. This approach boils down to the basics of what economics is about: allocation of scarce resources. Given that resources on enforcement are limited, they should be allocated efficiently. The main purpose of this chapter is the identification of criteria that justify the choice of criminal law enforcement instruments over administrative sanctions or damages in tort law to address harmful activities, based on this efficiency benchmark. This directly contributes to answering the research question why society needs enforcement through criminal law as opposed to enforcement through administrative and private law when trying to minimize the social costs of harms. Developing a framework of economic criteria for criminalization will provide important insights into identifying circumstances under which criminal sanctions could be the best instrument to use in order to reach the goal of maximizing social welfare (or minimizing social costs).

All three legal instruments are a means to further social goals. The focus is not only on the distinction between tort and crime, as has been largely done in the economic literature, but also on the comparative advantages of criminal law *vis-à-vis* administrative law. This has not

been sufficiently elaborated upon in the economic literature; most of the time it has been grouped under the heading of public enforcement. One of the reasons for it might be the fact that the institutional differences between administrative and criminal sanctions have not gained sufficient importance for economists. The reason for it might be that from an economic point of view, there seems to be not that much of a difference. A sanction is taken in a broader sense as a cost, and whether it is imposed through the criminal process or via administrative law seems at first blush to be irrelevant to economists. However, there are important differences between the two sanctions and a distinction should be made.

A paper by Bowles, Faure and Garoupa has tackled this issue of the scope of the criminal law similarly (2008: 389-416). This chapter elaborates on their analysis by considering the level of harm, administrative costs of enforcement, a more elaborate analysis of stigma, as well as the educative role of criminal law, as factors for the justification of criminal law enforcement. Ogus in his work has also devoted some attention to this issue (2004: 42-56; 2007: 107-113). The approach used is a conditionally normative analysis. Assuming that efficiency is accepted as the normative goal of criminal law, criteria for criminalization will be analyzed. This assumption of efficiency should not go without discussion as it is highly criticized among legal scholars. However, it is accepted as a normative goal within economics, and it will be assumed also in this dissertation.

This chapter is organized as follows: Section 4.2 starts with answering the question of why society needs law at all from an economic perspective. In this section, the discussion about internalizing the results of harmful activities will be presented. Given that society has different systems of enforcing rules, the discussion in section 4.3 moves to the question of which criteria make public regulation preferable to private regulation. Next, given that within public enforcement different legal remedies are available, in section 4.4 the question of why society needs criminal law as opposed to administrative law to internalize social harm will be dealt with. It is not intended to claim that criminal, private and administrative laws are independent mechanisms as in reality they are usually treated as complements. What this chapter tries to

identify is a set of normative criteria which would provide some trade-offs between using criminal and private/administrative sanctions. Section 4.5, based on the analysis in the previous sections, will develop economic criteria for criminalization, which indicate circumstances under which criminal sanctions would be the most appropriate legal remedy. Finally, section 4.6 will give some concluding remarks.

4.2 Why Do We Need Law? Harmful Conducts in Economics

The discussion on the choice among the possible enforcement instruments should not be started without first understanding why the society needs to control some of the activities by law from an economic perspective. According to Coase's framework, under the condition of negligible market transaction costs, bargaining between the parties will lead to an efficient outcome irrespective of the legal rule in place (1960: 1-44).[26] However, when market transaction costs are high, this might prevent such an efficient outcome from taking place. Even though based on this rationale, voluntary market transactions are to be preferred, and hence exchanges between people should be done via the market without the involvement of courts, Calabresi and Melamed's framework shows that in some situations market transactions are not desirable and should be prevented (1972:1111). This is particularly in case of violation of body integrity, such as for example the sale of organs. This can be done via prohibiting the exchange in question by law. Hence legal rules are needed in order to encourage or discourage market transactions from taking place.

An example for the necessity of legal rules is harmful activities. Harmful activities are those where social costs outweigh social benefits (Shavell 1993: 255-287). Most of the harmful activities create negative externalities. These occur when certain harming actions have a negative impact on second and third parties (spill-over effect) while only the first party (the injurer) can reap the benefits, such as a polluting factory. This prevents the injurer from taking

[26] Market transaction costs include searching and investigating parties to the transaction, negotiations, reaching an agreement, monitoring, enforcement and strategic behavior.

the optimal level of care as some of the costs of his actions are shifted to others. However, law can create incentives (for example via liability for the negative externality), which affect the wrongdoer's net utility (benefits minus costs), and hence his decision. In this way, the negative externality is internalized. 'Internalization' in this case means that the producer of a negative externality bears the costs of it (is held liable), and hence the objective is to create such incentives in terms of legal policies at the lowest possible cost in order to achieve compliance. Crime, according to the economic perspective, is a non-consensual harm to someone else and/or to the society as a whole (third parties) (Bowles, Faure, and Garoupa 2008:396). For example, theft is a direct harm to the person from whom something is taken, but it also indirectly affects the neighbors who may start feeling unsafe and hence invest in extra protection.

There are generally three legal instruments and their combinations to deal with harmful behavior: (1) private law (generally tort law[27]) by means of injunctions or damages, for example; (2) administrative law (regulation) by means of administrative measures or fines, for example; and (3) criminal law by means of criminal fines or imprisonment, for example.[28] In their basis they differ in the type of institution (court, agency) which imposes the sanction (also depends on the country). In addition, it should be mentioned that there is a variety of non-legal remedies, such as enforcement through social norms, reputation or negotiation. The last alternative is of course to do nothing.

4.3 Criteria for Public vs. Private Law Enforcement

This section narrows down the question of why society needs law from an economic perspective to the question of why society needs public enforcement. The meaning of public enforcement (or enforcement through public law) is that a public enforcement organ (thus on

[27] Harmful conducts are generally dealt with tort law and not by contract law, which deals with voluntary arrangement made between the parties. In addition, contracts are *ex ante* usually not possible between the injurer and the victim.

[28] It should be noted that all of these instruments possess a much greater variety of sanctions. The listed ones are only the most known.

behalf of the state) deals with the offence by imposing a criminal or an administrative sanction. Private enforcement (or enforcement through private law), on the other hand, is initiated by an individual (or a group or a company), and the offences resulting in harm are usually dealt with by tort law. Most of the economic literature assumes public enforcement to consist of merely the criminal law.[29] In practice, it is not uncommon that both sanctions apply to the same violation, or that there exist grey areas where the use of the criminal and private law blurs (Coffee JR. 1992: 1875-1893; Coffee JR. 1991: 193-246). The offender is often involved criminal as well as civil proceedings at the same time.

From a law and economics perspective, the justification for the existence of criminal law is the fact that civil suits cannot always internalize the costs of crimes (Cooter and Ulen 2007: 592). A vast amount of literature discusses the conditions under which public enforcement is more efficient than private enforcement. This problem could also be seen as a problem of looking for a system that reveals most information at the lowest possible cost. The more information is available to the enforcer, the more accurate decisions can be made, which in turn increases efficiency. There are several criteria for public enforcement found in the literature (Bowles, Faure, and Garoupa 2008: 389-416; Shavell 1984a: 357-374; Van den Bergh and Visscher 2007: 1-25). This paper identifies six criteria which could justify the use of public enforcement. These are:

1. intent (harm intended)
2. imperfect detection and enforcement by private law parties
3. the level of harm
4. low probability of detection and sanctioning
5. compensatory vs. punitive nature of law (the aim of enforcement)
6. administrative costs of enforcement

[29] Theoretically there could be a case for private enforcement of criminal law, as has been possible for example in the United Kingdom. However, this topic lies outside the scope of this thesis. On private enforcers, see Landes and Posner (1975: 1-46).

4.3.1 Intent

Intent, or *mens rea*, as discussed in Chapter 2, is a formal element of crime according to the legal scholarship. The principle of *mens rea* states that defendants should be held criminally liable only for those actions they intended to do. Hence, this criterion relates to the mental state of the offender. However, there is a scale of 'faults' involving some form of 'guilty mind' ranging from intent (deliberate causing of harm) to negligence (failure to take care).[30]

From a law and economics perspective, if intent is present, public enforcement might be preferred to private enforcement because having an intention to cause harm *increases the probability of actually causing harm*. Furthermore, the offender will take measures to decrease *the probability of detection*. If the offender intends to do harm, he is more likely to try to conceal it than in case of an accidental harm. Hence, intent might require a public agent to acquire information and investigate, which might not be done by the private agent. It also *affects the willingness to enter into private negotiations.* If harm is caused deliberately, it is more likely that the offender does not want to enter into private negotiations with the potential victim. This is because his intention is to bypass the market in order to avoid paying compensation/price to the victim, such as in the case of theft of robbery (Landes and Posner 1981:135). In all these circumstances, investigative powers as well as severe or non-monetary sanctions might be needed, which can be provided only by public enforcement (and particularly by criminal law). Thus intent could be one of the normative criteria for criminalization.

When looking at the reality, this criterion is not particularly adhered to. The exclusion of intent in strict liability crimes as a requirement for establishing a criminal offence further blurs the 'civil-criminal-regulatory' distinction (discussion in Coffee JR. 1991:210-213). There are strict liability crimes which require no proof of intent (regulatory offences), and *vice-versa*, there are intentional torts, which require some form of a guilty mind and still are not sanctioned under criminal law. In addition, even in administrative offences one can find intent (Weigend

[30] In between there is recklessness (conscious disregard for risk) and knowledge (knowledge there was a crime).

1988:26). Hence, from a positive point of view, intent is not a distinguishing characteristic for public and private enforcement.

4.3.2 Imperfect Detection and Enforcement by Private Law Parties

Imperfect detection by private parties implies that a public authority rather than a private citizen is more likely to detect an offence and communicate this signal to potential offenders. This might be the case when the public enforcer has an *informational advantage* about violations and/or when a private party has *imperfect incentives to detect and enforce a violation*. Public enforcers might have an informational advantage about the benefits of the risky activities, the costs of reducing these risks, the probability or severity of these risks (Shavell 1984a:359). The regulator can then better formulate the necessary standard for regulating a certain activity, which has to be observed and met by the regulated. For instance, in environmental law, the public enforcer has an informational advantage over private parties with regard to evaluating the risks of pollution, and due to its investigative powers also more knowledge about detecting a violation. If on the other hand, private parties have superior information about harms *vis-à-vis* the regulator, then spending resources on public enforcement of these harms could result in many errors (Shavell 1984a: 357-374). An obvious example is the case of accidents regulated by tort law. In these cases, it is difficult for the public regulator to have access to relevant information.

Generally, private parties should possess superior information about violations as people are directly involved in harmful activities. However, this information can be limited if it needs an effort to be developed or if special expertise is needed for its evaluation (Shavell 1984a:360). Hence, if the *nature of the information* is too technical or difficult to be understood and if one can benefit from *economies of scale* in collecting and processing the information, a public enforcer has an informational advantage over private parties. In addition, private parties might not have the incentives to develop information if they are unable to capture the full benefits of obtaining the information, while bearing all the cost. If others can get it for free after the first has obtained it, a *free-rider* problem will occur. Moreover, private parties might not know they

are victims or who and where the offender is. Or they do not consider the act as being offensive. Even if they do, they might not have the incentives to do something about it (*rational apathy problem*) (Garoupa 2001:233). Among the examples are victimless crimes or cartels. Individuals might not always have the incentives to do something about these violations, and hence, public authorities should collect the information, investigate and enforce instead.

Another problem is that private motives might not be identical to the social motives of investing in enforcement and bringing a suit (discussed in Shavell 1997: 575-612). Put differently, victims do not always have the right incentives to prosecute. As such, private parties might escape liability due to several reasons. There might be a *collective action problem* if harms are widely dispersed and no individual party has enough incentives to initiate a suit and to bear all the costs, while the benefits would be spread. This is similar to the *rational apathy problem* if there would be private enforcers; the victim would have to purchase the enforcement, while others would benefit without any cost from the lower number of offences (Landes and Posner 1975:29). If harm shows only after a longer period of time (*remote harms*), it is difficult then to collect evidence and sue (Shavell 1984a:363). The law generally does not allow a party to sue before harm occurs as there is no certainty that every harmful activity will end up in harm. A similar effect might happen if it is difficult to associate harm with a party responsible for it (a*ccountability problem*) (Shavell 1984a:363). Private parties might not have the incentives to sue also if there are *no (sufficient) financial gains from reporting* (Shavell 1993:267). Private parties usually want compensation and do not care about general deterrence. Victims may not wish to punish the offender due to victims' sympathy with the wrongdoer, or from fear of retaliation, embarrassment (*fear of retaliation/sympathy)* (Garoupa 2001:233). As to the latter, public enforcement could help by providing anonymity, protection programs, and the like. In case of *'public harms',* such as victimless crimes, a drug addict, for example (or an individual in general) does not have an incentive to fight drug crimes. But most importantly, if there is no individual victim, no compensation is possible under tort law. For example in case of environmental violations, if the damage done to the environment is in unpopulated areas, it is difficult to have any concrete victim.

4.3.3 The Level of Harm

Another element which appears in the law and economics literature, but seems to be intertwined with all criteria for public enforcement, is the level of harm. It seems logical to say that the more harmful an activity is, the more it should be controlled. If it is assumed that enforcement through public law, which includes criminal law, is the most coercive mechanism, it could be implied that the most serious harms should be controlled by public law. This is also based on the fact that remedies available under public law are more severe, than simple private law damages (with the exception of punitive damages in tort law in the United States). Similar insights could be derived from the principle of harm advocated by some criminal law scholars (discussed in Chapter 2). However, the choice of a control mechanism in economic theory seems to depend not only on the level of harm, but also on other factors, such as the enforcement costs. If harm is small and the enforcement costs are large, there would be a large sunk cost for a relatively small benefit. If harm is large, public enforcer might have higher incentives to control this harmful activity because then it is socially preferable to deter as many potential offenders as possible, even if the enforcement costs are large (Polinsky 1980:114). The question that still needs to be answered is what the critical level of harm is above which public enforcement is needed as opposed to private enforcement. There is no clear answer given.

One way of measuring harm, even if imperfect, is to look at the costs it entails to prevent this harm. For example, if an industrial installation is discharging toxic pollutants into surface waters, and the only way to avoid this harm is to close down the factory, the cost to the society would be the number of workers laid off. The benefit would be clean waters. Another way of measuring harm is the length of the recovery period. For instance, damage to the environment is considered ‘significant’ in Slovenia, if the recovery period is longer than five years.

Based on this analysis, it could be implied that for sufficiently small harms, it is not worthwhile to enforce through public law because the benefits (of deterring small harms) are lower than the costs (enforcement costs and forgone private gains). However, this might not be true if

public enforcement costs are sufficiently small, close to the private enforcement costs (Polinsky 1980:120). If this is the case, the "public" optimal level of harm could be smaller than the optimal level of harm under private law enforcement, and hence, public enforcement is more desirable to regulate the activities around this small harm level (Polinsky 1980: 105-127). This theoretical discussion would even be consistent with reality, which shows that even minor harms are enforced through public law (e.g. speeding), even through criminal law, a system with allegedly the highest enforcement costs. Similar conclusions could be drawn with regard to small 'public/victimless' harms, harms that have no direct victim, and hence, where enforcement through private law might not create sufficient incentives for the individuals to sue.

4.3.4 Low Probability of Detection and Sanctioning of Harms

The economic approach to law enforcement goes back to the seminal paper by Becker who argues that using a cost-benefit model a violation can be deterred when the expected costs of a violation are higher than the expected benefits. The expected costs of a violation refer to the expected sanction a violator might face when caught. The expected sanction (ES) is determined by multiplying the probability of detection and sanctioning (p) with the severity of the actual sanction (S) (Becker 1968: 169-217).

$$ES = p.S$$

Based on this deterrence hypothesis, the rich and abundant literature on economics of crime and law enforcement suggests that potential offenders respond to the incentives created by the criminal justice system and crime rates hence inter alia depend on risks and benefits of crime (Garoupa 1997: 267-295). The goal of policy making according to the economic framework is to induce compliance at lowest cost. Assuming that potential criminals are rational utility maximisers, and risk neutral who base their decisions to commit or not to commit a crime on an expected utility calculation, they will comply with the law as long as their benefits of compliance outweigh their costs of compliance. This Becker model and the

rationality framework as such have not gone without criticisms. However, at least people's behaviour can be analyzed "as if" they were rational.

The strongest argument for public enforcement in the literature has been the fact that some violations have a low probability of detection. Low detection and conviction rate of harmful behavior means that not all wrongdoers are caught. This might be due to several reasons: intent in committing harm (the wrongdoer will try to conceal his act and escape liability); not all offences are reported; arrests do not necessarily result in convictions (Shavell 1993:275); and there is a limit on enforcement resources (Landes and Posner 1975:36-37). The probability of detection also depends on how many offenders there are. The larger their number, the lower will be their individual probability of detection, given a fixed budget. Thus the optimal probability of detection and sanctioning depends on both, fixed and variable enforcement cost (Polinsky and Shavell 1992: 133-148). Having $p < 1$ is a typical case of crime or of an administrative offence, where the offender tries avoiding being caught since the activity he engages in is unlawful/illegal in the first place. On the other hand, in case of accidents (a typical tort), there is a higher likelihood that the wrongdoer would be caught (mostly $p = 1$), because the action is usually not planned, the victim is usually present, knows the identity of the offender, and has the incentives to report as she could in principle collect damages. Hence, the question is how to deal with harms, which have a low probability of detection.

Following the Becker model discussed above, private law remedies, where the damages awarded usually equal harm done, are sufficient in cases where the probability of detection and sanctioning approaches unity. However, if $p < 1$, in order to attain optimal deterrence, more severe sanctions are needed in order to compensate for this low probability. This can be only achieved by public enforcement, because first, it has the option to prescribe a higher sanction than the level of harm (unlike in tort, with the exception of punitive damages, discussed later on), and second, it can attain the optimal mix of detection rate and punishment given a level of deterrence. In other words, there is a negative relationship between the probability of

apprehension and the severity of a sanction (if probability of detection decreases, the optimal sanction should increase to compensate this).

What should be born in mind is that what matters for the offender is the *perceived* probability of detection and sanctioning. The probability of detection and sanctioning by enforcement agencies is usually endogenous, dependent on the resources available. The offender himself can over- or under-estimate the probability, while his risk attitude can also change the way he sees the expected sanction. Highly risk-averse individuals will be deterred even with a lower expected sanction. In addition, it is sometimes debated whether liability should be based on the harm to the victim or the gain to the injurer (Polinsky and Shavell 1994: 427-437). If gain to the wrongdoer is smaller than the harm to the victim (socially undesirable acts, assuming zero enforcement costs), then by definition, a smaller penalty should suffice to deter the potential wrongdoer. However, according to Polinsky and Shavell, harm-based liability is preferred if there is a risk of legal errors in assessing the gain to the wrongdoer because a slight underestimation of the gain by courts might create under-deterrence for the injurer (1994: 427-437). In tort law, liability is usually based on the victim's loss, while in public law enforcement, sometimes the level of the sanction also depends on the gain to the injurer. This is most evident in environmental cases, where it is easier to assess the value of the not-installed pollution filtering equipment, than the value of the widespread harm to the victims.

An answer to a low probability of conviction in private law could be punitive damages awarded through tort law. Unfortunately they are available in the United States, however absent in European jurisdictions. Some European countries have "hidden forms" of punitive damages, such as for example aggravated damages in the UK, or when damages are based on the benefit to the offender rather than harm, and if pain and suffering are considered in the assessment of the damages. Nevertheless, their availability in a legal system could have a deterrent effect and be used when there is a lower probability that a tortfeasor would be held liable (see for

example Polinsky and Shavell 1998: p. 869-962.)[31], when intent (extra utility) would be present (intentional torts such as theft or robbery) (Landes and Posner 1981:130)[32], or in order to encourage market transactions by making committing of tort expensive as market transaction costs are lower compared to the transaction costs of litigation (Landes and Posner 1981:135).[33] Punitive damages may also be justified if it is too costly to measure actual damages accurately, especially if they involve an individual and his subjective values (Landes and Posner 1981:135).[34] If damages are higher than the harm done, these could compensate for $p < 1$. For example, in antitrust cases, the damages could amount to double or even triple value. This makes them comparable to criminal sanctions, but because they are determined endogenously within the tort system and co-exist with severe criminal punishment, they cannot be viewed as an alternative to criminal law sanctions or an argument for decriminalization.

One problem with punitive damages, as well as with high criminal fines, is the problem of judgment proof/insolvency. The injurer/offender cannot pay the damages due to his limited wealth. This is an obvious reason why private enforcement does not always suffice. If the damages to be paid exceed the offender's assets, then his incentives not to harm above the value of his assets would be diluted. In private enforcement he could be made liable only up to the amount he is able to pay because tort law usually offers only monetary sanctions. This is problematic particularly in tort law as it usually offers harm-based sanctions (sanctions for harm that has occurred), which tend to be higher than act-based sanctions (sanctions for a harmful act, which occurred but the harm did not yet occur, such as attempts) or higher than preventative measures (measures to avoid harmful act from occurring), which are usually

[31] The wrongdoer can escape liability due to his intention to lower the p of being caught, but also if no intent is present, due to the problem of causation, cost of litigation, etc. see Miceli (2004:68).
[32] The wrongdoer increases real resources to cause harm. Criticism by David Friedman (2000).
[33] The argument of Landes and Posner is that if the injurer is indifferent between using the market and the legal system, and if transaction costs are low, then punitive damages are appropriate. This is similar to Posner's argument that sanctions should be used to avoid bypassing the market (these are "pure coercive transfers"), if transaction costs are low (unlike in the cabin example) as market transaction in these cases is preferable. Thus, there has to be an extra something added to the damages to encourage market transactions, see Posner (1985:1202).
[34] According to Landes and Posner, law cannot measure subjective values (how victims themselves value the harm). Hence, an extra cost has to be added to the damages to have an adequate sanction, see Posner (2007: xxii, 787 p.).

offered by criminal and administrative law as they focus on *ex ante* regulation (Shavell 1993: 255-287).[35]

On the other hand, under *ex ante* public regulation, insolvency should not pose such a problem, assuming that parties would be made to take precautions before causing harm (through police force for example), hence reducing the need for severe sanctions. This is the case if preventive measures and act-based sanctions are enforced, and hence harm is avoided (see Shavell 1984a:361; Shavell 1984b:274). Moreover, even the potential victims of crimes might have greater incentives to take precautions compared to the potential victims of torts, as the former cannot in general recoup the compensation for losses (but can sometimes file a private suit to do so). However, under tort law, parties might still be induced to take some level of care in order to avoid negligence or strict liability. Nevertheless, tort cases are mostly enforced *ex post*, when the actual harm occurred, which means that higher harm-based sanctions would apply, which could lead to the problem of insolvency if damages are high. If insolvency is a problem, and there is a low probability of detection, it might be difficult to reach optimal incentives to induce compliance if only private enforcement remedies are available.

4.3.5 Aim of Law: Compensatory vs. Punitive

The main distinction between tort and criminal law (ignoring administrative law for this moment) is sometimes seen in the literature in terms of whether the behavior should be priced (tort) or sanctioned (crime). According to this perspective, the goal of public enforcement, primarily of the criminal law, is to attach a sanction (for a prohibited act) payable to the state for activities that violate the fundamental community standards, and hence lack any social utility (even if the offenders were willing to pay a price for it) (Cooter 1984: 1523-1560;

[35] Norm formulation *ex ante* usually happens in criminal and administrative law because the regulator wants to set up rules and standards, which should be complied with. However, strict liability torts have also *ex ante* norm formulation. However, the damages in tort law are usually harm-based because a causal link has to be made between the act done and the losses herein incurred.

Calabresi and Melamed 1972: 1089-1128).[36] The punitive function of criminal law could be also found in the criminal legal theory, and also implied from the insights from criminology. On the other hand, the goal of tort law is to price (and hence to 'allow but pay') potentially harmful but socially desirable activities. Private law does not aim to punish, but rather has two functions: to provide a remedy for a return to the *status quo ante* and to compensate (Kennedy 2004:8). However, civil suits cannot always adequately internalize the costs of crimes, which provides a justification for the co-existence of public enforcement.

Firstly, there might be *imperfect compensation* via private law if there are immaterial losses causing pain or suffering from, for example, a loss of arm or a person. These non-financial losses are difficult to evaluate objectively and hence, the compensation might be insufficient for the victim. In addition, even if there is a financial loss, this can be compensated only to the level of wrongdoer's assets, which poses a limit on the level of compensation. Hence sometimes it is better to deter than to compensate. Secondly, *punishment might be needed for deterrence*, as the expected net benefit from crime should be negative, and sometimes private enforcement does not suffice to do this (the sanctions must be more than compensatory). Moreover, Calabresi and Melamed argue that in some cases, higher sanctions than harm are desired even if p = 1 (the so-called "kickers"). This is because for some harms only an approximate value can be determined. Especially in cases of bodily integrity, where an objective value cannot be measured, the expected sanction must be greater than expected harm, even if p=1, in order to prevent such "transfers" (Calabresi and Melamed 1972: 1089-1128). Thus in this case, it is not about attaining optimal deterrence, but about restricting coercive and inefficient activities completely.

Looking at the evolution of criminal law in practice, its extension into areas previously governed by tort law, shows that the normative distinction between compensatory vs. punitive goals does not hold. There are areas in criminal law where it seems that the law aims to punish (such

[36] Cooter does not directly associate the distinction between compensatory vs. punitive nature of law with the distinction between private vs. public law enforcement. According to him, negligence rule might also have a punitive aim (1984: 1523-1560).

as the traditional crimes), but there are also areas (such as strict liability crimes) where the law seems to price. As discussed in the previous section, there is the possibility of punitive damages in tort law, which also blurs the distinction between private and public law with regard to the aim of the law. Moreover, the standards (forming the basis for a prohibition) are constantly shifting over time. Hence also the decisions whether or not to merely price or prohibit behaviour shift as well. This can be illustrated particularly by the development of the so-called "white-collar" crimes, which, previously lacking any blame, became morally condemned (Coffee JR. 1991:197, 200). Hence, the aim of law as a normative criterion is not practically sound.

4.3.6 Administrative Costs of Enforcement (Enforcement Costs)

From a law and economics perspective, administrative costs of enforcement, or total enforcement costs of sanctioning a violation, do matter for optimal law enforcement. Obviously, a cheaper enforcement instrument, which attains the same results as the more expensive instrument is desirable. The cost of private enforcement generally includes the time, effort, and legal expenses borne by private parties during litigation or settlements, as well as public expenses of conducting trials, judges, etc. (Shavell 1984a:364). The cost of public enforcement includes the maintenance of the entire public system (criminal establishments, and courts, as well as working of the administrative agencies) and the costs of setting up and maintaining public regulations. Put differently, these administrative enforcement costs mainly include the costs of conviction (monitoring and detection costs) (so defined by Wittman 1977: 193-211). The level and the cost of harm (if an accident happened) or the benefit of avoiding harm (due to *ex ante* regulation enforcement) is not considered in the administrative costs.[37]

The advantage seems to be in favor of private enforcement, as the costs occur only when actual harm is done, unlike in public enforcement where detailed rules and regulations are enacted and monitored, irrespective of whether actual harm has happened (Shavell 1993:265; Shavell 1984a:364). These could be seen as fixed costs, independent of the number of convictions, unlike in tort cases, where substantial (variable) costs are incurred only if there is a suit (mainly

[37] Including these variables would mean that we are looking at the total 'cost-benefit' of a particular enforcement system, not only at its administrative costs.

under negligence where the court has to decide whether due care has been taken) (Polinsky and Shavell 1992:133). In addition, even if harm is done, the costs of private enforcement could be kept low as some precautions to prevent harm have been taken and not all cases are litigated in courts, but are settled privately (Shavell 1984a:364). However, enforcement costs depend also on *the likelihood of the occurrence of the harmful act*. These would be the so-called variable enforcement costs (Polinsky and Shavell 1992: 133-148). If it is unlikely that this act happens, *ex ante* regulation and enforcement could be very expensive and wasteful to regulate such an activity. On the other hand, if a harmful situation is likely to occur often, then investing *ex ante* into its monitoring and regulation and possible prevention might show its benefits. *Ex ante* monitoring can be done only by the government (Wittman 1977:207), and if there are many civil suits due to high occurrence of a harmful activity, private enforcement might be costly.[38] In addition, it seems plausible to conclude that regulating *ex ante* is more suitable for '*standard*', "fixed" objects (such as controlling licenses) rather than for "ordinary" changing behaviors (such as driving a car and having an accident) (Shavell 1984a:368). The costs of decision-making and information costs might be reduced by an *ex ante* regulation as the standard is computed by the public authority only once, while under *ex post* (negligence) liability, the optimal care level is calculated on a case-by-case basis (for discussion see Cooter 1984:1535). Thus enforcement costs are a good normative criterion for criminalization, but the main problem lies in quantifying them.

4.3.7 Conclusion

In conclusion, this section has discussed six normative criteria under which public enforcement seems to be preferable to private enforcement. Intent, imperfect detection and enforcement by private parties, the level of harm, low probability of detection, the aim of law as well as the enforcement costs all point to trade-offs between private and public enforcement. If intent is present, and if individuals do not have the incentives to sue, this clearly shows the need for

[38] As mentioned, the cost of harm is not included in the enforcement costs. Rather the enforcement costs are determined by the number of occurrences of the harmful act and hence, by the number of potential interventions by e.g. civil or criminal suits. If the act is prevented, there should be less suits, and hence, lower costs (assuming prevention measures are not so costly).

public enforcement. Large harm, coupled with a low probability of detection also point to the necessity of public enforcement. If the goal of law is punitive, rather than compensatory, public enforcement should be preferable. Lastly, if public law enforcement costs are sufficiently low compared to the private law enforcement costs, this would also indicate the need for public enforcement.

4.4 Criteria for Criminal vs. Administrative Law

This section narrows down the scope even further, solely to the category of public enforcement, within which criteria for criminal as opposed to administrative law enforcement will be demarcated. These two enforcement instruments work closely together and complement each other; nevertheless some normative criteria justifying their distinction as two separate systems from an economic perspective will be discussed. Criminal sanctions can be imposed by courts, while administrative sanctions can be imposed by an administrative agency (with a possibility of judicial review). There are also significant procedural differences, as discussed in chapter 1, which might have economic significance when deciding which enforcement mechanism to use.

This issue of the scope of criminal and administrative sanctions seems to be underdeveloped in the law and economics literature. This might be the case due to the aforementioned reason that from an economic point of view which agency imposes the sanction seems to be irrelevant. The main goal of administrative law enforcement is to make sure the relevant statutes and regulations are complied with, even against citizen's will, and in case of harm resulting from non-compliance, the aim is usually to restore this harm through reparatory measures (Seerden and Stroink 2007: 419). This aim is quite different from the aim of criminal law, where the goal is to punish, censure and deter. Nevertheless, administrative fines are said to be also punitive, as has been already discussed. From an economic point of view, both, criminal and administrative sanctions (namely administrative fines) have as a goal to internalize the social cost of harms by providing incentives for compliance (deterrence), or by making the offender

pay for his actions (punishment). A majority of the scholarly work takes public enforcement as solely the domain of the criminal law and hence, ignores the possibility of administrative sanctioning. However, criminal and administrative sanctioning offer different types of sanctions and follows different procedural rules, which makes the distinction relevant also for economists. Under certain conditions, criminalization might be more socially desirable than pure administration from an economic point of view. The four normative criteria identified are:

1. Imprisonment
2. Stigma
3. Deterrence vs. Compliance Strategies
4. Enforcement Costs

4.4.1 Imprisonment

The most obvious difference between enforcing through administrative and criminal law is the availability of imprisonment. Therefore, the use of criminal law enforcement should be justified if non-monetary sanctions, such as imprisonment are needed, and where monetary sanctions are insufficient to internalize the social cost of harms. Administrative law does have some non-monetary sanctions, such as suspension or revocation of licenses, or shutting down of a factory, which could have a strong deterrent effect, but it has no imprisonment. Monetary sanctions are not always sufficient to achieve the goal of criminal law, be it deterrence or punishment, if *the offenders are poor*, and hence do not have sufficient means to pay the sanction. This is because monetary sanctions can be imposed only up to the level of offender's assets. The lower the probability of punishment, the lower *the detection rate*, the more insolvency becomes a problem as higher sanctions, like imprisonment, are needed for optimal enforcement. If there are *large benefits from committing a criminal offence* or *harm is large*, the expected sanction must be high enough in order to deter/punish. The larger the harm, the more society values deterrence, and hence the more it is willing to bear the costs of imprisonment (Shavell 1985:1244). Administrative law does not provide such a severe sanction, which would internalize the cost of large harm. Neither will it work if the goal is to *incapacitate* the offender in order to prevent further harm by removing him from the population (incapacitation

discussed in Shavell 1987:107). Nevertheless, an "incapacitation" effect in administrative law might be achieved by the revocation or suspension of licenses. Ogus and Abbot argue that this might be even a more drastic measure than criminal sanctions, thus it could work as a strong deterrent (2002:294-295).[39] In addition, a problem with imprisonment as a valuable sanction in criminal law is that it is not applicable to legal persons, such as companies, only to natural persons. This is particularly relevant for environmental violations, where in majority of cases the offender is a company. However, criminal liability, including imprisonment, can be imposed upon natural persons acting on behalf of the company.

Even though it is established that in some circumstances imprisonment is needed, criminalization can be justified only if the means justify the ends. In other words, the costs of imprisonment have to be taken into consideration, and imprisoning someone should be effective enough in terms of decreasing the level of expected harm in order to justify its high social and enforcement costs (Cooter and Ulen 2007: 592; Shavell 1987: 107-110). From an economic perspective, fines in general tend to be favored over other kinds of punishment because they are cheaper to administer, determine the optimal severity of punishment easier, and provide compensation to the victim (Becker 1968:193-198; Stigler 1970:530-531; Posner 2007: xxii, 787 p.). However, as mentioned already, they are an effective deterrent only to the extent of the offender's assets, and moreover, fines impose some social costs as well (Shavell 1985:1235; Coffee JR. 1980: 419-476). Another option in case of the insolvency problem is to raise the probability of detection and hence decrease the level of the sanction needed for optimal deterrence (Polinsky and Shavell 1979: 880-891; Posner 1980: 409-418), which might be cheaper than to move to costly non-monetary sanctions. But raising the probability of detection might not always be possible at a low enough cost.

Why does administrative law not offer severe sanctions? The main reason found in the literature is the fact that in general administrative law has a lower standard of proof (with the exception of administrative penal law), which might increase the risk of making a judicial

[39] But they also argue that because revocation and suspension of licenses is so rarely used (in England), its credibility as a deterrent is problematic.

mistake when sentencing (*error costs*).[40] Criminal law, with its higher standard of proof lowers the risk of convicting an innocent person (on the costs of punishing the innocent see Miceli 1990: 189-201).[41] Hence, criminal sanctions should be applied to violations, which require a severe sanction (monetary and non-monetary), where the cost of error would be high and more accuracy in imposing a sanction is needed. This explains why for example, imprisonment is available as a sanction only in more stringent criminal law. On the other hand, if less accuracy is sufficient (because the consequences of a wrong judicial decision would be less harsh due to a less harsh sanction), less costly administrative sanctions could be applied.[42] *Ceteris paribus*, administrative proceedings and the imposition of administrative sanctions are less strict and more informal and therefore speedier and cheaper than criminal proceedings, which might help the administrative agency to increase the probability of conviction while keeping the enforcement costs low (more discussion on this in the next chapters).

4.4.2 Stigma

Another characteristic feature of criminal law is the stigma coming from a criminal sanction. It is a conventional wisdom that criminal conviction generates more stigma than an administrative penalty. There are two ways of thinking about stigma and criminal law. One way is to assume that stigma comes from the underlying act, such as murder or rape, and hence society criminalizes acts, which confer such a stigma or "blame". This could be associated with the principle of morality discussed in Chapter 2, which argued for the justification of the use of criminal law for morally wrong behavior. In this case, criminal law should be used because it 'punishes' behavior that the society believes is morally wrong, and it can offer appropriate safeguards to convict only those that deserve it. On the other hand, stigma can be seen as an endogenous factor to the policy choice. Based on this view, criminal law creates stigma, while administrative penalty does not. In this case, it is the sanction rather than the act itself that

[40] With the exception of administrative fines, which are considered as punitive in Europe, and hence follow the same standard of proof as criminal sanctions (according to Art 6 ECHR).
[41] Convicting an innocent person (Type I error) is regarded to be socially worse than acquitting a guilty person (Type II error). Ogus and Abbot (2002:296) argue that in some cases, such as suspension or revocation of licenses, even administrative penalties might have harsh error costs, while they do not offer adequate safeguards.
[42] The argument for more use of administrative sanctions with its lower standard of proof in case of environmental offences has been advocated by Ogus and Abbot (2002:294).

creates stigmatizing effects. Hence, criminalization should be used if society wants to create a stigmatizing effect. By criminalizing for example administrative infringements, the reliability of information about guilt could be diluted, and hence could create an inefficient and unfair stigma. This could be explained by the institutional differences between criminal and administrative law. As Garoupa and Galbiati explain, the stricter criminal procedure with a higher standard of proof is believed to send out more reliable information about guilt of the convicted because it tries to guarantee that less innocents are proven guilty (2007: 273-283). This would imply, as they argue, that stigma can be manipulated by the state. However, if it is assumed that stigma comes already from the criminal process, rather than only from the conviction, then this information might not give such a clear message. This is because not all those charged with a criminal offence are convicted.

Efficiency of enforcement through criminal law *vis-à-vis* through administrative law might depend on stigma because it can increase the deterrent effect of a criminal sanction *ex ante* without incurring additional enforcement costs. Stigma can be seen as an external incentive (such as penalties)[43] for people not to interact with a person who has been convicted (Rasmusen 1996:520). As such, a stigma creates an extra cost to the offender in terms of 'blame' and could be seen as an additional sanction to the imposed penalty. A higher standard of proof is needed to lower the costs of judicial mistakes, the so-called error costs, as now the consequences are the penalty as well as stigma. This is safeguarded by criminal law. Unlike legal penalties, a stigma is non-legally enforced and is like a fine put on future wealth (fines are constrained by the wealth of the offenders, stigma is not) (Rasmusen 1996:536). Even if the penalty is zero, the threat of stigma might suffice to deter crime by itself (Rasmusen 1996:526).[44] Being labeled as a criminal does have social and economic consequences as non-criminals tend to avoid interaction with (ex-) criminals (Rasmusen 1996:520). As a result, social acceptance and interaction is lowered as well as the opportunity of employment, which

[43] There is a difference between external incentives (penalties, stigma) and internal incentives (consciousness, guilt) that people respond to.

[44] The penalty might be zero when there is no trial or only probation is given; however, stigma can still arise merely from an arrest. As such, criminal conviction itself can generate stigma irrespective of the level of the sentence.

decreases economic gain due to the loss of salaries. Obviously, stigma is a cheap way to increase deterrence as it does not require any investment in enforcement (but it does not raise revenue like fines either).

However, there seem to be limits to its effectiveness. Firstly, the information that a person is convicted must be known to other people in order for them to make use of this information. Thus, the informativeness of the criminal record is crucial. Secondly, as already mentioned, the stigma effect can be diluted if the number of stigmatized is large, and hence, the criminal record loses its informativeness (Rasmusen 1996:541; Kadish 1963:424). There are even studies, which show that increasing the level of detection might under certain circumstances result in less stigmatization, and hence in less deterrence. In other words, as more people are stigmatized (this increases the costs to a certain type of stigmatizing population), the deterrent effects of stigma can be diluted (Harel and Klement 2007:362).[45] Thirdly, the deterrent effect of a stigma works under the assumption that the offender cares about this stigma. It seems plausible to suggest that white-collar offenders do care about not being labeled as criminal as they have more to lose (successful career, wealth, reputation).[46] However, it seems similarly plausible to assume that career criminals do not care about the shaming effect of a criminal conviction because for example in a gang culture, it is often a requirement to be a criminal, or at least it is considered an honor (X 2003: 2186-2207). The same can also apply to repeat offenders where the marginal effect of a stigma decreases with the number of convictions. Some even argue that a stigma works only once (for the first conviction), while penalties do have an effect each time they are imposed.

It should be noted that a stigma (assuming it exists) can also have an opposite effect that is enhancing recidivism (Funk 2004:724-726). This might happen if a stigma coming from a conviction does not allow the offender to interact and integrate into the non-stigmatized

[45] However, their argument seems to depend on the parameters and assumptions of their model, which might be contested. The effect of stigma might also be diluted if the number of criminal offences increases.
[46] But as Posner (1985:1228) argues, shaming might not work for corporate crime because "a corporation can act only through individuals, and there is a constant turnover of these individuals".

society, and hence, he is pushed into the stigmatized society.[47] This negative effect of a stigma can appear particularly in the area of employment opportunities and for already once convicted offenders. As such, Funk suggests that a solution to this recidivism risk is to punish repeat offenders harshly in order to compensate for the negative effect of the stigma (recidivism) (2004:717). As a result, a stigma might not necessarily be cheap as it might require extra costs in terms of higher punishment (Funk 2004:727). For the unconvicted offenders, this recidivist effect is less likely to emerge, as they still obtain equal opportunities as the non-stigmatized, and hence, are not pushed towards recidivism. The controversy of a stigma as a deterrent is also apparent because the level of stigma is hard to measure and to manipulate as it is non-legally enforced by the society. Others believe that the amount of stigma can be controlled and manipulated by the authorities, by for example regulating the dissemination of relevant information to people (via more effective means of communication and increasing the period of time of dissemination) (Kahan and Posner 1999:386). All in all, stigma is a normative criterion for criminalization.

4.4.3 Aim of Law: Deterrence vs. Compliance Strategies

The literature sometimes associates the distinction between enforcement through criminal and administrative law to the distinction between deterrence and compliance strategies, respectively. Of course this is oversimplification as both, deterrent and compliance strategies can be found in administrative as well as in criminal law. However, this classification is done because administrative agencies often use extralegal strategies, such as negotiations and bargaining to achieve compliance and resort to coercive measures only after these strategies fail. A deterrence strategy is based on the assumption that harm will be reduced by prosecuting offenders, and hence by creating a deterrent effect preferably through the use of severe (criminal) sanctions, while a compliance strategy is based upon continuing co-operation (and providing information) between the agency and the offender in order to induce voluntary compliance (Fenn and Veljanovski 1988: 1055-1070; Hawkins 1983: 35). Hence, the goals are

[47] This idea is based on the assumption of Ehrlich (1973: 521-565) that legal and illegal activities take time (costs) and work in a substitutive manner. The (potential) offender will evaluate his opportunity costs of legal and illegal activities and decide accordingly.

different. On the one hand, it is deterrence (via criminal enforcement), on the other, it is cooperation (via administrative enforcement). This research analyzes the scope of criminal and administrative enforcement within the framework of deterrence, nevertheless, leaving this framework for a moment, it can be hypothesized that the enforcement through criminal law, and hence the employment of a deterrence strategy, should be used if the compliance strategies pursued by the administrative agencies are likely to fail.

Administrative authorities often follow a compliance strategy for harms that are minor or committed as a mistake due to insufficient knowledge or care on the side of the wrongdoer. Because the defendants are repeat players (such as a company polluting for many years), an ongoing relationship between the wrongdoer and the agency might prove efficient in securing compliance. Indeed, Fenn and Veljanovski have demonstrated that in certain circumstances there is an economic explanation why enforcement agencies prefer and attain higher compliance using negotiation and bargaining strategies (1988:1055). Especially where violations take place out of ignorance and when the administrative authorities have an informational advantage over (smaller) enterprises, the co-operative strategy may result in a situation in which the former assist the latter in complying with the legislation (Faure and Visser 2004; Ogus, Faure, and Philipsen 2006; Faure, Ogus, and Philipsen 2009: 161-191). Another reason to follow a compliance strategy is because it is very costly for the enforcing agency to bring a case to court (Ogus and Abbot 2002: 283-298). Those high costs may also explain why in some cases there is a seemingly high tolerance of the enforcing agency to non-compliance; this can be a strategic response by the agency to a difficult enforcement environment (Heyes and Rickman 1999: 361-378).

However, as Faure and Visser add, compliance strategies might fail because they do not give *ex ante* enough *incentives* to potential offenders to comply with the law in the first place. They might be cooperating with the agency for some time, but when in the end compliance fails, the agency's "*hands are tied*" (Faure and Visser 2004). The firm can hence 'capture' the agency. This so-called "*capturing risk*" is where collusion forms between the industry and the agencies

(discussed in Garoupa and Gomez-Pomar 2004: 410-433). Capture risk can occur due to the information asymmetry between a powerful and well-informed enterprise and a badly-informed administrative agency. This is the inherent risk of pursuing a cooperation strategy. Credibility of threat of a legal sanction seems to be the crucial element in attaining compliance (Ogus and Abbot 2002:292; Fenn and Veljanovski 1988:1055). Collusion could also take the form of corruption. If this is the case, more use of non-monetary sanctions might be justified to restore deterrence (Garoupa and Klerman 2004: 219-225). Another problem appears if compliance can be switched on and off, as for example in fire safety regulations (removing tables from an exit just before the inspection and putting them back after) (Van den Bergh and Visscher 2007: 1-25). What could be added here is that the costs of ongoing negotiations without the certainty of reaching compliance might be high. This is because compliance strategies might go on for months and require continuous interaction. Thus it is questionable whether negotiations are an optimal strategy where voluntary compliance seems difficult to reach. In all these instances, criminal enforcement might be needed in addition to administrative enforcement.

4.4.4 Enforcement Costs

As discussed in the section on public versus private enforcement, enforcement costs play an important role in creating trade-offs between criminal and administrative law enforcement from an economic perspective. They can be broadly categorized into *detection costs* and *sanctioning costs*, and will depend on the necessary steps to be taken in the process, the number of people involved and the time necessary to reach a final decision. The different elements can be seen in the table below.

Enforcement costs	Criminal law enforcement			Administrative law enforcement		
	Steps	**People**	**Time**	**Steps**	**People**	**Time**
Detection	Suspect Interrogation Investigation Possible detention Charges pressed	Prosecutor Investigator Lawyers Police	Timeline depends on the collection of the evidence/ seriousness of the offence	Inspections (routine, random, on complaint) Investigation	Agency personnel Specialists (e.g. laboratory personnel)	Time depends on the number of inspections and the collection of evidence
Sanctioning	Court Oral hearing Sentence (fines, imprisonment) Appeal	Experts Witnesses Lawyers Prosecutor Judge/jury Prison staff	Can take for years if appeal	Agency Written & Oral procedure Warning Sentence (fines) Appeal	Agency stuff Lawyers	Shorter time line

The enforcement costs of the criminal law system can be substantial because extensive investigative powers need to be employed (incl. experts), and a criminal process can go on for years. Strong evidence needs to be collected, and depending on the severity of the offence, a suspect can be detained for several months, for example in Greece. There can be up to two times appeal, which prolongs the entire procedure. In addition, it is estimated that the imprisonment of one person costs the taxpayers, in the United States, approximately $50,000 a year.[48] This is a high price paid if the crime itself is relatively low in terms of harm. Moreover, by removing a criminal from society, there is the opportunity cost of his lost production ability.

The enforcement costs of administrative law include the inspection costs, which are born whether a violation is found or not. For example, in environmental law, the inspections can be random, routine or based on a complaint. In the Flemish Region for example, in 2007, the total inspection costs were estimated to be around €2.5 million.[49] This includes laboratory costs to measure, collect and analyze samples (around €2 million), other research costs to do specialized tests, studies (€140,000), general work-related costs, such as maintenance, gas, lease of service vehicles (€150,000), specific work-related costs, such as books, inspection

[48] "Criminal Justice: Glorious Failures", *The Economist*, August 13th, 2010

[49] According to the estimates provided in the *Milieuhandhavingsrapporten* (Environmental Enforcement Reports) of the *Afdeling Milieu-inspectie* (Department of the Environmental Inspectorate)

material, safety materials and clothes for workers (€120,000) and other material costs, such as meters for noise, ph meters, gas detection, meteo-station or vehicles (€90,000).

Due to the stricter procedural requirements, such as higher standard of proof, investigation, collecting evidence and lengthy litigation, and a higher cost of some sanctions (imprisonment), the conventional wisdom says that criminal law enforcement is more expensive than administrative law enforcement, *ceteris paribus* (Ogus and Abbot 2002: 283-298; Galbiati and Garoupa 2007: 273-283; Faure 2009; OECD 2009b; on the costs of administrative procedure see Meinberg 1988: 112-157). This is because in administrative proceedings, a lower standard of proof applies (with the exception of administrative fines in European legal systems), monitoring of regulatory requirements, such as permits, reports, is less demanding, and the procedure as such is shorter and has less strict requirements. This assumption is debated because at least with regard to administrative penal fines, similar procedural requirements apply as to criminal sanctions (Art 6 ECHR). The relative size of enforcement costs could only be shown by empirical evidence, which is to my knowledge not well documented. The difficulty stems from the fact that enforcement costs are incurred at different stages and levels of enforcement. For example, the budget of the environmental agency in the US is a poor indicator of administrative costs as it includes grants to states and abatement expenses, and other agencies also contribute to the environmental impact statements (Fullerton 2001: 224-248). The enforcement costs also depend on the amount of offenses deterred, and hence litigated or not, and on the cost of monitoring and bringing back to compliance, which could be substantial in administrative enforcement too.

Therefore, the level of enforcement costs definitely plays a great role in deciding whether criminal or administrative law enforcement is a more efficient instrument to use. The differences might be small at the detection stage, since the administrative law process requires a lot of inspections and collecting of evidence on a regular basis (also without having a suspect), while the criminal law process tends to start when actual harm occurs. On the other hand, the differences might be large at the sanctioning stage where many steps are taken in a criminal

process, court is involved as well as a large number of interested people to prove or disapprove guilt.

To sum up, this section has discussed four normative criteria justifying the use of criminal law enforcement as needed to internalize the social cost of harms. Basically, it showed under which circumstances administrative law enforcement might not be sufficient, and where criminal sanctioning would be the best remedy to use. These trade-offs indicate that under certain conditions it makes economic sense to distinguish between enforcement through criminal and administrative law.

4.5 Economic Criteria for Criminalization

The analysis presented in the previous sections identified criteria which could be used to justify the use of criminal law (or public enforcement in general) when efficiency is the normative goal. The most important economic criteria are summarized in this section. Thus, it is argued that criminalization of an act should be used in areas where:

5. harm is large and/or immaterial and/or diffuse and/or remote
6. stigma is desired (educative role of criminal offences)
7. the probability of detection is low
8. the criminal enforcement costs are sufficiently low.

Under these circumstances, *ceteris paribus*, criminal law is justified as the most efficient instrument to internalize the social costs of harms and provide sufficient deterrence.

4.5.1 Harm

Large harm

If harm is large, e.g. loss of life caused by murder, enforcement by private or administrative law might not provide sufficiently high deterrence because of their repertoire of less harsh

sanctions. As such, under-deterrence might occur. Moreover, if harm is too large, it might be more efficient to try to avoid it. This can be done only via *ex ante* monitoring and regulation, which can be done only by public enforcement. In addition, internalization of such a large harm might need severe sanctions. Sometimes even imprisonment, available only under criminal law, might be necessary. If monetary sanctions suffice (there is no problem of insolvency), private law or administrative law might internalize the cost of harm. Using these instruments does not really give rise to high error costs, as the sanction in private and administrative law is relatively low.

Immaterial harm

If harm is immaterial (pain, suffering), it is difficult to compute its objective value. Thus, enforcement via private law might not adequately internalize such harm, in terms of compensating the victim, as only an approximate value can be computed. In addition, except for the case of punitive damages, private law, namely tort law, offers sanctions only up to the level of harm, which, in case of immaterial loss, could under-compensate. This problem of less harsh sanctions applies generally also to administrative law, where the goal is deterrence.[50] Only criminal law can provide sanctions high enough (with an extra 'kicker') to account for these losses, and be sufficiently deterrent.

Diffuse harm

If harm is diffuse, the cost of harm is spread across a number of victims, such as e.g. with pollution. *Ex ante* monitoring might be needed to account for these costs of spread harm. However, only the public enforcer has an incentive to do this because there is no individual victim, which would find it worthwhile to file a liability suit (collective action and rational apathy problem). Hence, enforcement via private law might not suffice. In principle an administrative agency could deal with this dispersed harm. However, if the total harm is also likely to be large, then the above argument about large harm applies. In addition, if an administrative agency uses compliance strategies, there might be other problems such as

[50] Even though some administrative sanctions such as the suspension or revocation of licenses are considered harsher than criminal sanctions, see Ogus and Abbot (2002: 283-298).

under-deterrence or capture. However, assuming industry expertise is required and it is difficult to collect evidence, enforcement through administrative law might be more justified than through criminal law, as the administrative agency has a specialized knowledge, and the standard of proof is lower.

Remote harm

If harm is remote, its consequences show only after some time, such as e.g. inhalation of asbestos. Here again, *ex ante* monitoring might be needed to account for the costs of harm, which can be done only by the public enforcer. With remote harm, an individual might have difficulties filing a liability suit, as collection of evidence and proving a causal link is problematic. Even if the victim knows the wrongdoer, proof of losses is necessary to collect damages. Thus, enforcement through private law might not suffice. Even for the public enforcer it might be difficult to track down the offender, such as is the case of many environmental violations. If harm is also large, the above argument for criminal sanctions applies; hence administrative sanctions might not adequately internalize the cost of harm in these cases. On the other hand, assuming it is difficult to collect evidence, a lower standard of proof might be more efficient in convicting offenders, thus in these cases enforcement through administrative law might be preferred. Regulation through administrative law, such as requiring permits, might help to solve the problem of remote harm if the harm could be prevented in this way. If it is not, then sanctions are still needed.

4.5.2 Stigma

If stigma is desired, criminalization should occur (assuming only criminal law can create a strong stigma effect). In general, administrative law does not have strong stigma, as administrative sanctions do not carry with them this “shaming” element associated with a criminal conviction. Stigma is a very cost-effective instrument to induce (potential) offenders to comply as it is seen as an extra cost to the offender while it does not tap the resources for legal enforcement (stigma is imposed by the society as a non-legal sanction). This could go in favor of justifying criminalization, as stigma could decrease the costs of otherwise very expensive criminal

sanctions, including the costs of the strict procedure and the imposition of a sanction. Only criminal law should create stigma because it is an extra cost (additional sanction) to the offenders, and hence a higher standard of proof might be needed in order to avoid high error costs of a judicial mistake. Obviously the level of stigma effect is difficult to proportion, as it is imposed by the society rather than by the criminal court. Thus the effect might be small or large in the end. However, the fact that it is imposed by the society creates a problem of restoration of stigma in case of a wrongful conviction as stigma cannot be taken back that easily as for example the annulment of a fine or a prison sentence. Thus, a criminal sanction should be imposed only on those that deserve it. This careful and strategic creation of stigma is necessary also in order not to dilute beliefs too much about the reliability of information coming from this stigma. Garoupa and Galbiati argue that the fact that criminal law has such a high standard of proof ensures that society believes more that a criminal is guilty in comparison to the information conveyed by an administrative sanction, which has a lower standard of proof (2007: 273-283). Thus, criminalization of administrative infringements must be carefully considered and not exaggerated because the reliability of information about guilt might be distorted.

The issue at stake is also to determine for which acts stigma is likely to have the desirable effects. As mentioned earlier, stigma might induce offenders to recidivism, hence potential effects have to be considered. Stigma seems to work best, and this is where enforcement through criminal law should occur, for first time offenders, and others who might have high stakes to lose once convicted. If a criminal spends several years in prison, the non-legal sanction coming from stigma might be negligible. Thus, the stigma effect might be strongest for small, petty crimes (not requiring long-term imprisonment), first time offenders, and related to "white-collar" crime, where the potential offenders would suffer social and economic consequences from being criminally convicted.

Moreover, for violations with a great public concern and public disapproval, stigma might exhibit a strong deterrent as well as a declaratory "signaling" effect. The declaratory or

signaling effect of criminal law comes from its power of moral education and socialization, from its expressive function. Thus criminalization can be used by the regulator to communicate norms and values, which are then seen as legitimate by the society (Coffee JR. 1991: 193-246). This might explain why morally bound and even minor harms are criminalized and why criminal law expands more and more into the area of "white-collar" and other "regulatory" offences where the concern for financial, health or environmental issues rises. It is said that this declaratory power of criminal law might even explain the use of costly imprisonment also for wealthy offenders, as it symbolizes equality before the law (Coffee JR. 1991:224). This signaling power might have an economic justification if it decreases information costs by uniting people and their beliefs on what is considered right and wrong. By criminalizing for example administrative infringements, as has been the case for several environmental violations, people might be induced to greater compliance if they assign additional value to something that is made criminal. Greater compliance in turn decreases enforcement costs.

4.5.3 Low Detection Rate

If the probability of detection of a violation is low, good investigative powers are necessary. In addition, sanctions higher than the level of harm are needed in order to adequately internalize the cost of harm. With the exception of punitive damages, private law does not offer sanctions higher than the damage done. The problem with the enforcement through administrative law, even though it may offer sanctions higher than the harm done, is that in some jurisdictions administrative sanctions tend to be low (for evidence on administrative fines for environmental violations see Billiet et al. 2009; Billiet et al. 2009: 342-349). In addition, in some cases severe non-monetary sanctions, such as imprisonment, are needed to offset the low detection rate, which are available only in criminal law. Thus, in these circumstances administrative law enforcement will not suffice either, unless it uses its right to revoke or suspend licenses, which is used rather rarely. High administrative fines might face the problem of insolvency to pay the sanction (in which case imprisonment might be needed). This holds of course only under the assumption that crimes are actually enforced with the correspondingly high level of sanctions. If a low detection probability is coupled with a low criminal sanction (which practice sometimes

shows, see Billiet and Rousseau (2009)), optimal deterrence might not even be achieved through the use of criminal law. If enforcement is sub-optimal because it is difficult to convict and sanction the offender, then criminal sanctions might also not be the best instrument to use, and rather other instruments, such as administrative sanctions should come into play in order to increase this probability of sanctioning, and hence of enforcement and deterrence.

4.5.4 Enforcement Costs

As mentioned, the size of the enforcement costs depends on the number of violations to be dealt with (variable enforcement costs), their probability of detection (which depends on monitoring and could be seen as fixed costs) and their probability of sanctioning (which depends highly on investigation and the standard of proof level, which could be seen as variable enforcement costs) as well as on other procedural costs, such as litigation, collecting evidence and securing conviction (these are also variable enforcement costs)(Mookherjee and Png 1992: 556-565). Hence, the enforcement costs are a function of fixed enforcement costs (defined by the probability of detection) and of variable enforcement costs, which depend on the number of observed violations, and hence also on the number of sanctioned offenders.

The conventional wisdom holds that the enforcement costs of criminal law are very high because of the strict procedural requirements to impose a criminal sanction. Therefore, only serious violations tend to merit prosecution where the social benefits of decreasing this harm outweigh the social costs of imposing this 'expensive' sanction. From this it could be implied that when the enforcement costs would be too high to justify the decrease in harm, such as for example in case of minor violations, no enforcement at all or other legal instruments, an administrative sanction for instance, might be preferable. However, under certain conditions, criminal enforcement costs might be sufficiently low compared to the administrative enforcement costs and this is when criminal law should be used. This should be the case when a sufficient number violations is deterred through criminal law, and if the marginal enforcements costs to impose a criminal sanction are sufficiently low. The rate of compliance depends on the type of violators, as some might be deterred by criminal sanctions and comply even if their

marginal benefits of violation outweigh their marginal costs of facing a sanction. These are the 'non-calculative' violators who comply for other reasons than a cost-benefit calculation, such as for example intrinsic motivation to obey the law. Even some 'calculative' offenders might comply if they are highly risk-averse, or if they perceive the expected sanction to be higher than it actually is. Offenders might overestimate the probability of detection and sanctioning as well as the magnitude of fines. This was shown in case of environmental violations (Billiet and Rousseau 2005: 2-33).

4.6 Conclusion

To sum up, the main purpose of this chapter was to identify criteria using a law and economics approach justifying the choice for using criminal sanctions as opposed to other legal remedies, such as administrative or private law sanctions. In other words, the goal was to find out why enforcement through criminal law should be used at all and what the comparative advantages of criminal law enforcement are compared to these other legal alternatives. It provided some contributing remarks by focusing not only on the comparative advantages of criminal sanctions as opposed to private law remedies, but also by specifying differences between enforcement via criminal and administrative law from a law and economics perspective. Based upon the analysis of the economic criteria in this chapter, it was argued that in order for an act to be criminalized, it should fulfill these criteria: (1) harm is large and/or immaterial and/or diffuse and/or remote; (2) the purpose is to create stigma and to signal a social norm; (3) the probability of detection is low; and/or (4) the criminal enforcement costs are sufficiently low. Under these circumstances, criminal law is needed and seems to be the most adequate instrument to internalize the social cost of harms within the deterrence framework.

The purpose of the next chapter will be to investigate whether this normative framework is adhered to in the real world. That this is not the case is most obvious when looking at environmental violations. For example, releasing toxic waste and not disposing of it properly, or producing high emissions into the air is considered as crime in several jurisdictions. These

offences might have serious consequences for the environment as well as for public health and safety. Harm can be large, as well as the benefit to the offender because disposing of waste properly, installing filters or using a low-carbon technology can be expensive. In addition, harm is diffuse and might show only in future, which makes it difficult to track and penalize. Due to these costly abatement measures to reduce harm, the offender usually tries to conceal his activities, which results in a low probability of detection and sanctioning. Further, because these activities create serious negative externalities for present and future generations, society tends to send a signal about the importance of punishing and deterring these activities. All these elements point to the fact that enforcement through criminal law is needed. Even if the criminal enforcement costs might be large, given harm is substantial, it might still be efficient to use criminal sanctions. These types of violations correspond nicely with the theoretical framework presented in this chapter.

However, in case of for example a duty to report that the company has appointed a coordinator or that it has complied with all regulatory requirements, the normative framework developed in this chapter is not followed. In some jurisdictions, these offences, administrative in nature, are still enforced through criminal law. This is so even though harm is relatively low (not reporting is not inherently harmful), the probability of detection is relatively high (it is easy to check whether a company submitted a report), and these activities are not very prone to stigmatization. In addition, criminal enforcement costs might still be relatively high, which usually results in not enforcing these crimes. Therefore, it is questionable why enforcement through criminal law is still used, and whether a complementary "cheaper" enforcement instrument, such as administrative fines, might not be more suitable for these offences. In some jurisdictions, as mentioned in Chapter 2, due to this enforcement deficit, administrative penal law has developed. Now the question is whether this makes sense from an economic perspective.

The following two chapters will pick up on this issue and try to determine whether it is desirable that administrative law enforcement plays a complementary role in enforcing

environmental violations, and if so, under which conditions. In Chapter 5 I will do a comparative study of four jurisdictions and analyze their enforcement instruments with regard to the protection of the environment. Chapter 6 will theoretically investigate under which conditions administrative fines might prove to be welfare enhancing. Application to environmental law has been chosen for three reasons: (1) it provides a very useful case study to assess the economic impacts of the use of criminal and administrative sanctions because both are used in combination to enforce environmental laws. This is because environmental criminal law is different from traditional criminal law in a sense that many violations are of a regulatory nature, highly intertwined with administrative law, and hence administrative agencies play an important role in enforcement (Faure 2009). (2) It offers a great opportunity for comparative research as there exists a variation among countries with regard to their choice of the degree of combination between these two enforcement mechanisms. There are countries, which rely (relied) primarily on criminal law to enforce environmental violations, while other countries rely extensively on the use of administrative fines in addition to criminal sanctions. (3) The protection of the environment is a hot and important topic currently discussed at the national, European as well as global level. This makes the dissertation scientifically as well as from a societal point of view relevant.

Chapter 5: Criminal or Administrative Law to Protect the Environment? Evidence from Western Europe[51]

5.1 Introduction

Recent law and economics scholarship has paid attention to the question why the criminal law is used at all for certain harmful activities. This literature has been extensively discussed in the previous chapter. On the basis of this literature, normative criteria have been developed indicating when, from an economic perspective, criminalization would be warranted, as opposed to using private or administrative law remedies. These criteria point to the use of the criminal law only in limited circumstances because this instrument is costly for society (in terms of relatively high enforcement costs) as well as for the offender (in terms of relatively severe, legal and non-legal, sanctions). Thus, it could be implied that only for certain, usually serious violations, criminal sanctions should be applied. This chapter will apply these insights to the case of environmental law. Theoretically, this has been done by several scholars (Faure 1995: 446-479; Ogus and Abbot 2002: 283-298; Faure and Visser 2004). However, this chapter will try to provide some empirical evidence on the relative use of criminal and administrative law in enforcing environmental violations.[52] What can be seen from practice, as mentioned at the end of the previous chapter, is that not all environmental crimes fulfill the normative criteria for criminalization. Hence, on the analysis and comparison of four jurisdictions, namely the Flemish Region, the United Kingdom (UK), the Netherlands and Germany, it will be investigated to what degree criminal sanctioning is used, whether this is adequate to enforce environmental violations, and whether an additional instrument, such as administrative fines, would not be necessary for a range of violations that do not merit criminal prosecution but merit enforcement.

[51] This chapter builds upon an earlier paper by Faure and Svatikova, "Criminal or Administrative Law to Protect the Environment? Evidence from Western Europe", Working paper 2010

[52] Civil judicial enforcement of environmental law is the dominant enforcement method in for example the United States, however, this chapter focuses on Europe.

As mentioned in the introduction to Chapter 1, in November 2008, an EU Directive 2008/99/EC on the protection of the environment through criminal law has been promulgated (to be enforced by the end of 2010), which also added to the discussion on what the optimal sanctions for environmental harms should be (Faure 2008: 68-75). This directive harmonizes and strengthens the role of criminal law, and in a way forces the Member States to enforce a large number of environmental directives through criminal law.[53] The type and the level of the sanction are at the discretion of the Member States with one condition: the sanctions implemented into the national laws have to be effective, dissuasive and proportional.[54] As such, this EU directive seems to favor criminalization, which might not always correspond to the normative criteria developed in the previous chapter. This is in sharp contrast to the trend in several European countries, where the use of administrative fines is gaining more and more importance. This opens up the interesting question whether relying strongly on criminal law (as the EU Directive does) is socially desirable. This chapter will evaluate this claim by examining the enforcement of environmental regulations in the aforementioned four jurisdictions. The reason for choosing these jurisdictions is that the Flemish Region and the United Kingdom have until mid-2009 largely relied on criminal sanctions, whereas Germany and the Netherlands use administrative sanctions as the main enforcement tool for environmental regulations.[55] This comparative perspective might provide important insights into the question of the optimal scope of the criminal and administrative law enforcement.

As mentioned in the introduction to this thesis, the focus of this research is on criminal and administrative sanctions whose goal is deterrence. With regard to administrative sanctions, this goal is achieved by administrative fines. Other administrative sanctions, such as reparatory measures and stop notices, aim at stopping and reparation of harm. Not all legal systems give the environmental agency the power to impose an administrative fine itself. In Germany, administrative fines are widely used, while in the Netherlands, the use of administrative fine in case of environmental violations is still under discussion. Instead, an administrative order which

[53] *Official Journal* L328/28 of 6 December 2008.
[54] There is still a lot of discussion going on at the EU and Member State level about what this exactly means.
[55] In 2008-2009, administrative fines were introduced also in the Flemish Region and the UK.

is penalized by a fine if not complied with is used. This could be seen as a 'quasi'-administrative fine, even though the primary purpose is to stop the harmful activity. Neither in the Flemish Region nor in the UK, until recently, had the environmental agency the power to impose an administrative fine. The main difference between an administrative sanctioning system using administrative fines and criminal law is that administrative fines are easier to administer and impose (and therefore presumably less costly) than criminal fines, which have a higher threshold of proof and more complicated criminal procedure (Faure, Ogus, and Philipsen 2009: 161-191). In this chapter, it will be examined whether given a fixed budget for the environmental agency, single (criminal) or multiple (criminal and administrative) enforcement instruments are adequate to induce compliance. To my knowledge, there is no jurisdiction, which would use administrative sanctions alone, hence, this scenario will be disregarded. The fact that administrative proceedings tend to be less strict and more informal than criminal proceedings, and the environmental agency itself imposes the administrative sanction (no further step to the public prosecutor) suggests that the imposition of administrative sanctions, including an administrative fine, is relatively cheaper. Therefore, the working hypothesis, which will be examined, is that in case of environmental violations, it is cost-effective to complement criminal law enforcement by administrative law enforcement, which would allow for the imposition of administrative fines, rather than only allow for a single (criminal) sanctioning instrument.[56] Complementary use of these two instruments might lead to additional deterrence. Available empirical data will illustrate this argument in this chapter. Since the data is from different sources and rather limited, it does not allow engaging in a thorough comparative empirical study of enforcement practices in the four jurisdictions.

First, the theoretical framework on the scope of criminal and administrative law enforcement will be briefly applied to environmental law. Second, experiences with both enforcement systems in four countries will be sketched out and some descriptive statistics will be analyzed.

[56] Moreover, for the simplicity of the analysis, I am also assuming legal mistakes are costless as I do not have any evidence on the number of mistaken judgments. For administrative offences, usually the sanction is rather low without any considerable consequences. For administrative fines, similar procedural standards apply as for criminal fines, which should minimize these error costs.

Next, the analysis will be critically discussed from a comparative perspective. Lastly, concluding remarks will be formulated with respect to the optimal environmental enforcement policy.

5.2 Theoretical Framework Applied to Environmental Law

Applying Becker's model to the enforcement of environmental law, polluters are expected to comply with environmental regulations if the probability of being apprehended and sanctioned multiplied by the penalty imposed will be sufficiently high. Even though the reality shows that formal enforcement tends to be rather low (Ogus and Abbot 2002: 283-298; Billiet et al. 2009; Billiet and Rousseau 2005: 2-33; Faure and Svatikova 2010: 60-79), large numbers of companies nevertheless comply. This phenomenon is in the literature referred to as the "Harrington paradox" (Heyes and Rickman 1999: 361-378; Harrington 1988: 29-53; Innes and Sam 2008: 271-296). Many violations are also settled out of court, or there is an agreement made not to impose a sanction for return to compliance (OECD 2009b). In addition, if a violation is a matter of inadequate information, this could be solved by providing sufficient information to the offenders (Bowles, Faure, and Garoupa 2008: 389-416). However, this does not render the question of adequate enforcement policy irrelevant. Policymakers will still have to look at the efficiency or cost-effectiveness of the enforcement instruments to protect the environment. Different legal instruments, such as criminal or administrative sanctions, have different enforcement costs as well as a different impact on the behaviour of potential offenders.

There is only a limited number of empirical studies that tested the question of which enforcement instruments are adequate to protect the environment. In general, they point to a similar conclusion: sanctioning of environmental offences through criminal law is relatively low, meaning not used often (Ogus and Abbot 2002: 283-298; Billiet and Rousseau 2005: 2-33; Faure and Svatikova 2010: 60-79), and relatively low environmental fines do not seem to have a deterrent effect (Rousseau 2007: 1-28). If forfeiture of illegal gains is possible, such as in the Flemish Region, this may have a strong deterrent effect since the amounts can be large. The main reasons for low enforcement might be the high administrative costs of the criminal justice

system (high standard of proof), heavy workload of courts, judges giving a priority to "real crimes" and lacking adequate knowledge of assessing environmental harm. As the probability of detection is rather low, coupled with a low sanction and high benefit from environmental harm, according to the Becker model there will be low deterrence. Thus, compliance will follow only if the potential offender is highly risk averse, his subjective perception of the formal sanction is very high, he significantly overestimates the probability of conviction, and he attaches significance to non-legal sanctions coming from a criminal conviction (stigma, loss of reputation) (Ogus and Abbot 2002: 283-298). All these factors increase the expected sanction a violator might be facing.

As an alternative to criminal enforcement, sanctioning through administrative law has been proposed. This argument is supported for the following reason: given the high costs of the criminal law, legal systems that merely have criminal law enforcement systems and no or limited possibilities to enforce via administrative law may be less effective. The assumption is that given the high costs of the criminal procedure, public prosecutors allocate their scarce resources to the most important cases. As a consequence, the majority of environmental offences might not be prosecuted, while there is a range of cases, which deserves sanctioning. To the extent that no alternative mechanism (like administrative penalties or fines) exists, this could lead to underterrence since rational Becker-type polluters are facing low expected (formal) sanctions. Administrative fines might be relatively cheaper to impose than criminal sanctions as the administrative proceedings are less strict and more informal in terms of time, money and personnel (OECD 2009b). In addition, as an administrative sanction is imposed by the environmental agency itself, there is no need to forward the case to the public prosecutor. Hence if there are enough cases where the gain from enforcement is greater than the administrative enforcement costs (where the cost of pollution is higher than the cost of imposing an administrative sanction), there is a role for administrative law.

Therefore, next to having only a criminal law system in place to enforce environmental regulations, allowing environmental agencies to impose administrative sanctions might be

more effective in reducing environmental harm and at a lower cost. By letting environmental agencies handle the less serious cases, which are not worth the prosecution, the number of dismissals decreases and the overall level of enforcement increases (*ex ante*). In the following part of the chapter, four examples of legal systems will be examined and analyzed, where two countries rely (relied until 2009) on using a single instrument (criminal law) to enforce environmental violations, and the other two rely on using a complementary system of criminal and administrative enforcement. Some implications will be drawn as to their ability to induce compliance with environmental regulations.

5.3 Experiences in Four Legal Systems

This section discusses the enforcement instruments in four jurisdictions, where the UK and the Flemish region rely primarily on criminal law to enforce environmental regulations, while Germany and the Netherlands rely on both, administrative and criminal law sanctioning. The legal systems are briefly sketched and stylized facts based on the available empirical data are formulated.

5.3.1 Flemish Region

The enforcement of environmental law in Belgium has been allocated to regions, hence in this chapter the focus is on the Flemish region (on the division of powers see Lust 2007: 5-60). The most important environmental acts in the Flemish region are the Flemish Decree concerning environmental permits of 28 June 1985 and the Waste Decree of 2 July 1981 concerning the prevention and the management of waste.[57] The Environmental Inspectorate ("Milieu-inspectie" or MI) of the Flemish Environmental Ministry has the most important competences to control compliance with environmental regulations. The environmental law in the Flemish region has until 2009 mainly been enforced through criminal law. Only under very limited circumstances, an administrative fine could be imposed. The MI could impose an administrative

[57] This decree has been seriously amended by a subsequent Decree of 20 April 1994.

sanction, such as suspension of environmental permits. Since May 2009, the Flemish Environmental Enforcement Decree[58] has entered into force and gives the regional agency ("gewestelijke entiteit") the power to impose administrative fines. Some of the crimes have been declassified as administrative offences ("milieuinbreuken"), which are no longer subject to criminal law. In that case, the (exclusive) administrative fine is the only sanction available. For crimes, which are still forwarded to the public prosecutor, there is the possibility of an (alternative) administrative fine, in case the prosecutor decides not to prosecute. Together with the administrative fine, another sanction can be imposed, which equals to the benefit obtained from the illegal activity (forfeiture of illegal gains).[59]

For crimes (the change in law concerns only administrative offences), once a violation has been observed, the Environmental Inspectorate (MI) is legally obliged to issue a Notice of Violation (NOV)[60] to the public prosecutor. MI then follows a soft approach by formulating a warning or a recommendation. Once the public prosecutor receives the NOV, he/she could ask the MI for more information, dismiss the case from any formal consequences, offer a 'transaction' (payment of a sum which will extinguish the criminal prosecution, a "deal" or settlement), or proceed to prosecute the violator in court. If convicted, a criminal fine or imprisonment could be imposed. Since the new decree entered into force, an exclusive administrative fine can be imposed by the regional agency for minor administrative infringements (and hence these cases are not submitted to the prosecutor), and when the prosecutor decides not to prosecute the more serious violations, he can send the case back to the environmental agency, and an alternative administrative fine can be imposed instead for these crimes.

There have been several empirical studies addressing the question of enforcement of environmental law in Belgium (Billiet et al. 2009; Billiet et al. 2009: 342-349; Billiet and Rousseau 2005: 2-33; Ponsaers and De Keulenaer 2003: 250-265; Billiet et al. 2009: 1-36; Rousseau 2007: 1-26; Billiet and Rousseau 2003: 120-134; Rousseau 2010: 195-209; Rousseau

[58] Flemish Environmental Enforcement Decree ("Milieuhandhavingsdecreet"*)* published on 29th February 2008.
[59] "voordeelontneming" or confiscation of illegal gain
[60] In Dutch, "process-verbaal" *(PV).*

2009: 161-194). These studies have addressed different provinces in Belgium, or a specific industry, such as textiles, or focused on a part of the enforcement process, such as investigations. In this research, data on the enforcement of environmental law in the Flemish Region is collected at the level of five Flemish provinces for the period of 16 consecutive years, 1993-2008. The only source available, and providing at least some "hard" data, are the yearly (enforcement) reports of the MI (Table 1).[61] The data on waste enforcement and management is excluded from this sample. The sample used consists of several enforcement variables, all of which can be found in the yearly reports. Yearly data consists of the number of inspections, the number of violations, the number of firms inspected and some, but incoherent data on the number of administrative sanctions, administrative coercive measures and administrative fines. Furthermore, there is quite extensive reporting on what the public prosecutor in each province has done with the violations in each given year (1993-2004), giving the number of dismissals, 'transactions', acquittals and convictions (see Table 2).

[61] *Milieuhandhavingsrapporten* (Environmental Enforcement Reports) of the *Afdeling Milieu-inspectie* (Department of the Environmental Inspectorate). In 2011, the data collected by Environmental Lawforce, a research project investigating environmental enforcement in Belgium in the criminal and in the administrative tracks will be made publicly available. http://www.environmental-lawforce.be/ last visited September 26, 2010.

Table 1:

Flemish Region *ex ante* inspecting activity of the Environmental Inspectorate

Year	# Inspections	# Firms inspected	# Observed violations	# Notice of violations	(1) P firm inspected	(2) P inspected	(3) P prosecuted	(4) P convicted	(5) P apprehended & prosecuted
1993			1910	449			0,15	0,13	
1994			1517	938			0,16	0,14	
1995	15007		1301	1665		0,60	0,19	0,18	
1996	12751		1233	2217		0,51	0,21	0,20	
1997	12469		1166	2760		0,50	0,22	0,17	
1998	12061		1099	356		0,48	0,14	0,13	
1999	11595		785	419		0,46	0,07	0,06	
2000	10584	4380	794	359	0,18	0,42	0,07	0,06	0,01
2001	11351	4505	805	386	0,18	0,45	0,05	0,04	0,01
2002	12060	5280	741	423	0,21	0,48	0,06	0,05	0,01
2003	11605	4612	751	326	0.18	0,46	0,03	0,02	0,01
2004	12156	5082	608	288	0,20	0,49	0,09	0,04	0,02
2005	11150	4721	497		0,19	0,45			
2006	12518	5481	516		0,22	0,50			
2007	12017	4422	587		0,18	0,48			
2008	12430	4599	605		0,20	0,50			
Mean	12125,3	4786,9	932,2	882,17	0,2	0,5	0,1	0,1	0,01
Mean 1998-2008	11775,18	4786,89	708,00	365,29	0,2	0,47	0,07	0,06	0,01

Source: Environmental Inspectorate (MI), probabilities are authors' own calculations

Note: Column (1) is calculated as p firm-inspected = $\frac{\#\ firms\ \_\ inspected}{\#\ companies}$, column (2) as p inspected = $\frac{\#\ \text{inspection s}}{\#\ companies}$, column (3) as p prosecuted = $\frac{\#\ \text{prosecutio ns}}{\#\ \text{NOVs}}$, column (4) as p convicted = $\frac{\#\ \text{conviction s}}{\#\ \text{NOVs}}$ and column (5) as p = $\frac{\#\ firms\ \_\ inspected}{\#\ companies} \cdot \frac{\#\ \text{prosecutio ns}}{\#\ \text{NOVs}}$.

For columns (1) and (2), the total number of companies that fall within the investigation powers of the MI is approximately 25.000 (source: MI).

Notwithstanding the several limitations of this data (incompleteness, inconsistency), some stylized facts can be formulated. First, with regard to the detection stage, such as the inspecting activity of the MI, there are on average 12125 inspections performed and on average 4787 firms inspected per year. As the number of inspections is more than twice the number of firms inspected, at least some firms get inspected more than once. This might be related to the targeting approach used by MI where firms that are more likely to be offenders are more likely to be inspected than firms are compliant (Rousseau 2007: 17-36). In addition, sometimes several inspections are needed to determine one violation. On average there are 932 violations detected per year, meaning that in around 8% of the performed inspections a violation is

observed (in this chapter referred to as the 'observed violations ratio').[62] Once a violation is observed, the MI was until mid-2009 legally obliged to issue a NOV. There are on average 882 NOVs per year dealt with by the public prosecutor.[63] To correct for the non-unified data reporting pre-1998, average values have been calculated also for the period 1998-2008. The number of observations has decreased, however, the consistency of data is strengthened. It now shows that there are on average only 708 observed violations per year, which leads to around 6% of inspections where a violation has been observed, and only 365 NOVs on average per year reported by the public prosecutor (hence more than half less). It should be noted that a NOV can arrive to the public prosecutor also from the police forces and from other administrations. However, the statistics reported here are only from the MI.

What is more interesting is to look at the probabilities that a violation will be detected and prosecuted.[64] As explained in section 5.2, a "rational" company will value its costs and benefits of complying when making a decision whether to comply or not. From the collected data, the probability a firm will be inspected was computed, defined as the ratio of the number of firms inspected to the total number of companies. There are approximately 25 000 companies that fall within the investigation powers of the MI[65] and as mentioned above, on average 4787 companies are inspected per year. This leads to a probability of 0,2 that a company will be inspected, on average, which could be considered as low since only two out of ten companies are inspected. The ideal measure of the probability of detection would be if a single inspection per firm could be assumed, conditional on firm being in violation. However, there are more

[62] It should be noted that the calculation of violations has been unified only since 1998, hence the numbers for years before 1998 might overstate the average number of violations. In other words, there would be less than 8% of inspections resulting in a violation. This is why averages are calculated also for the period 1998-2008, which should provide more consistent results.
[63] The number of NOVs corresponds to the number of NOVs dealt with in a given year that the prosecutor reports. The NOV could have been issued also in previous years.
[64] It should be noted here that the probabilities of detection relate only with respect to the observed violations, thus it is a conditional probability upon being found a violation. A number cannot be put on the amount of unobserved violations, which implies that the resulting probabilities of being detected are systematically lower than what is reported in this chapter.
[65] Source: Environmental Inspectorate (MI)

than twice as many inspections as firms inspected; hence some firms are inspected more than once, which raises their probability of being detected.[66]

Furthermore, the (conditional) probability of being prosecuted has been computed based on the number of NOVs for which MI received some information from the public prosecutor, and which have been prosecuted (p prosecuted) (data on the number of prosecutions in Table 2). On average, this probability is 0,1. For the period 1998-2008, this probability of prosecution is only 0,07 (7%).[67] This suggests that even if a company is detected committing a violation and a NOV is issued, at least 9 out of 10 times it will not be brought to court - prosecuted. This implies that to see the real probabilities that a company will actually be penalized for a violation, account must be taken not only of the probability of being inspected (and hence incur a high chance that a violation will be found given a violation was committed), but also for the probability of being prosecuted once a violation has been established. It is a fact that not all violations are found and those that are found are not all prosecuted. Thus, the probability of being apprehended and prosecuted for a violation is defined as the product of the probability a firm will be inspected (assuming if a firm is in violation and an inspection takes place, the violation will be detected) and the probability it will be prosecuted. On average this probability is less than 0,01, i.e. less than 1%, meaning only one in hundred firms that are in violation will be detected and prosecuted (based on these data). The probability of being convicted, which is also important as not all prosecutions lead to convictions, is according to these data on average the same as the probability of being prosecuted. This indicates that once a case is prosecuted, there is a very high chance that the wrongdoer will be convicted. Thus the public prosecutor seems to select cases according to their chances of winning against the wrongdoer.

[66] Calculating the probability of being inspected disregarding the number of companies inspected (defined as the ratio of the number of inspections to the total number of companies) would greatly overestimate this parameter. According to the computations in this chapter, this would result in a probability of 0,5, which would mean every second company is inspected, which is not true.

[67] Estimates according to Environmental Lawforce show prosecution rate of 8% for Belgium for the period 2003-2006, presented at the International Workshop on the Law and Economics of Environmental Sanctioning, 21 and 22 September 2010, Leuven, Belgium.

When looking at the sentencing stage of enforcement once the MI observes a violation, in addition to sending a NOV to the public prosecutor, the MI could use a soft approach and issue a recommendation or a warning, or impose administrative sanctions and measures, and in case of manure, administrative fines.[68] Little data on the number of warnings (1995-1997) indicates approximately 1200 warnings per year (on average for the three years). The number of recommendations is available only for years 1998-1999. In 1998 and 1999, there have been 1010 and 724, respectively, recommendations in total given by the MI after a NOV has been issued. In 1999, the data shows also the number of recommendations given in the absence of a NOV, namely 453. MI imposes roughly up to 10 administrative sanctions per year, around 30-40 administrative measures ("dwangmaatregelen") and 10-30 administrative fines (period considered 1998-2001, for manure mostly). However, no proper estimates can be made as the values for other years are either missing or their calculation is inconsistent.

Once a NOV is sent to the public prosecutor, he/she can dismiss the case, issue a transaction or prosecute. The use of these options in absolute numbers as well as in relative terms is shown in Table 2.[69]

[68] Since mid-2009, the regional agency can issue an administrative fine also for other offences.

[69] The absolute numbers are again comparable only from 1998 when the reporting system for violations has been unified, and there seem to be three outliers, namely years 1995-1997. Therefore, the values are also reported in relative terms (in brackets) as a percentage of the total number of NOVs reported by the prosecutor in a given year, and hence made more comparable assuming that in a given year the ratios of dismissals and convictions were not affected by the differences in classifying violations across provinces. Average values are also calculated only for the period 1998-2004 to give more reliable estimates. In addition, the data on the follow up might be biased due to the fact that it is based on the voluntary reporting of the public prosecutors' offices. There is a variation in this reporting across offices.

Table 2:

Flemish Region follow-up on violations in absolute terms (% of total # NOVs in a given year)

Year	Dismissal	Transaction	Acquittal	Conviction	Tot # NOVs
1993	265 (59%)	115 (26%)	11 (2,45%)	58 (12,92%)	449
1994	589 (63%)	201 (21%)	13 (1,39%)	135 (14,39%)	938
1995	1007 (60%)	336 (20%)	19 (1,14%)	303 (18,20%)	1665
1996	1255 (57%)	486 (22%)	40 (1,80%)	436 (19,67%)	2217
1997	1505 (54%)	659 (24%)	120 (4,35%)	476 (17,25%)	2760
1998	162 (45%)	144 (40%)	4 (1,12%)	46 (12,92%)	356
1999	263 (63%)	126 (30%)	3 (0,72%)	27 (6,44%)	419
2000	241 (67%)	94 (26%)	3 (0,84%)	21 (5,85%)	359
2001	284 (73%)	84 (22%)	1 (0,26%)	17 (4,40%)	386
2002	282 (67%)	117 (28%)	3 (0,71%)	21 (4,96%)	423
2003	225 (69%)	90 (28%)	5 (1,53%)	6 (1,84%)	326
2004	179 (62%)	83 (29%)	14 (4,86%)	12 (4,17%)	288
Mean	521,42 (62%)	211,25 (26%)	19,67 (1,76%)	129,83 (10,25%)	882,17 (100%)
Mean 1998-2004	233.71 (64%)	105.43 (29%)	4.71 (1,43%)	21.43 (5.8%)	365.29 (100%)

Source: Environmental Inspectorate (MI), percentages authors' calculations

Taking into consideration only the period 1998-2004, there are on average 365 NOVs in total per year (only period 1998-2004). Further, it shows that on average there are 64% of dismissals, 29% transactions, 5.8% convictions and 1,43% acquittals per year. Thus on average, around 7% of NOVs get prosecuted, which might not provide sufficient incentives *ex ante* to comply with the environmental regulations in the first place.[70]

Table 3 shows a panel of five Flemish provinces across 12 years. The data shows the prosecution rate in a particular province in a given year.

[70] According to Environmental Lawforce, there are approximately 70% of dismissals (half of which are for technical reasons, and the other half for policy reasons), 20% of transactions and 10% prosecution rate for the period 2003-2006 in Belgium. Workshop, 21 and 22 September 2010, Leuven, Belgium.

Table 3:

Prosecution rate across Flemish provinces

Prosecution rate across Flemish provinces for all years (%)					
Year	Antwerpen	Brabant	Limburg	Oost-Vlaanderen	West-Vlaanderen
1993		16,92%	4,17%	14,50%	26,03%
1994		17,19%	27,78%	14,03%	24,36%
1995		12,15%	47,50%	11,57%	31,34%
1996		10,95%	51,85%	11,73%	35,28%
1997	19,65%	7,73%	49,06%	11,49%	34,61%
1998	0,00%	6,12%	30,43%	11,46%	24,00%
1999	20,69%	1,08%	6,06%	4,17%	14,58%
2000	0,00%	2,33%	10,53%	8,28%	10,26%
2001	0,00%	3,13%	3,70%	3,79%	8,33%
2002	6,25%	0,00%	10,00%	2,36%	10,87%
2003	16,00%	0,00%	2,56%	2,56%	3,77%
2004	42,11%	0,00%	1,64%	0,00%	13,04%
Mean	13,09%	6,47%	20,44%	7,99%	19,71%

Source: Environmental Inspectorate (MI), percentages authors' calculations

The results are extremely interesting as they show a great variation in prosecution rate across provinces and years, even though the same law applies to the whole region. In the peak prosecution years, 1996 and 1997, all provinces have above average prosecution rates, being the highest in Limburg, reaching around 50% of the total number of violations in Limburg that year. In other words, one in two violations was prosecuted there at that time. In Oost-Vlaanderen there has been a straight decline in the prosecution rate, while in Antwerpen there seems to be years of moderate prosecution (20%) mixed with years with no prosecution[71]. However, in 2004, Antwerpen outnumbered by far (42%) other provinces in their prosecution rates. Limburg and West-Vlaanderen have on average the highest prosecution rates, reaching around 20%. This might be due to a random variation across provinces, due to missing reports from the public prosecutors' offices sent to MI, or it might be the case that some provinces get more serious cases than others, or a certain type of companies tends to concentrate in a certain province.

[71] Again one has to be careful with interpreting these data: the fact that Table 3 shows in some cases a 0% prosecution rate may simply be due to the fact that in those years prosecutors have failed to provide information on prosecution to MI.

With regard to the level of fines imposed, some estimates can be found in the literature. MI does not provide data on the size of penalties imposed. Billiet and Rousseau find an average criminal fine of €5.000 imposed both in the court of first instance as well as in appeal for Gent region in the period 1990-2000 (2003: 120-134). In the textile sector, the same authors find an average criminal fine in court of first instance of €2.869, and in court of appeal of €7.165. In case of transaction (settlement with the public prosecutor), the average payment sum was only €260 (Billiet and Rousseau 2005: 2-33). Based on the research done by Environmental Lawforce, these average fines have slightly increased (Billiet et al. 2009; see for example Billiet et al. 2009: 342-349). In the period 2003/2004-2007 in Gent (for criminal track) and in Brussels (for administrative track), the average criminal fine for legal persons would be €14.569 in First Instance and €10.733 in Appeal. For natural persons, the average criminal fine would be € 3.787 in First Instance and € 7.061 in Appeal. With regard to the length of imprisonment, the majority of prison terms (cca 90%) does not last longer than 6 months. The problem is that usually very short prison sentences are not executed. In the administrative track, the average administrative fine for legal persons is €4.477 in First Instance (€672 for natural persons) and €11.276 in Appeal (€1.121 for natural persons). What can be implied from these results is that on average fines are rather low in comparison to the benefits these violators might gain by violating the law, notwithstanding the rather low probability of detection and sanctioning.

5.3.2 United Kingdom

The Environmental Protection Act 1990 (EPA 1990) is the main environmental act in England and Wales and Scotland regulating waste management and control of emissions into the environment (air, land and water) (for an overview see Seerden and Stroink 2007: 419). The enforcement is in the hands of the Environment Agency (EA) and Scottish Environment Protection Agency (SEPA). In the UK, environmental agencies used mainly 'informal' compliance strategies (OECD reports more than 70%), such as persuasion and verbal warnings to achieve compliance (OECD 2009b; Abbot 2009: 268). Until the end of 2008, environmental law was primarily enforced through more 'formal' criminal law, where the EA and SEPA could sue before

a criminal court for criminal sanctions, including fines and imprisonment for violations, as well as a formal caution or issue a warning.[72] In the UK, these environmental agencies can take on the role of prosecutors, unlike in some other legal systems, where the prosecution is separate from administrative agencies. In addition, the enforcing authority could use administrative tools such as powers of suspension and revocation of environmental licenses, issue enforcement or prohibition notice or carry out remedial works (Ogus and Abbot 2002: 283-298).[73] However, pre-2008 in the UK there was no system of administrative fines to enforce environmental regulations, and the availability of enforcement mechanisms was limited.

This changed with the introduction of the Regulatory Enforcement and Sanctions Act 2008, which entered into force on 1st October 2008. This act gave some regulatory bodies, including the Environment Agency, the power to impose a greater repertoire of administrative sanctions. These administrative sanctions are introduced by the Environmental Civil Sanctions Order 2010 and the Environmental Sanctions Regulations 2010. Besides other administrative powers, it enables the Environment Agency with two types of administrative fines, the fixed monetary penalty (FMP), and the variable monetary penalty (VMP). In both cases, a criminal standard of proof ('proof beyond a reasonable doubt') must be applied. The FMP is similar to the Flemish exclusive administrative fine, as it is a rather low level fine imposed for minor offences, such as the failure to monitor, etc. The VMP bears similarities with the Flemish alternative administrative fine, as it is applied to moderate to serious offences.[74] However, the main difference is that these sanctions do not aim to replace a criminal sanction (as in Flanders), but to fill the gap in enforcement where prosecution does not seem to be in the public interest.[75] This might be the case because in the UK, the environmental agency acts also as a prosecutor rather than merely as an administrative body in the strict sense. That is also why the imposition of the VMP is decided by the environmental agency, and does not depend first on the decision

[72] Environmental Protection Act 1990 (EPA 1990), e.g. sections 23; Environment Agency (EA) Enforcement and Prosecution Policy, 2008, paragraph 8,
http://www.environment-agency.gov.uk/static/documents/enforcement-policy.pdf
[73] EPA 1990, e.g. section 13 and 14; EA Enforcement and Prosecution Policy, 2008, paragraph 7.
[74] Offence is defined as a breach of legislation. There is no particular classification into criminal or administrative offence.
[75] I do not mean double sanctioning. In Flanders, part of the crimes was decriminalized.

of the public prosecutor to prosecute or not, as in Flanders. Thus administrative fines in the UK were introduced to provide flexibility and proportionality (intermediate sanctions) to the regulator, in this case to the environmental agency. This could be seen as an application of Ayres and Braithwaite's 'responsive regulation' (1992: 205). As in Flanders, the aim of these fines is to deter and to remove the financial benefit from the violator. Guidance to regulators on how to apply these administrative sanctions is provided by the Department for Environment, Food and Rural Affairs (DEFRA).[76]

The discretion of the Environment Agency (EA) with regard to enforcement is bound by the Enforcement and Prosecution Policy. Prosecution will follow only if there is sufficient evidence of an offence and only when this is in the public interest.[77] Factors influencing the likelihood of prosecution include, among others, the seriousness of the environmental effect of the offence, intent, and history of offending and the attitude of the offender.[78] The EA is likely to prosecute when the offence has serious consequences for the environment, the violator operates without a license, breaches excessively and persistently statutory requirements and disregards recklessly management or quality standards.[79] Since the availability of administrative fines, the EA might in some cases impose a VMP rather than to prosecute. Stigma and reputation is likely to be a concern for the businesses, as the EA publishes in their Spotlight reports which companies perform well in terms of environment, and which have been prosecuted.[80]

Environmental enforcement data in the UK is extremely scarce and inconsistent. The EA provides some data in its Annual Report and Accounts. However, only the latest report is available on its website.[81] Nevertheless, it is possible to get limited data of the last 5 years from

[76] DEFRA, Civil Sanctions for Environmental Offences: Guidance to regulators on administrative sanctions for environmental offences, January 2010, <http://www.defra.gov.uk/environment/index.htm>, last accessed September 9, 2010
[77] EA Enforcement and Prosecution Policy, 2008, § 22.
[78] EA Enforcement and Prosecution Policy, 2008, § 23.
[79] EA Enforcement and Prosecution Policy, 2008, § 29.
[80] Environment Agency Spotlight Reports 2004-2008 for on http://www.environment-agency.gov.uk/.
[81] Environment Agency, Annual Report and Accounts 2007-2008, http://www.environment-agency.gov.uk/aboutus/work/35704.aspx.

the EA's Spotlight Reports.[82] These 'Spotlight' reports, published by the EA, report on the performance (good or bad) of business, hence, they create so-called 'naming and shaming' effect. In addition, the House of Lords Written Answers (Hansard)[83] provides some enforcement statistics, as well as the Environmental Data Services (ENDS) report[84] and the reports of the Department for Environment, Food and Rural Affairs (DEFRA).[85] Available data is found for the period 2000-2007 from various sources (see Table 4 and 5).

Table 4:

England and Wales enforcement data

Year	Pollution incidents[a)]	Category 1[b)]	Category 2[c)]	Prosecutions[d)]	Convictions[e)]	Cautions[f)]	Notices[g)]	Avg.fine business £[H)]	# firms fined[i)]	Prison[j)]
2000				733		353	389	8532		
2001	33723	147	1707	786		334	434	~ 4600		
2002	~ 30000	111	1357	820		406	371	9243		
2003	~ 30000	111	1139	693		338	396	9070	215	
2004	25196	131	1068	740		345	563	8524	233	12
2005		~ 140	~ 860	887	876	335	446	8600	~ 317	4
2006		92	818	744	723			11800	255	10
2007	20708	79	748	724	702			10508	284	6
Mean	27925	116	1100	766	767	352	433	8860	261	8

Note: a) # of all substantiated pollution incidents, category 1-4 (source: WRc report for DEFRA, 2006); b) # of Category 1 incidents (persistent and extensive effects); c) # of Category 2 incidents (significant effect), source EA Spotlight reports and website, Category 3 (minimal effect) and Category 4 (no effect). Majority are Category 3 incidents. d)-g) found in the ENDS Report and Hansard Column, the number of cautions and notices for 2005 are only for 1.1.-31.10.2005 (source WRc report for DEFRA); g) notices are administrative measures; h) average fine per business in £ found in the Spotlight reports and WRc report; i) the number of firms fined is found in the Spotlight reports and EA website; j) the number of all defendants sentenced to custodial sentence found in the Spotlight reports and EA website. This number does not contain other types of sentences, such as community order, probation, etc.

It shows that on average there are approximately 27,925 pollution incidents per year in total (Category 1 – 4)[86], out of which 1,216 on average are serious (Category 1 and 2 incidents). According to Bell and McGillivray, there are around 25,000 plus pollution incidents (Category 1

[82] Environment Agency Spotlight Reports 2004-2008, http://publications.environment-agency.gov.uk/epages/eapublications.storefront/49a27c9e006dc892273fc0a802960707/Search/Run.
[83] House of Lords Written Answers (Hansard) Column WA193 (6th February 2008).
[84] ENDS Report 364, May 2005, p.14-15.
[85] DEFRA reports used: WRc report for DEFRA, *Effectiveness of Enforcement of Environmental Legislation*, 2006; Dupont, C. and Zakkour, P. for DEFRA, *Trends in Environmental Sentencing in England and Wales*, 2003; these reports can be found on DEFRA website, http://www.defra.gov.uk/.
[86] Category 1 incidents (persistent and extensive effects), Category 2 incidents (significant effect), Category 3 (minimal effect) and Category 4 (no effect).

– 4) per year, resulting in less than 5% prosecution rate (2005: 832). Thus, my collected data points to a similar estimate, with a prosecution rate of around 3% (Table 5). However, as the EA states in its Enforcement and Prosecution Policy, only serious incidents with sufficient evidence and public interest will be pursued. As can be seen from Table 5, Category 1 and 2 have a relatively high prosecution rate (increasing over time).

Table 5:

England and Wales Prosecution rates, cautions rate and notices rate

Year	prosecution rate (all incidents)	Prosecution rate category 1+2	Cautions rate (all incidents)	Notices rate (all incidents)
2000				
2001	2%	42%	1,0%	1,3%
2002	3%	56%	1,4%	1,2%
2003	2%	55%	1,1%	1,3%
2004	3%	62%	1,4%	2,2%
2005		89%		
2006		82%		
2007	3%	88%		
Mean	3%	63%	1,3%	1,6%

Source: Authors' calculations

This data indicates that serious incidents (Category 1 and 2) have on average a 63% prosecution rate. This implies that the EA uses targeting (on targeting see Heyes and Rickman 1999: 361-378). Cautions have been given only in 1.3% of all pollution incidents, and administrative tools, such as notices in 1.6% of all pollution incidents, on average. It should be noted that enforcement notices are more widely used by the local authorities for environmental enforcement than by the EA[87], hence the notices rate here calculated might be underestimated. As to the number of suspended or revoked licenses, I do not have supporting data; however, this number is expected to be very low.[88] Neither do I have data on the number of warnings given. However, the percentages of any formal action by the EA seem to be very low, which in

[87] DEFRA Report, *Review of Enforcement in Environmental Regulation*, 2006, Annex B. In the UK, some enforcement powers are decentralized to local agencies.

[88] Ogus and Abbot (2002: 283-298) show that between 1996 - Feb 2001, there have been only 6 waste management licenses revoked, and that the EA is using this tools only as last resort.

turn indicates a very high dismissal rate. This might also have to do with the fact that due to the type of harm specific to environmental offences (diffuse, remote), it is not always easy to identify the offender.[89] This poses serious problems for the agency to collect sufficient evidence in order to initiate a prosecution. This enforcement pattern might change with the availability of administrative fines and other administrative measures, such as enforcement undertakings.

As to criminal fines and prison sentences (Table 4), the average fine per business imposed by the courts is £8,860. This seems to be still relatively low compared to the benefits of violation, which might amount to tens or hundreds of thousands of pounds.[90] Hence, it is often more profitable to violate and risk paying the fine once caught than to comply. The reason for this has been suggested to be the fact that judges do not know how to evaluate environmental harm properly, and hence underestimate the level of sanctions needed to deter (Navarro and Stott 2002: 283-298; Watson 2006:111). This might also change with the new regulations, as a part of the administrative fine will be the removal of the financial benefit. The limited data on the number of defendants sentenced to jail (custodial sentence) indicates that on average 8 defendants are sentenced to prison each year, which is extremely low given the number of pollution incidents and the number of prosecutions. Obviously this has to do with the fact that custodial sentences are extremely expensive, require strict procedural safeguards and cannot be imposed upon legal entities (firms).

Furthermore, it has been reported that small firms (SMEs) and individuals account for most environmental crime.[91] In 2004, there were 367 prosecutions against individuals, 278 against SMEs and only 88 against LPCs (Large Private Companies).[92] Overall, it is said that SMEs are responsible for 80% of pollution incidents in England and Wales,[93] and for about 50% of all

[89] ENDS Report 364, May 2005 states that in 2004 offenders were identified only in 61% of major incidents.
[90] For some examples of inadequate sentencing, see Spotlight reports and WRc report for DEFRA.
[91] With regard to the type of industry, the most frequent polluters are the waste management industry and the sewage and water industry, see ENDS Report and WRc report for DEFRA.
[92] ENDS report 364, May 2005
[93] WRc Report for DEFRA, *The Effectiveness of Enforcement of Environmental Legislation*, 2006

serious pollution incidents.[94] The fact that the majority of SMEs is prosecuted or have poor environmental performance can also be seen from the spotlight reports. The main reason given for this non-compliance among SMEs is the lack of information and understanding of the environmental regulation.[95] Even though ignorance is no defense, making companies aware of their duties with respect to the protection of environment might decrease even more the resources needed for enforcement. These would be the type of violators for who informational remedies are sufficient.

5.3.3 The Netherlands

In the Netherlands, environmental law is enforced through a mix of administrative and criminal law.[96] The main environmental act so far in the Netherlands is the Environmental Management Act ("Wet Milieubeheer") of 1993 (for an overview see Seerden and Stroink 2007: 419). This act integrates a number of previously existing laws in order to increase the transparency of the licensing system (Faure and Heine 2000:235-240). Chapter 18 of this Act deals with enforcement. Administrative enforcement as a whole is regulated via the General Administrative Law Code 1994 ("Algemene Wet Bestuursrecht" or Awb). Criminal law enforcement is regulated via the Dutch Criminal Code ("Wetboek van Strafrecht") and via the Economic Offences Act ("Wet Economische Delicten" or Wed).

In practice, most of the environmental laws in the Netherlands are enforced through the Wed. What constitutes an economic offence is listed in Article 1 of Wed. This is a list of public environmental law provisions, which are enforced through Wed. In principle, the environmental offences falling under Wed have a feature of 'abstract' endangerment offence. This means that criminal liability occurs even for violations of administrative duties specified in the laws falling under Article 1 of Wed. Article 2 of Wed specifies, whether the offences under Art 1 are crimes

[94] Environment Agency, *Spotlight on Business: 10 Years of Improving the Environment*, 2008
[95] 41% of SMEs believed clearer information would encourage compliance, see WRc Report, 2006.
[96] Private law plays a role as well, but its discussion lies outside the scope of this chapter.

("misdrijven") or violations ("overtredingen"). Based on this, a corresponding sanction or a measure is applied (Art. 6-8 Wed).

On the other hand, the two articles of the Dutch Criminal Code, which are directly related to environmental pollution, Articles 173a and 173b, are an example of a 'concrete' endangerment offence. They read that criminal liability is invoked when a concrete discharge occurs into the water, the soil or the air, and which has been done intentionally (or negligently), and unlawfully. However, criminal sanctions are applied only if this discharge threatens public health or someone's life; hence this provision is directed more towards the protection of individual rather than of the environment, and when this has been done illegally (Faure and Heine 2000:237; Biezeveld 2009: 19-24). The illegality criterion constitutes a problem since most of the discharges take place lawfully within the scope of the different regulations (Faure and Heine 2000:237). As a result, these two articles are not widely applied in practice.

The difference between the three 'enforcement' instruments lies also in the type of sanctions available. A first possibility for the competent administrative body is to issue an administrative order under penalty.[97] The idea of this competence is to force a perpetrator to compliance: the offender has to pay the sum only if he remains unwilling to end the violation in accordance with the administrative order issued by the authorities (Seerden and Stroink 2007: 419). This administrative order should not be confused with the sanction of issuing an administrative fine.[98] The aim of an administrative fine is not primarily to end the offence, but to punish the offender. As mentioned in Chapter 2, so far the imposition of an administrative fine in environmental law is not possible in the Netherlands (it is mostly in traffic and social security legislation) but proposals have been formulated to introduce administrative fines in the Netherlands as well (Seerden and Stroink 2007:202). Yet another possibility for the administrative authority is to issue an administrative act stating that the illegal violation of the

[97] In Dutch referred to as a "dwangsom". The formal competence can be found in Article 5:32 of the General Administrative Law Act ("Algemene Wet Bestuursrecht").
[98] In Dutch referred to as "bestuurlijke boete".

activity has to be rectified.[99] This can lead e.g. to a factual shutting down of an establishment (Seerden and Stroink 2007: 419). In the majority of cases (80%), it is reported that no formal action is taken, as many companies are forced to compliance via other measures, such as this administrative order under penalty (OECD 2009b). For serious violations, these are usually prosecuted in parallel with administrative actions, and the prosecutor may also suggest a 'transaction' (settlement) (OECD 2009b).

Wed offers a greater repertoire of sanctions than the Dutch Criminal Code, including reparatory sanctions for environmental offences, publication of the judgment or the closure of the company (available only under Wed, Article 7 and 8). The size of the penalty depends on whether the offence is considered a crime or only an infringement of law, and whether it has been committed by a legal or natural person. Under Wed, a fine can be imposed in addition to a prison sentence. Under the Criminal Code, all offences are regarded as crimes, hence the available sanctions are usually fines and imprisonment. Under Dutch law, the confiscation of an illegal gain is also possible. This increases the total size of the sanction even further.

In the Netherlands, the Wed and the Awb are equal and used side-by-side. Hence, the argument that criminal law is used as *ultimum remedium* does not hold in the Netherlands (Biezeveld 2009: 19-24). Once a violation is observed, the criminal and administrative enforcement bodies negotiate together the allocation of tasks. Generally speaking, violations can be divided according to three categories (Biezeveld 2009:23). First, environmental violations without criminally relevant circumstances (simple or minor violations) are completed by the administrative body, by imposing an administrative warning, measure or an administrative fine. Second, environmental violations where the circumstances show to be relevant for criminal enforcement, and are priority enforcement problems, require an action by the administrative body and/or by the public prosecutor. In this case, also criminal sanctions, as articulated in Art. 6-8 of Wed, can apply. Lastly, for serious violations, criminal enforcement is used, with the possibility of being complemented by administrative sanctions, such as the

[99] Referred to as "bestuursdwang".

revocation or suspension of permits and possibly shutting down of the company. According to Biezeveld, this "cooperative model" between the administration and the prosecution may lead to problems due to their fragmentation and hence, due to the lack of exchange of information between the two. As a result, this might be an obstacle to tackling serious and organized environmental crimes (Biezeveld 2009:22).

It is important to mention that in 2000 an experiment was started in which a small number of administrative authorities (mainly municipalities) received the power to offer a so-called transaction to the offender. This would apply for so-called simple and frequently occurring environmental offences.[100] This experiment allowed administrative authorities to impose punitive penalties (monetary sanctions) although this sanction is normally only vested in criminal authorities (more particularly the public prosecutor). It is considered as a form of criminal enforcement by administrative authorities (Seerden and Stroink 2007:207). This experiment lasted for several years, but at this stage it is unclear whether it will give rise to a broader introduction of administrative fines in the Netherlands.

A problem with the Netherlands is that there is no systematic data for a longer time period that would register the number of violations and the consequences (administrative, criminal etc.), nor on the sanctions. The Central Bureau of Statistics provides information (but unfortunately) only for 1990-1996 for the number of violations against the Environmental Management Act and against the Surface Water Act. Due to the very low number of observations, it is not worthwhile to report these statistics.

Another source of data is the inspection reports from the Ministry of the Environment (VROM). However, this data is only available for a limited period of time and comes from the yearly reports of the environmental inspectorate in the Netherlands. The data is available only for a period of eight years (1999-2007, with the exception of 2001). The data set provides detailed data on the number of inspections exercised in companies, in vehicles and the number of

[100] Royal Decree of 8 July 2000, *OJ* 2000, 320. In Dutch this decree is referred to as "Transactiebesluit Milieudelicten".

violations observed. It then also provides information on the number of administrative actions taken and the number of times a criminal action was taken (Table 6).

Table 6:

The Netherlands Enforcement of environmental laws 1999-2007 (Source: VROM)

Year	# inspections (in companies)	# vehicles inspected	# violations observed	Action under administrative law		Criminal enforcement (# NOVs)	Observed violations ratio	% Administrative measures	% NOVs
				Warnings	Administrative measures				
1999	3583		632	144		323	17,6%	22,8%	51,1%
2000	3509		1214	277		463	34,6%	22,8%	38,1%
2002	3541	3097	1119	406	402	223	16,9%	72,2%	19,9%
2003	3329	1723	1095	483	239	330	21,7%	65,9%	30,1%
2004	2678	3855	1193	249	194	209	18,3%	37,1%	17,5%
2005	42321	8730	1025	133		144	2,0%	13,0%	14,0%
2006	2459	2242	2040	906		203	43,4%	44,4%	10,0%
2007	6178	2082	2286	921		155	27,7%	40,3%	6,8%
Mean			1325,5			256,25	22,8%	39,8%	23,5%
Mean excl. 2005			1368,43			272,29	25,74%	43,64%	24,79%

Source: Ministry of the Environment (VROM)
Note: From 2005 onwards there is no separation made between the different administrative measures. Observed violations ratio indicates the percentage of inspections (at companies and vehicles) which result in an observed violation. % Administrative measures variable shows the percentage of observed violations for which an administrative action was imposed (warnings + administrative measures). % NOV indicates the percentage of observed violations for which a NOV was issued and sent to the public prosecutor (criminal enforcement).

There are on average 22,8% of inspections where a violation has been observed. On average in 39,8% of these observed violations, an administrative action is taken, while only in 23,5% a NOV is issued, and hence an action under criminal law is commenced. However, any conclusions implied from these results should be drawn carefully as the data is available only for 8 years and the results vary greatly across years. Furthermore, year 2005 seems to be an outlier as there have been 42 321 inspections performed in that year, which is more than ten times more than in any other year. The last row represents the average values excluding this year from the sample. What can be concluded is the fact that administrative actions are on average much more used than criminal actions (it should be noted that out of the total number of NOVs, only a portion of violations is prosecuted).

In addition, there is limited data available on criminal sanctioning of environmental offences in two Dutch cities (Den Bosch and Leeuwarden) in the report by Schoep and Schuyt (2008). The number of cases investigated is very low (max 18 for each violated article), nevertheless a great variety in sanctioning can be seen. Out of all the sanctions imposed (total of 64), 95% (61 sanctions) are fines. There were only 3 imprisonment sentences imposed, ranging from only 2 months to 2 years (24 months). There were 11 fines above €10,000, with a maximum fine of €40,000. The average fine for each violated article ranges from €1,351 to €2,342.

5.3.4 Germany

As far as enforcement of environmental law is concerned, a variety of legal instruments is available in Germany (Seerden and Stroink 2007: 419). They can be found either in administrative law (administrative sanctions), in administrative penal law ("Ordnungswidrigkeitenrecht") or in truly criminal law. First, administrative agencies in Germany have at their disposal a variety of administrative instruments to force an offender to comply with administrative provisions, such as licence conditions (Seerden and Stroink 2007: 419). A second possibility is the use of the so-called "Ordnungswidrigkeitenrecht". This is a system of administrative penal law which allows for the imposition of administrative fines.[101] The "Geldbuße" (administrative fine) can on the basis of paragraph 30 of the "Ordnungswidrigkeitengesetz" also be imposed against legal persons, as mentioned in Chapter 2.[102] The third means of enforcement is against criminal offences which have been incorporated into the German Criminal Code[103] in 1980. The Criminal Code contains *inter alia* provisions against water pollution, pollution of the soil and air pollution. The enforcement of environmental crime in Germany hence principally takes place via these provisions in the Criminal Code. For less serious offences (usually when no emission took place), the administrative penal law will be applied and leads to the imposition of an administrative fine.

[101] In German referred to as a "Geldbuße".
[102] This is important since the real criminal law in Germany cannot be applied against legal persons. Since the "Geldbuße" is, however, not considered a criminal sanction the application of the "Geldbuße" against firms is accepted.
[103] "Strafgesetzbuch"

In the 1980s and 1990s, a group of criminal lawyers and criminologists from the Max Planck Institute for Foreign and International Criminal Law was engaged in a project on the protection of the environment through the use of criminal law. Günter Heine and Volker Meinberg have some relevant data on enforcement of environmental law in the period 1975-1986 (1988). It is striking according to the scholars that in 1985 more than 40% of all cases were dismissed.[104] The numbers presented by Heine and Meinberg were based on a more detailed study exercised by Meinberg, published in 1988 (1988: 112-157).

In German criminal procedure ("Strafprozeßordnung", abbreviated as StPO), prosecution of all violations is (formally) the rule.[105] Hence the StPO contains a lot of specific rules and conditions under which cases can be dismissed (not prosecuted). According to Meinberg's study, 47,5% of the cases ends with a dismissal by the public prosecutor when there is no reason for public prosecution (hence for policy reasons) on the basis of § 170 II StPO (1988:139-143). Dismissal in case of minor offences was in 14,6% of the cases (§ 153 I StPO) and 13,1% were conditionally dismissed[106] (§ 153a I StPO). Altogether this forms 75% of cases dismissed by the public prosecutor.[107] With regard to the decisions by the courts, Meinberg finds these results remarkable: already a very small number of environmental cases is brought before the criminal court and still more than 50% of all cases will be dismissed by the court on the basis of § 153 II (dismiss the case after approval of the public prosecutor) or 153a II (conditional dismissal) of the Code of Criminal Procedure (16,4% + 37,2%). This basically means that they are not considered as worthy of a penalty and will thus be excluded from the formal sanctioning procedure (Meinberg 1988:147). However, this does not mean that there are no consequences for these acts.

[104] Although one has to be a bit careful with interpreting this result: the German term *Einstellung* (dismissal) does not necessarily imply that no action took place: in some cases a dismissal is conditional upon the payment of a sum of money.
[105] This follows from paragraph § 152 II of the German Court of Criminal Procedure (*Strafprozessordnung* (StPO)).
[106] There can be a conditional dismissal upon e.g. doing community service or paying an amount to an institution of social interest.
[107] However, one should be careful with interpreting this number: the 75% dismissals only mean that very few cases are brought to the court, but not that nothing happens. Under e.g. a conditional dismissal the dismissal can be made conditional upon the fulfilment of particular obligations by the violator.

Meinberg also discusses the enforcement through administrative fines. He notices that it is mostly the less important violations that are handled through them. It would be an exception that cases where an emission (and thus a concrete danger for the environment) took place would be handled through administrative penal law (Meinberg 1988:153). He equally concludes that the procedural costs in this administrative penal law are usually extremely low since this is mostly limited to interviewing the perpetrator (Meinberg 1988:153). Meinberg found that most of the procedures in administrative penal law with respect to environmental violations end with a decision to impose an administrative fine.[108] The amount of the sanction is, however, on average lower than what would be imposed through the criminal law (Meinberg 1988: 112-157).

Another empirical research has been executed by Wolfram Lutterer and Hans J. Hoch (1997). They used of a representative dataset for environmental violations in Germany and analysed in detail how these violations were dealt with, both in criminal law and in administrative law. They report on the decisions of the public prosecutor in 1014 cases, which they specifically analysed with respect to environmental crime (Table 7).

Table 7:

Germany Decisions of the public prosecutor, the courts and administrative authorities

Public prosecutor		Courts		Administrative authorities	
Dismissal for lack of evidence (companies)	24,9%	Acquittal	6,6%	Dismissal § 46	24,0%
Dismissal for lack of evidence (individuals)	23,2%	Dismissal because of little interest (§ 153 II StPO)	16,1%	Dismissal according to § 47	9,0%
Dismissal because of small interest of the case (§ 153 I StPO)	14,7%	Dismissal with conditions (§ 153a II StPO)	37,2%	A warning	8%
Dismissal with conditions (§ 153a I StPO)	13,2%	Conviction	30,1%	Imposition of fine	53,0%
Imposition of a fine (*Strafbefehl*)	16,1%	Other	9,9%	Other	6%
Prosecution	7,9%				

Source: Lutterer and Hoch

Note: Cases dismissed according to § 46 are those cases, which have some uncertainty with respect to the case. Dismissal for lack of evidence varies for companies and individuals because the legal ground on which the public prosecutor can dismiss the case can be different. Dismissals according to § 47are dismissals where the administrative authority does not hold it necessary to impose a sanction.

[108] A so-called “Bußgeldbescheid”.

What is of course striking from the decision of the public prosecutor is that in almost 60% of the cases a dismissal takes place, whereas in only 7,9% of the cases a prosecution takes place. That is just 1/12 of all cases. However, a distinction should be made between dismissals caused by lack of evidence (technical reasons) and those because of policy reasons. The first type of dismissal is not based on the choice of the prosecutor himself, since even if he wants to prosecute he cannot. In these cases, administrative enforcement might not work as the cost-effective instrument to reduce the number of dismissals. Lutterer and Hoch also have data on the procedural decisions within the administrative penal law. Notice that the warnings are used only in 8% of the cases. Moreover, a warning can within administrative penal law in Germany, also take place with the imposition of a fine.[109] A fine is imposed in 53% of the cases by the administrative authorities. This is in sharp contrast with the fine imposed by the public prosecutor, which happens only in 16,1%.

When further comparing administrative penal law and criminal law, the authors conclude that in the case of administrative penal law, in 57% of all cases some noticeable reaction (which one could equalise with a sanction) takes place. In the criminal procedure (by which is meant in this case the public prosecutor) this was only in 48,9% of the cases. In that respect the authors concluded that the administrative penal law has a higher probability of a sanction being imposed than the criminal procedure (Lutterer and Hoch 1997:190). However, the average fines imposed through the criminal system were on average higher than the average fines imposed through administrative penal law. However, for both cases it is clear that the formal statutory possibilities to impose (much higher) sanctions are never used. Lutterer and Hoch therefore conclude that in administrative penal law sanctions are imposed more often, but that on average they are more severe in the criminal procedure (1997:191).

More recent data is provided by Almer and Goeschl (2010: 707-726). Their dataset comprises the period 1995-2005 for 16 individual states in Germany, leading to 152 observations (some states have incomplete reporting). From their summary statistics for all their variables, it can be

[109] This is referred to as a so-called “Verwarnungsgeld”.

seen that on average the clearance rate[110] is 59%, the rate of tried offenders[111] is 26,3%, the conviction rate[112] is 76,2%, the prison rate[113] is 3,5%, and the rate of severe fines[114] is 6,4%. This implies that once a potential violation has been detected (and there are violations that go undetected and unrecorded), only in 59% of cases the offender is identified, and hence a violation is formally established. From these 59% of identified offenders, only 26,3% are tried. Thus the probability that an offender is apprehended and prosecuted is even lower (maximum 15,5%).[115] However, as indicated above, even in cases where an identified offender is not prosecuted, this does not mean that no reaction takes place at all. The prosecutor can impose conditions, such as e.g. the payment of a fine. Once an offender is prosecuted, in 76,2% he/she will be convicted. This high conviction rate is unsurprising as a case gets to the court only if there is sufficient evidence against the tried offender, and hence a high probability of conviction. This decreases the probability of being sanctioned even further. With regard to the type of sanctions imposed, only 3,5% of convicted offenders are sentenced to imprisonment and 6,4% have to pay a severe fine, which established officially a criminal record. In the remaining 90,1% of convicted offenders, a less harsh criminal sanction is imposed.

5.4 Critical Comparative Analysis and Implications

The theoretical argument developed in section 5.2 has been that allowing for administrative enforcement of environmental violations in addition to relying only on criminal enforcement could be a cost-effective way to decrease the number of dismissals. Assuming there exists a

[110] The number of cases with identified offenders divided by the number of all reported cases.
[111] The number of tried offenders divided by all identified offenders.
[112] The number of convicted offenders divided by all tried offenders.
[113] The prison rate indicates the share of convicted offenders who were sentenced to jail. In other words, the number of imprisoned offenders divided by all convicted offenders.
[114] The rate of severe fines indicates the share of convicted offenders who had to pay a fine over a specific threshold, above which individuals officially have a criminal record. In other words, the number of convicted offenders who had to pay a fine above a certain level divided by all convicted offenders.
[115] The probability an offender is apprehended and prosecuted equals the probability an offender is identified (but this might not be an exact measure of apprehension as in those 41% of cases where an offender was not identified, this might have been due to the fact that a recorded case was not justified to be classified as a violation) multiplied by the probability he/she will be tried (prosecuted). Moreover, the number of undetected violations is not known, which decreases the probability of apprehension even further.

range of offences, which merit being sanctioned but not being prosecuted, administrative law might play a big role. Hence, criminal and administrative sanctions could serve as complementary instruments if the budget is constrained. The previous section has analyzed the enforcement systems in two countries (Germany and the Netherlands) which rely on both, administrative and criminal enforcement, and two jurisdictions (the UK and the Flemish Region) which relied primarily only on criminal law enforcement.

Firstly, it may be clear from the data provided that given the low quality of the data, it is not possible to do a serious comparative analysis comparing the relative effectiveness of the enforcement systems in the four legal systems. This is not only the case because of data incompatibility, but also, as showed, because the four legal systems differ in their administrative and criminal law systems. As such, the data are not presented as decisive evidence, but merely to support the general line of reasoning discussed above. Nevertheless, the comparison of the legal systems discussed here provides some first indications to support the hypothesis that administrative sanctions, namely administrative fines, could be a valuable additional instrument to enforce environmental violations.

5.4.1 A Brief Comparison

The presentation of the four legal systems made clear that at least on paper until 2008 the institutional arrangements used were quite diverging. Table 8 presents some comparison between several enforcement variables. The Flemish Region based the enforcement of environmental law mainly on criminal law. Even though the Environmental Inspectorate issues a NOV for all violations (legally obliged), only 7-10% on average are prosecuted. In the UK, the prosecution rate is even lower, on average 3% of all pollution incidents. This indicates a very high dismissal rate of violations which do not fulfil the criteria for prosecution (for various reasons) and a high degree of discretion at the level of the agency as well as the prosecutor. In the UK, it can be seen that on average 63% of serious violations are prosecuted. This shows that there is a range of offences which merit enforcement but do not fulfil the requirements for prosecution. The Flemish Region developed an alternative, a so-called ‘transaction’ within the

criminal law system, and uses it for 26-29% of the NOVs.[116] In general, what can be observed is a high dismissal rate for which no alternative sanctioning mechanism was developed (with the exception of recommendations and warnings, and the 'transaction' in the Flemish Region), and a rather low level of criminal sanctions (low fines compared to the benefits of violations and rare use of imprisonment). However, the introduction of administrative fines in both, the UK and the Flemish Region indicates that relying only on criminal sanctions does pose a problem for enforcement also in practice.

Table 8

Comparison enforcement variables (mean values)

			Criminal enforcement				Administrative enforcement
Country	# pollution incidents/observed violations	observed violations ratio	% NOVs	prosecution rate	dismissals	transaction	% administrative measures
Flemish region (1998-2008)	708	6%	92%	7%	64%	29%	~1200 warnings ~10-30 sanctions
UK (2000-2007)	27925 (serious 1216)			3% (63%)			1.6% notices rate
The Netherlands VROM (1999-2007)	1325,5	22,80%	23,50%				39,80%
Germany							
(1980s)				7,90%	60-75%		> 60% (fine or a warning)
Almer and Goeschl (1995-2005)				26.3%			

On the other hand, the Netherlands shows a more mixed picture: even though (with the exception of a small experiment), the Netherlands has no deterring administrative fines for environmental offences yet, alternatives (like order under penalty) are often used, as a result of which the perpetrator can be forced to pay a monetary sum. Even though the goal is not deterrence, but to bring the perpetrator towards compliance, in economic terms these administrative orders strongly resemble administrative fines. According to the recent estimates of the Ministry of the Environment (VROM), on average in around 40% of the violations an administrative measure has been imposed, while a NOV is issued only on average in 23,5% of the violations (Table 6). Germany even has a different formal system to deal with administrative

[116] In the Netherlands, transaction also exists; unfortunately I do not have any data on it.

offences: the "Ordnungswidrigkeitenrecht" which allows the imposition of administrative fines. Warnings (8%) and administrative fines (53%) according to the data were imposed on more than 60% of violations. Even though it cannot be evaluated properly what happens with the dismissed cases by the public prosecutor in these two countries and whether the dismissal rate in fact decreases, the fact that the offender might face besides criminal an administrative sanction, increases the level of the expected sanction (under the conditions of sufficiently high probability of being sanctioned and sufficiently high level of the actual administrative sanction imposed), and hence increases the deterrence from an *ex ante* perspective, if the Becker model holds.

5.4.2 Sufficiently High Probability of Being Sanctioned?

As mentioned above, only a fraction of NOVs is prosecuted with the tendency of courts to focus on the more serious cases, so-called 'targeting' (e.g. in the UK this is evident as 63% of the serious cases is prosecuted). One of the reasons given is the strict evidentiary requirements of criminal proceedings and the costly criminal procedure. Administrative proceedings do not have such stringent requirements, and even if they do (as required under the new regulations in the UK), the fact that the violation does not have to proceed to the public prosecutor makes the imposition of administrative sanctions faster and cheaper (disregarding the possibility to appeal). This could imply that the probability of being sanctioned with an administrative penalty strictly outweighs the probability of a criminal sanction. This can also be observed in the Netherlands and Germany.

However, the probability of being sanctioned depends also on the probability of being detected. This also varies across countries; for example in the Flemish Region the probability of a firm being inspected is 0,2. Hence, not only the question of what is done once a violation is observed, but also the question of how to minimize the 'dark' number of undetected violations is very relevant to the question of whether administrative sanctioning will be able to deal with the moderately serious cases needing enforcement (and as such also increase the level of the expected sanction *ex ante*).

In addition, the question arises whether one can always interpret the high number of dismissals as cases where "nothing happened". First, there could be regulatory dealings whereby the prosecutor, in cooperation with the environmental agency leads the violator towards compliance (Fenn and Veljanovski 1988: 1055-1070). The dismissal may then fit into a soft approach, leading the prosecutor to dismiss only when there is evidence of compliance by the violator. However, the problem remains that even if this soft approach were to lead to compliance *ex post*, *ex ante* the average expected (legal) sanction remains low (legal because there might also be non-legal sanctions, such as stigma or loss of reputation). An interesting alternative for the administrative fine has been developed in the Flemish Region (and the Netherlands), being the proposal of a transaction by the public prosecutor (in 26-29% of the NOVs). It is a low cost alternative that avoids that the prosecutor has to choose the costly criminal procedure. However, according to the estimates from the literature (average payment of about €300), the deterrent effect seems to be very low. Allowing for the imposition of administrative fines seems to be another plausible alternative to deal with the cases deserving enforcement.

5.4.3 Implications for the Actual and Expected Sanctions

In a Beckerian world, the expected sanction is a product of the probability of being detected and sanctioned and the actual sanction imposed (ES = p.S). The probability of detection and being sanctioned has been discussed above, and it has been implied that administrative sanctioning might increase the probability of being sanctioned as the administrative procedure seems simpler, hence less costly, and the environmental authority imposes the administrative sanction by itself. As to the other variable in the equation, the level of the actual sanction, what can be observed from the four jurisdictions analyzed is the fact that average criminal fines tend to be relatively low. This is the case both, with respect to the harm done and with respect to the level of the private benefits of violation. In the Flemish Region, earlier research examined average fines imposed by courts and indicated average fines of between € 5.000 and € 6.165 (Rousseau 2007: 1-26; Billiet and Rousseau 2003: 120-134). If these were the only costs of the criminal procedure, multiplied with the 0,01 probability of detection and sanctioning, this

would lead to expected sanctions varying between € 50 and € 61.[117] Data from the UK also leads to low estimates of expected sanctions. It was indicated above that average prosecution rates vary between 3 and 5%. An average fine per business imposed by courts is € 8.860, whereas prison sanctions are rarely imposed (Table 4).

The Netherlands shows also relatively low sanctions imposed through the criminal system, ranging for some violations from € 1.351 to € 2.342. However, the situation in the Netherlands is different since in around 40% of cases administrative measures are imposed. Unfortunately this percentage only shows that an administrative action was taken, including a warning. From the data it could be seen that approximately half of the administrative actions are warnings, the other half are administrative measures (for years where the separation is made). However, the fact that the agency can impose an administrative order or a measure, does take away some burden from the courts. Germany is even a better case. As mentioned already, the severity of administrative sanctions might in some cases even outweigh that of criminal sanctions as courts are not always capable of assessing the environmental harm correctly.

It is hence not difficult to argue that given a fixed budget for enforcement of environmental violations, it might be useful to divide the resources between criminal and administrative law systems, as these prove to be good complements. Imposing less harsh administrative sanctions for less serious violations might also mitigate the problem of marginal deterrence. Obviously, criminal law offers an incapacitation effect by using imprisonment, which is not available under administrative law. However, there is the possibility of suspension or revocation of licenses, which has been considered to be a strong deterrent with an incapacitation effect, but has been rarely used (e.g. in the UK). Moreover, stigma and loss of reputation effects might be missing too from administrative law enforcement. Unfortunately, available data does not allow to further explore non-legal sanctions stemming from a potential criminal conviction. Prosecution before the criminal court and the sanctioning could impose a "stigma" on firms and thus create

[117] However, as will be indicated below, there may be other costs involved with the criminal prosecution that could increase the (subjective) expected sanction for the violator. Moreover, to this should also be added the probability that a violator is imposed a transaction by the prosecutor.

a reputational loss which may lead firms towards compliance (see the discussion in the previous chapter on stigma). Nevertheless, some argue there is no stigma and reputation loss with regard to environmental violations (Karpoff, Lott, and Wehrly 2005: 653-676). Environmental agencies can and do (e.g. in the UK) publish a list of companies and their performance, including whether prosecution followed. In addition, even if criminal law would have this additional advantage of providing more stigma or contributing to the creation of social norms, it can barely perform these tasks if it is rarely applied in practice. Moreover, firms might lack information on the actual expected sanction. This has been confirmed in earlier research concerning the Flemish Region which showed that when firms had to pay a monetary sanction in a first period, the firm was more likely to be in violation in a second period (Billiet and Rousseau 2005: 2-33; Rousseau 2007: 1-28). Firms that did not have to pay a fine hence overestimated the expected sanction. Sanctioning a violator with a too low fine thus had a perverse learning effect: it informed firms about the low expected sanctions and thus reduced compliance.

5.5 Concluding Remarks

To sum up, it has been argued that administrative sanctioning might be able to deal with a range of violations which do not merit going through the high cost criminal procedure but still merit enforcement at a relatively low cost. Hence, for a range of violations, enforcement through criminal and administrative law would work as substitutes. This would hold under the assumption that enforcement through administrative law is cheaper than through criminal law. Unfortunately, to my knowledge there is no empirical evidence provided in the existing literature, and hence I can only reason it based upon the difference between the administrative and criminal procedures. Especially for minor (administrative in nature) violations, administrative fines may be more efficient. If that option does not exist, there is likelihood that as a result of discretion by the public prosecutor, enforcement agencies would focus the criminal law efforts only on the main cases, dismissing many others. But if an alternative through the administrative penal law can be offered, one can expect that this takes care of the

moderately serious cases deserving enforcement. Four legal systems were looked at and enforcement practices were examined in two countries with a mainly administrative law enforcement system and two where the criminal law enforcement was the main system. Even though the data is not comparable, our findings as well as the recent legal developments in the UK and the Flemish Region seem to confirm this hypothesis. This seems contrary to the current trend in the EU towards the mandatory use of criminal law to enforce environmental directives.

Still one has to be careful with generalising the conclusion that systems which allow for a more balanced use of the criminal law (by combining it with administrative law for minor violations) are more efficient than systems which merely rely on the criminal law. After all, the data did not allow for testing the overall effectiveness of the differing approaches as far as the effect on environmental quality is concerned, neither on compliance with environmental regulation by firms. Moreover, economic literature has equally indicated that administrative law systems may have the disadvantage that enforcing agencies could enter into a collusive relationship with the regulated firms as a result of which also administrative agencies could not always impose efficient sanctions. Thus, whenever administrative systems are introduced to deal with environmental crime, some control mechanism to verify the decision-making by administrative authorities (e.g. by an independent judge or public prosecutor) should be put in place.

It can be also noticed that in practice there is not always a clear dividing line between administrative and criminal law. Some legal systems use within the criminal law also fines of a more administrative nature since these are payments which can be imposed by the prosecutor as a low cost alternative for the court system, such as transactions. They have in fact a more administrative character but are imposed via the public prosecutor within the criminal court system. It undoubtedly merits further research to examine the comparative benefits of these transactions versus a truly administrative penal law.

Another finding during the analysis was that in fact in none of the four legal systems reliable data is available, neither on the number of violations, nor on the consequences adhered to

those (transaction, administrative penalty, criminal sanction, other), nor on the sanction finally imposed. It seems that the trend is to report less and less over time, as the information reported has decreased in more recent years. Even within the countries, the information is only available to a limited extent and for particular time periods and there is no comparability whatsoever between the systems examined. This is probably not much better for other EU Member States. In the absence of reliable data, much of the analysis is in fact guessing in the dark since neither before nor after these legislative changes reliable data is available e.g. to check the effects of particular legislative changes. Hence, it would be advised that a harmonised system of data collection on inspections, violations, measures taken, and sanctions would be established.[118] Only when such a reliable information system is available, it becomes possible to either predict *ex ante* or analyse *ex post* what particular effects of legislative changes would be.

Since from the data it is not clear whether administrative fines are indeed socially desirable (the data indicate that they are), the next chapter will build upon this analysis and theoretically investigate under which conditions the complementary use of administrative fines would be welfare enhancing. A very simple model will be developed taking into account the situation that many minor crimes are not enforced (as was shown in this chapter), if only enforcement through criminal law is available (such as was in the UK and the Flemish Region). This will then be compared with a situation where administrative fines are available (such as in Germany), and how they impact social welfare.

[118] In Belgium, this is done by Environmental Lawforce group.

Chapter 6: Complementary Use of Administrative and Criminal Fines in Enforcing Environmental Regulations

6.1 Introduction

As already mentioned, not all crimes are prosecuted. There exists a lot of diversion of cases away from the criminal process, even though the acts are "legally" defined as criminal. The degree of diversion varies across countries. Unlike in some continental European countries (like Germany) where generally the principle of compulsory prosecution ("the principle of legality") applies, in the Anglo-Saxon countries, the principle of expediency ("the opportunity principle") plays a greater role (Ashworth and Redmayne 2005147). As described in the previous chapter, on average only 3% of all pollution incidents are prosecuted in the United Kingdom (UK), while it is 63% of the more serious incidents. In the Flemish region, the prosecution rate is on average 7%, while on average in 64% of cases the public prosecutor dismisses the case. These two jurisdictions have until the mid-2009 relied only upon the criminal law to enforce their environmental regulations. In case of Belgium and the Netherlands, a so-called 'transaction' is also available under the criminal law system, where the prosecutor may offer a "deal" (payment of a sum of money) to the violator in return for non-prosecution. However, a problem still remains: what happens with all those violations, which do not merit entering the prosecution process but still merit enforcement?

As shown in the previous chapter, the dismissal rates are relatively large. The trend is leaning towards the use of administrative fines; nevertheless, the European Commission tends to favor the criminal law scenario, which can be seen from its recent promulgation of a directive on the protection of the environment through criminal law, discussed earlier. Administrative fines have many proponents, such as Germany and Belgium (Brussels region) where they are extensively used but also many opponents, for example Slovakia, who argue that administrative fines as such lack the deterrent effect as the companies tend to include them in their costs of

doing business.[119] Hence, it is still very important to keep the criminal fines. However, the problem with criminal fines is the aforementioned low prosecution rate and a rather high dismissal rate. This is mainly the case for minor violations where the stakes are not so high, hence these violations do not always merit going through the entire criminal process. Thus the goal of this chapter is to see how these two types of fines might interplay in order to maximize social welfare. As shown in Chapter 4, there is no doubt that criminal law is needed (Polinsky and Shavell 1984: 89-99; Bowles, Faure, and Garoupa 2008: 389-416). Two of its features are stigma and reputation loss. It is debated whether this applies to environmental violations. Several authors argue it does (Arora and Cason 1996: 413-432; Cohen 1992: 1054-1108). Others claim it is only the legal sanction that matters for environmental offenders (Karpoff, Lott, and Wehrly 2005: 653-676). For the purpose of this chapter, stigma will not be considered for minor violations. This might be a plausible assumption as many of the minor violations are not prosecuted, hence the offenders do not get to experience the criminal process in court at all.

In principle administrative fines could also be used for serious violations, however, they do not possess the typical characteristics of a criminal sanction, such as stigma, and they do not have the incapacitation function. Setting up administrative fines too high might also distort the distinction between criminal and administrative law, which should be maintained because of the symbolic value of criminal penalties. Therefore, it is plausible to posit that administrative fines should be limited to minor violations, while criminal fines are kept for serious violations. Administrative fines require similar standard of proof as criminal fines (at least in Europe), which might decrease their cost-advantage. Nevertheless, there are still important procedural differences, as discussed in the previous chapters, which support the use of administrative fines in terms of higher probability of sanctioning.

[119] According to Shimshak, administrative fines and other sanctions do have a deterrent effect for violators of environmental regulations in the United States, even though the average fine seem to be rather low (similar in value as in the European legal systems discussed). US Environmental Protection Agency (EPA) handles only the most serious or complex cases, while cca. 90% of cases are handled at the state level (OECD 2009b). The main formal enforcement action is administrative, prosecutions only in very limited circumstances. The reason for the strong deterrent effect of even administrative sanctions might be because all data on enforcement actions is publicly available (ECHO database), hence, public pressure and adverse publicity plays a great role. This does not seem to be the case in Europe. For an overview of the empirical literature on environmental enforcement in the US, see Gray and Shimshak (Forthcoming).

The data in the previous chapter were not comprehensive enough to determine the relative (cost-) effectiveness of criminal and administrative sanctions. A question still remains whether administrative fines are indeed more efficient to use from a welfare perspective, and if so, under which circumstances. Thus this chapter studies theoretically the effects of using administrative fines for minor environmental violations instead of criminal fines, while keeping the criminal fines for the serious cases, such as is done in Germany. A benchmark case is a regime with criminal fines only, such as has been in the UK and the Flemish Region until recently. To my knowledge, there is no example of a country which would use administrative fines alone. The focus is on fines as these are the most widely used sanctions in case of environmental violations. Non-monetary sanctions in criminal law, such as imprisonment are rarely used, and the less for minor harms (see Chapter 5). In administrative law, different types of non-monetary sanctions exist. The "softest" non-legal sanctions are warnings and recommendations. In addition, there are administrative orders, such as enforcement, prohibition or stop notices designed to force the companies to stop harmful activities rather than to deter. The company might also be made to carry out remedial works to offset its harm (on this for the UK see (Ogus and Abbot 2002: 283-298); Environmental Protection Act 1990; Environment Agency Enforcement and Prosecution Policy 2008). The most severe non-monetary administrative sanctions are the suspension or revocation of licenses, which are also rarely used (Ogus and Abbot 2002: 283-298). However, as mentioned in the introduction to this research, none of these administrative measures has as a goal to punish and deter, but rather to stop the harmful activity, which makes only administrative fines comparable to criminal fines. Nevertheless, they are not the same. The fact that criminal charges have to follow much stricter procedural requirements might have as an effect dismissal of many minor cases that do not merit prosecution. The reasons for dismissals by public prosecutor might vary from technical reasons to policy reasons or simply it is not in the public interest to prosecute. Hence, we are left with underenforcement. On the other hand, the fact that the environmental agency itself has the power to impose an administrative fine might increase the probability of sanctioning. The procedural costs of imposing an administrative fine might be also lower, as discussed in Chapter 4.

The analysis in this chapter shows that administrative fines for minor violations are welfare enhancing if the benefit from the decrease in harm and from savings in administrative enforcement costs outweighs the increase in abatement costs. Abatement cost can either take a form of investing in pollution control equipment (e.g. installing a filter) and services (e.g. cleaning services) or reducing output produced (McKitrick 1999:306). Abatement costs can differ for different sources of pollution, and the sources can be changing in time, region, size, location or technology (on the difficulty of modeling environmental instruments, see Bergh 1999: 1300). If the probability of detection and sanctioning of administrative fines is higher than of criminal fines, *ex ante* the expected administrative sanction will be higher than the criminal expected sanction. If companies take this into consideration, they will decrease emissions under the administrative sanctioning, which in turn means their abatement costs will rise. The efficiency of administrative fines depends on the distribution of abatement costs among the population of firms as well as on the relative values of criminal and administrative parameters, such as the probabilities of detection and sanctioning, marginal enforcement costs and the quota of emissions (standards) set for minor violations.

The analysis seems to suggest that administrative fines are preferable if the number of firms with a medium level of abatement costs is sufficiently large, as this is the region where the criminal-administrative differences matter the most, because this is the region of violations where administrative fines could substitute criminal fines. If the majority of firms has low abatement costs and hence is complying, or very high abatement costs and hence commits serious violations, which need to be prosecuted criminally, the difference between the two regimes (criminal only or criminal-administrative) might not be significant. Also the marginal administrative enforcement costs should be sufficiently low compared to the marginal criminal enforcement costs. This is sometimes debatable as strict procedural requirements apply to administrative fines as well. Thus this chapter indicates factors, which are important in assessing the optimal sanctioning regime for environmental violations. It is not only the expected fines and enforcement costs that matter, but also the abatement costs and their distribution among firms. Depending on the distribution of abatement costs, the level of non-

compliance will be defined, which affects social welfare. The emission standards delineating no violation from minor violation to serious violation have to be set such that there are enough firms falling into the middle abatement cost group of firms.

The chapter is structured as follows. Section 6.2 describes the basic setup and assumptions of the model. Section 6.3 presents the criminal fine model, where all environmental violations are enforced only through criminal law. Section 6.4 introduces the administrative-criminal fine model, where administrative fines are imposed for minor violations, while more serious violations are still enforced through criminal law. Impacts of the two regulatory regimes on social welfare are discussed and compared in section 6.5. Section 6.6 concludes.

6.2 The Model

6.2.1 Basic Setup

The basic structure of the model employed is similar to Rousseau (2009: 191-201). In her model she analyzes the effect of complementing fines with warnings, and finds out that when there are small legal errors (judicial mistakes about guilt), the use of warnings can be welfare enhancing (Rousseau 2009: 191-201). In this chapter, the focus is not on warnings and on the presence of errors, but on the effect of administrative fines as an additional enforcement instrument. By 'additional', I do not mean that an administrative fine is imposed on top of a criminal fine (double jeopardy)[120], but that for a range of violations, an administrative fine would be imposed *instead* of a criminal fine, as a substitute. To see under which conditions administrative fines are a welfare enhancing enforcement mechanism in comparison with using criminal fines only, I look at the impact of the two regimes (criminal only and criminal-administrative) on social welfare.

[120] When it is optimal to impose administrative sanctions on top of criminal sanctions is discussed in Garoupa and Gomez-Pomar (2004: 410-433).

Parameters used in this chapter are the following:

- p_c, p_A, p_c^c – probability of detection and sanctioning of criminal fines, administrative fines and of criminal fines for serious violations, respectively
- p_D, p_{SC}, p_{SA} – probability of detection, of sanctioning for criminal fines, and of sanctioning for administrative fines, respectively
- F_c, F_A – the size of fine, criminal and administrative, per unit of violation, respectively
- f_c, f_A – expected fine function under the criminal fine system, expected fine function under the criminal-administrative fine system
- $\bar{e}$ – emission standard above which a violation occurs
- β – the level of emissions above $\bar{e}$, which are still considered minor violations
- e_i – the level of emissions of firm i
- e_0 – the level of emissions each firm would produce without any legal restriction
- a – abatement cost function
- θ_i – abatement cost parameter of firm i
- C – enforcement cost function
- c_c, c_A – marginal criminal and administrative enforcement costs, respectively
- SC_c, SC_A – social costs under the criminal fine model, socials costs under the administrative-criminal fine model, respectively
- TC^c, TC^A – total costs incurred by firms under criminal fine model, and administrative-criminal fine model, respectively

In this model, each firm i faces the same emission standard $\bar{e}$ or a higher emission standard delineating minor from serious emissions, $\bar{e} + \beta$, where $\beta > 0$. These standards are previously specified by a legislative body and delineate minor from serious violations. Each firm would without any restriction on the emission level produce e_0 ($> \bar{e}$), but to reduce its emissions, it incurs a positive abatement cost $a(e_i)$ dependent on the level of its emissions, e_i. Firms are identical and risk-neutral but differ in their abatement cost functions (in their abatement cost parameter θ_i), and hence in the savings they generate by emitting more e_i (and having lower abatement costs).

If a firm violates ē but emits less than ē + β, it will face a criminal fine, F_c, or an administrative fine, F_A, with a probability p_c or p_A, respectively, depending on the regime. If a firm emits above ē + β, it will always face a criminal fine F_c with a probability p_c^c. The expected fine under the criminal fine model is given by

$$f_c(e_i) = \begin{cases} 0, & e_i \leq \bar{e} \\ p_c F_c[e_i - \bar{e}], & \bar{e} < e_i \leq \bar{e} + \beta \\ p_c^c F_c[e_i - \bar{e}], & e_i > \bar{e} + \beta \end{cases}$$

and the expected fine under the criminal-administrative fine model is given by

$$f_A(e_i) = \begin{cases} 0, & e_i \leq \bar{e} \\ p_A F_A[e_i - \bar{e}], & \bar{e} < e_i \leq \bar{e} + \beta \\ p_c^c F_c[e_i - \bar{e}], & e_i > \bar{e} + \beta \end{cases}$$

The firm will violate ē if the marginal costs of violation (= marginal expected fine) are lower than the marginal benefits of violation (= marginal profit from savings on abatement costs). How this standard is set or whether it is optimal lies outside the scope of this chapter. What triggers the jump from administrative fines to criminal fines is given by the seriousness of the violation. If the size of the violation is larger than β, criminal sanctions apply. If a firm complies, the government does nothing. If a firm violates, the government imposes a criminal or an administrative fine and incurs criminal or administrative enforcement costs, respectively. Administrative fines are defined as monetary fines imposed by the environmental agency itself, rather than by a judge. Thus from the perspective of a firm, the only difference between being imposed a criminal or an administrative fine is its marginal expected monetary value. Put differently, who imposes the fine does not matter for the firm. This is not the case from the perspective of the government, where the procedural differences between the criminal and administrative fines matter.

The chosen level of emissions by firms will have an impact on social welfare. Social welfare is defined as social benefits minus social costs. Since the model developed in this chapter looks only at the social costs, social welfare is maximized when social costs are minimized, *ceteris paribus* social benefits. Social costs are defined as abatement costs plus enforcement costs and the costs associated with emissions (harm). This chapter compares the impact of two different regulatory regimes on the level of social welfare, namely on the level of social costs. One regime is the world with criminal fines only and the other is the world where administrative fines are imposed for minor violations. Then conditions are determined under which introducing administrative fines could be welfare enhancing (where social costs would be reduced). The two models do not take into account past or future behavior of firms, thus they can be solved as a static welfare maximization problem. The intuition of the model is that because administrative fines are easier to impose, they might increase the probability of sanctioning, which in turn increases the level of the expected sanction, hence, more companies will comply. This in turn will have a negative effect on the level of abatement costs. However, given there are structural differences between criminal and administrative fines, administrative fines can still be welfare enhancing because they might create additional savings in enforcement costs.

6.2.2 Assumptions

There are several assumptions made in this model. First, it is assumed a stigma does not play a role in minor violations. This has been explained and substantiated in the introduction to this chapter. Second, fines are assumed to be costless transfers between the violator and the government, hence do not figure in the social cost function. This is based on the logic that the costs of collecting and receiving fines, particularly for minor violations, are negligible and part of the entire administrative process of enforcement. Third, liability is based on harm, i.e. the size of fines depends on the size of the violation, $(e_i - \bar{e})$. This is based on the principle of proportionality of sanctions to the harm done. The size of fine increases with the size of violation.

Next, the probability of detection and sanctioning is defined as the probability of detection multiplied by the probability of sanctioning. The probability of detection is the probability that a firm will be found committing a violation (it depends on monitoring and inspections), and the probability of sanctioning is the probability that it will actually be sanctioned (depends on the sentencing process). It is assumed that the probability of detection is the same for criminal and administrative-criminal fine models. This is because what is analyzed here is the sanctioning process available to the environment agency. In this model, it is the environment agency that monitors and inspects environmental violations, and hence detects them. Once a violation is detected and a sanctioning process is started, this is when the probabilities of sanctioning will differ depending on whether administrative law process is used or criminal law process. The probability can be manipulated by the enforcer because the resources available for enforcement are limited. In this chapter, the probabilities of detection and sanctioning are assumed to be exogenous. An extension to this model would involve determining the probabilities endogenously where the regulator would maximize enforcement subject to its budget constraint.

The probability of detection could also be manipulated by the offender as he might engage in avoidance activities and try to conceal his activities, which decreases the probability at a certain avoidance cost to the offender (Polinsky and Shavell 1992: 133-148; Linder and McBride 1984: 327). The higher the expected sanction, the more likely is the offender to engage in these avoidance activities (Malik 1990: 341-353). In addition, criminal cases evoke much stronger resistance from the regulated community than administrative ones (OECD 2009b). This might also be the reason why $p_c < p_A$, *ceteris paribus*. In this chapter it is assumed that for minor violations these avoidance activities are negligible, as the costs of concealment might outweigh its benefits. It might not be worth to the firm to try and risk to change operations or to employ idle control technology on a temporary basis or to falsify reports (examples in Linder and McBride 1984:339).

In addition, I rely upon the following assumptions:

(i) $F_c = F_A$

(ii) $p_c < p_A = p_c^c$

(iii) quadratic abatement costs $\theta_i[e_0 - e_i]^2$

(iv) quadratic enforcement costs: $c_c p_c^2$; $c_c p_c^{c\,2}$; $c_A p_A^2$

(v) wealth of a firm $W_i > F_c = F_A$

(vi) harm = e_i, and is observable by the agency once detected

Assumption (i) states that the size of the criminal and administrative fines is equal per unit of violation. It means that for a certain level of harm, a certain (proportional) level of fine is imposed, regardless of whether it is a criminal or an administrative fine. The enforcer can manipulate the level of fines, but these are assumed to be proportional to the seriousness of the offence, which is a plausible assumption (OECD 2009b; Rousseau 2009: 161-194). The fine here employed is in monetary terms. However, besides the actual penalty imposed, the sanctioning authority might also demand the restitution of harm (or return to compliance), or that a part of the enforcement costs, such as the cost of determining the damage, is reimbursed to the government (analyzed in Polinsky and Shavell 1992: 133-148; Linder and McBride 1984:340). Confiscation of private gains from the illegal activity can also be added to the actual sanction in some cases (Bowles, Faure, and Garoupa 2005: 275-295; Bowles, Faure, and Garoupa 2000: 537-549).[121] All this will increase the expected costs of committing a violation to the firm.

Assumption (ii) states that the probability of detection and sanctioning of a criminal fine for minor violations is lower than that of an administrative fine. This assumption is plausible for several reasons: first, there is a rather high dismissal rate of crimes, and only a small fraction

[121] For example, according to the sentencing guidelines, the variable monetary penalty in the UK should include the financial benefit from non-compliance and an additional deterrent component to account for the low probability of detection, see DEFRA, Civil Sanctions for Environmental Offences: Guidance to regulators on administrative sanctions for environmental offences, January 2010, <http://www.defra.gov.uk/environment/index.htm>, last accessed September 9, 2010. Economic benefit from the violation is fundamental to the calculation of administrative penalties also in the US, see e.g. OECD (2009b), and in the Flemish Region, see Art. 16.4.26 of the Flemish Environmental Enforcement Decree.

gets prosecuted. This might be due to the fact that the prosecutor has a budget and time constraint, and as the criminal proceedings have a very high standard of proof and have to follow other strict procedural standards as well as court litigation, the prosecutor will select cases based on their seriousness and potential success of reaching a conviction. If the evidence is weak, it is likely that the case does not merit going to court. Other reasons for dismissals include dismissals for technical and policy reasons, as well as prosecution not being in the public interest. In case of administrative fines, violations do not have to be forwarded to the public prosecutor, and do not have to be litigated but are directly dealt by environmental agencies. Administrative proceedings are much simpler, where the firm submits to the environmental agency written representations and objections upon receiving a notice of intent. The length of the administrative proceedings tends to be shorter than those of criminal proceedings. The number of appeals and judicial reviews might also differ as the companies might resist more the imposition of a criminal rather than an administrative fine. Also the literature concludes that the probability of sanctioning is lower for criminal fines than for administrative fines (Garoupa and Gomez-Pomar 2004:417). The probability of detection remains approximately the same as it is still the environmental agency that monitors, investigates and initiates an enforcement action irrespective of whether society follows a criminal or an administrative sanctioning track. This together with (i) entails that the marginal expected criminal fine for minor violations is lower than the marginal expected administrative fine. On the other hand, serious violations, which merit prosecution, are assumed to have a higher probability, p_c^c, which equals to p_A. Basically, administrative fines are assumed to increase the marginal expected fine level to a more optimal level, which criminal fines are not able to do because of the apparent high dismissal rate.

Abatement costs are assumed to be quadratic (iii), and given by $a(e_i) = \theta_i[e_0 - e_i]^2$. These are the variable costs incurred by the companies, and hence, the focus is on continuous compliance. This quadratic function means that it becomes more expensive to abate more. When a firm starts reducing emissions from the initial e_0, it might still be cheap since only minor adjustments might be necessary, such as for example installing filters. However, with more and

more emissions reductions the abatement is more and more expensive for the firm since it might require major adjustments such as changing the means of production, for example switching from coal to renewable energy. Thus, the marginal abatement cost increases with more abated units, i.e. the higher $(e_0 - e_i)$. Marginal abatement costs as a function of e_i are decreasing (negative), as the more e_i is emitted, the lower the marginal abatement costs. Negative costs mean benefit; hence this function can also be seen as a profit from savings on abatement costs. If a firm abates less, the abatement costs will be lower, however, the emissions will be higher, which in turn means the firm will face a higher expected sanction.

Abatement technology has high fixed costs because of the capital intensity of abatement measures, and is designed for a certain degree of abatement (Conrad and Schroeder 1994). If the degree of abatement is increased, abatement costs increase drastically (Conrad and Schroeder 1994). This can be very expensive, but sometimes it becomes a necessity if the company is required by law to employ a certain abatement technology (technology standard), or if quotas are set on the level of pollution and the abatement costs using the old technology are extremely high.[122] Reducing pollution by investing in pollution control equipment can be done only up to a certain level, then the only means of reduction is reduction in output, which makes the marginal abatement cost curve kinked (McKitrick 1999: 306-314). There are difficulties in modeling the marginal abatement functions even in a static setting because different sources of pollution might have different marginal costs of abatement, and many assumptions have to be made about the impact and understanding of the policy instrument by the regulated company (chapter 21 in Bergh 1999: 1300). In this model, I am assuming a single source of pollution, which individual firms abate to a different degree based on their abatement technology in place at the time of making the decision to comply or violate. I assume that emission reductions can all be made by investing in abatement technology, without the willingness or need to reduce the output.

[122] There is some empirical evidence stating that the reported abatement expenditures by firms are systematically overstated, because the true economic cost of abatement to firms is the change in profits, rather than the abatement cost, see Pizer, Shih and Morgenstern (1997).

Enforcement costs are also assumed to be quadratic (iv), and defined as $C(p_c) = c_c p_c^2$, (or $C(p_c) = c_c p_c^{c2}$ for serious violations) and $C(p_A) = c_A p_A^2$ where c_c is the marginal criminal enforcement costs incurred to increase the probability of detection and sanctioning by one unit, and $p_c = p_D \times p_{SC}$, and c_A are the marginal administrative enforcement costs, and $p_A = p_D \times p_{SA}$. Here again, the enforcement costs are increasing with the increase in the probability of detection and sanctioning. It becomes more costly to enforce if higher probability is needed. This is due to the fact that to increase the probability of detection and sanctioning at the very beginning, one might need to perform only few more inspections or increase the number of enforcers by few people. However, to increase the probability by large, it might require disproportionately more investigators, or involvement of experts, and sophisticated techniques to collect and prove evidence. The enforcement costs as such are fixed and variable (Polinsky and Shavell 1992: 133-148). As mentioned in the previous chapter, the probability of detection could relate to the fixed enforcement costs as it does not depend on the number of individuals who commit violations. The probability of sanctioning does depend on the number of violators, and hence could be seen as variable enforcement costs. According to Polinsky and Shavell, these variable enforcement costs increase with the fine because violators are more likely to engage in concealment activities (1992:141). The enforcement costs of many minor violations might be too large in relation to the benefits of enforcing these minor harms. If administrative enforcement costs are sufficiently lower than criminal enforcement costs, then enforcement through administrative law should be preferred.

Assumption (v) states that the wealth of a firm exceeds both, criminal and administrative fines. In other words, there is no insolvency problem and all firms are able to pay the fines. This might not be such an unreasonable assumption as fines for environmental violations (whether criminal or administrative) tend to be low (see Chapter 5), which generally constitutes a problem with deterrence (Rousseau 2007: 1-28).

Assumption (vi) states that the level of emissions equals harm, and is observable by the agency once detected. In this chapter, measurement errors in the level of emissions are assumed to be

negligible. Emissions are merely a proxy for harm in this chapter, and there exist harms, which could be easily observable by the agency, particularly within the range of minor violations, such as a duty to report, or to install a particular filter (even these violations have been criminalized, see Chapter 5).[123]

Furthermore, it should be noted that the model ignores the institutional costs of having two enforcement agencies under the administrative-criminal scenario. These costs include for example coordination across agencies and the reallocation of competences. These costs might be negligible if they are incurred irrespective of whether the environmental agencies have the power to impose administrative fines or not. Put differently, the fact that the administrative agency acquires greater competences might not in itself be costly, while the actual costs related to the imposition of the administrative fine are accounted for in the model as part of the administrative enforcement costs. In contrast, if these institutional costs are substantial, this would affect the desirability of having two enforcement agencies instead of one.

6.3 Basic Model with Criminal Fines

In the basic model with only criminal fines as the enforcement mechanism, the firm chooses its emissions level such that it minimizes its total costs (TC^c), which equals the sum of the abatement costs and the expected costs from a criminal fine. The marginal expected criminal fine is divided into three regions:

If $e_i \leq \bar{e}$ then the marginal expected fine = 0 (no penalty)
If $\bar{e} < e_i \leq \bar{e} + \beta$ then the marginal expected fine = $p_c F_c$
If $e_i > \bar{e} + \beta$ then the marginal expected fine = $p_c^c F_c$
The marginal expected criminal fine is kinked at two points, $\bar{e}$ and $\bar{e} + \beta$. This represents the fact that violations are enforced only above a certain threshold, and that for minor violations ($\bar{e} < e_i$

[123] To note, in several legal systems (e.g. Belgium), emissions are always considered as crime. Hence, in this chapter emissions are just a proxy for harm.

≤ ē + β), a lower marginal expected criminal fine is imposed due to underenforcement from discretionary prosecution ($p_c F_c < p_c^c F_c$).

The marginal abatement cost curve $a'(e_i) = -2\theta_i[e_0 - e_i]$ is linearly decreasing, where the slope depends on the cost parameter θ_i. The company's decision to violate or not is illustrated in Fig. 1.

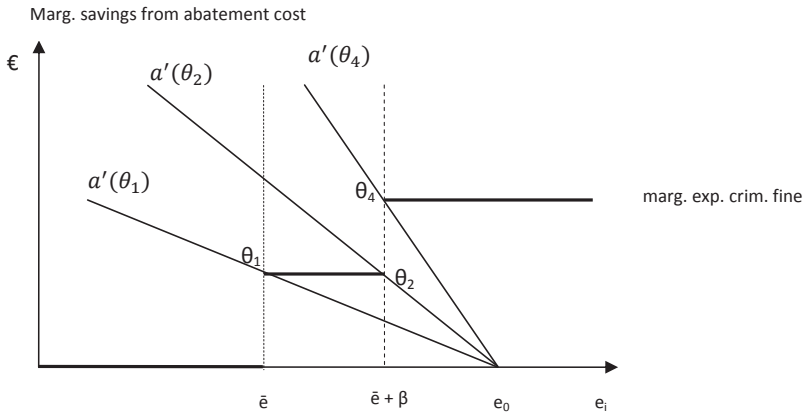

Fig. 1. Decision to violate under the criminal fine model

Firms can be divided into 4 groups according to their abatement cost parameter θ_i, as shown in the graph.[124] θ_1, θ_2 and θ_4 are intersection points of marginal abatement cost lines and marginal expected fine lines. Firms having low abatement costs, i.e. abatement cost parameter lower than θ_1 are compliant firms emitting exactly ē as firms are not going to emit less than necessary, those with abatement cost parameters in the interval between θ_1 and θ_2 are committing minor violations, those with higher abatement cost parameters between θ_2 and θ_4 are emitting exactly ē + β as they are not going to emit less than necessary, and those with high abatement cost parameters above θ_4 are committing serious violations. Firms falling under each region will minimize their costs correspondingly. Firm's objective function is defined as,

[124] This is a static model, it ignores the possibility that firms will change their abatement cost parameter θ_i.

$$\text{Firm}_i \qquad \min_{e_i} TC = \mathrm{TC}^{\mathrm{C}}(\mathrm{e_i}) = \begin{cases} \theta_i[e_0 - e_i]^2, \ \mathrm{e_i} \le \bar{\mathrm{e}} \\ \theta_i[e_0 - e_i]^2 + p_c F_c[e_i - \bar{\mathrm{e}}], \bar{\mathrm{e}} < e_i \le \bar{\mathrm{e}} + \beta \\ \theta_i[e_0 - e_i]^2 + p_c^c F_c[e_i - \bar{\mathrm{e}}], \ \mathrm{e_i} > \bar{\mathrm{e}} + \beta \end{cases} \tag{1}$$

Thus the optimal strategy for a firm is to comply with the emission standard and emit $\bar{e}$ (firms are not going to emit less than necessary) if the marginal expected criminal fine is larger than the marginal abatement costs ($p_cF_c > 2\theta_i(e_0 - e_i)$). However, if the marginal expected criminal fine is smaller than the marginal abatement costs, the firm will violate the standard $\bar{e}$ and emit $e_i > \bar{e}$, depending on its abatement cost parameter θ_i. This implies that only firms with sufficiently low θ_i will comply, otherwise it is more beneficial for firms to violate and pay the fine, which is proportional to their emissions level exceeding the allowed $\bar{e}$. If their emissions exceed $\bar{e} + \beta$, the firm faces higher marginal expected fine, $p_c^c F_c$ instead of only p_cF_c.

To minimize this objective function, local minima will be looked at separately on $[0, \bar{e}]$, $[\bar{e}, \bar{e} + \beta]$ and $[\bar{e} + \beta, e_0]$ (see Appendix).

On region $[0, \bar{e}]$, the objective function is $\min \mathrm{TC}^{\mathrm{C}}(\mathrm{e_i}) = \theta_i[e_0 - e_i]^2 s.t. \ \mathrm{e_i} \le \bar{\mathrm{e}}$. Hence, $e_i^* = \bar{e}$ is the only candidate point.

On region $[\bar{e}, \bar{e} + \beta]$, there are potential candidate points in the interior, satisfying $p_cF_c - 2\theta_i[e_0 - e_i] = 0$ and the two points at the extremities of the interval, $\bar{e}$ and $\bar{e} + \beta$. The interior solution is $e_i^* = e_0 - \frac{p_cF_c}{2\theta_i}$. (2)

On region $[\bar{e} + \beta, e_0]$, I have potential candidate points in the interior, satisfying $p_c^cF_c - 2\theta_i[e_0 - e_i] = 0$ and the two points at the extremities of the interval, $\bar{e} + \beta$ and e_0. The interior solution is $e_i^* = e_0 - \frac{p_c^cF_c}{2\theta_i}$. (3)

From the interior solutions, it can be implied that the level of emissions is increasing with the level of abatement cost parameter θ_i, and decreasing with the level of marginal expected

criminal fines. One corner solution is that all companies would comply and emit exactly ē. As a global maximum, this solution seems to be unlikely as there might still be an accidental violation for which the companies would face a sanction. In addition, abatement costs are reported to be larger than the monetary sanction (Rousseau 2007: 1-28), hence at least some companies will violate. Another corner solution is that companies will make no effort to abate and emit e_0. This could be the case if the expected sanction was independent of the size of the violation and small, which is not the case. The fact that the enforcement agency sanctions violations at least in some cases because it can observe the level of harm with a positive probability, suggests that at least some companies will abate and hence, reduce their emissions in order to avoid being heavily penalized. The point of this chapter is to find the threshold points for θ_i, which would divide firms into groups according to their abatement costs, and hence find their optimal emission levels within each group for the purpose of comparing the impact on social welfare. These threshold points also divide the level of the marginal expected criminal fine.

Thus, θ_1, θ_2, and θ_4 have to be found. θ_1 is the abatement cost parameter where emissions equal ē. This point distinguishes compliant firms from non-compliant firms. Firms having lower marginal abatement costs than $a'(\theta_1)$ will be compliant, while firms with higher marginal abatement costs will be non-compliant, facing a criminal fine. From (2),

$$\theta_1 = \frac{p_c F_c}{2(e_0 - \bar{e})}$$

θ_2 is the abatement cost parameter where emissions equal ē + β, and where $a'(\theta_2)$ intersects with $p_c F_c$. Firms with $a(\theta_2)$ will emit exactly ē + β. This point will be important for the comparison of the two regimes. It is defined as

$$\theta_2 = \frac{p_c F_c}{2(e_0 - (\bar{e} + \beta))}$$

θ_4 is the abatement cost parameter where emissions equal ē + β, and where $a'(\theta_4)$ intersects with $p_c{}^c F_c$. This is the point which distinguishes minor violators from serious violators. Firms

having abatement cost parameters between θ_1 and θ_4 will be minor violators penalized by lower marginal expected criminal fine, while firms with abatement costs above θ_4 will be serious violators penalized by higher marginal expected criminal fine. It is defined as

$$\theta_4 = \frac{p_c^c F_c}{2(e_0 - (\bar{e} + \beta))}$$

From this it can be implied:

Proposition 1: *When firm i faces only criminal fines, its emissions e_i are determined as follows*

If $\theta_i \leq \theta_1$ then $e_i^* = \bar{e}$

If $\theta_1 < \theta_i < \theta_2$ then $e_i^* = e_0 - \frac{p_c F_c}{2\theta_i}$

If $\theta_2 \leq \theta_i \leq \theta_4$ then $e_i^* = \bar{e} + \beta$

If $\theta_i > \theta_4$ then $e_i^* = \min\left(e_0; e_0 - \frac{p_c^c F_c}{2\theta_i}\right)$

From the perspective of the government, under the criminal fine model, when a violation is observed the government has to enforce this violation and incur criminal enforcement costs defined as $C(p_c) = c_c p_c^2$ for minor violations and $C(p_c) = c_c p_c^{c2}$ for serious violations. These costs will be reflected in the social cost function later on.

6.4 Model with Administrative and Criminal Fines

In the administrative-criminal fine model, administrative fines are introduced for minor violations, i.e. for firms that emit up to the level $\bar{e} + \beta$ ($\beta > 0$). Firms emitting below $\bar{e}$ are compliant, firms emitting up to $\bar{e} + \beta$ will no longer face a criminal fine but a higher expected administrative fine (higher because the probability increases). Thus an administrative fine substitutes a criminal fine for these violations. Firms that emit above $\bar{e} + \beta$ will still face criminal fines as under the criminal fine model. Hence the marginal expected fine under administrative-criminal fine model is also divided into three regions:

If $e_i \leq \bar{e}$ then the marginal expected fine = 0 (no penalty as under the criminal fine model)

If $\bar{e} < e_i \leq \bar{e} + \beta$ then the marginal expected fine = $p_A F_A$ (administrative fine imposed)

If $e_i > \bar{e} + \beta$ then the marginal expected fine = $p_c^c F_c$ (criminal fine imposed)

Since $p_A = p_c^c$, the level of the marginal expected fine is the same for minor and serious violations. The enforcement of minor violations under the criminal fine model might increase because of the administrative procedural differences reflected in the increased probability of detection and sanctioning. The administrative fine is capped by the value of $F_A[e_i - (\bar{e} + \beta)]$. Fines above this value are assumed to be by definition criminal fines. This represents the fact that only for minor violations an administrative fine is imposed, while serious violations are considered to be crimes rather than only administrative infringements. The marginal abatement cost curve is the same, given by $a'(e_i) = -2\theta_i(e_0 - e_i)$. The company's decision to violate or not is illustrated in Fig. 2.

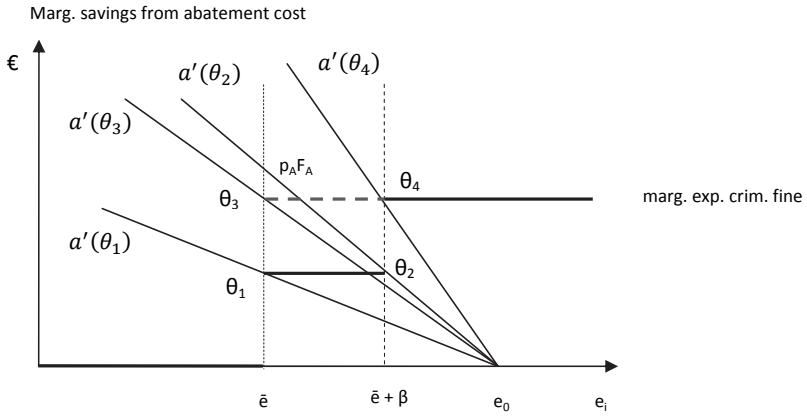

Fig. 2. Decision to violate under the administrative-criminal fine model

Under this regime, firms can be divided into 3 groups according to their abatement cost parameter θ_i, as shown in the graph. Those having low marginal abatement costs, lower than $a'(\theta_3)$ are compliant firms emitting exactly $\bar{e}$, those with middle-abatement cost parameters in the interval between θ_3 and θ_4 are committing minor violations, and those with high abatement

cost parameters above θ_4 are committing serious violations. Firms falling under each region will again minimize their total costs (TC^A) correspondingly. Firm's objective function is defined as,

$$\text{Firm}_i \qquad \min_{e_i} TC = \text{TC}^{\text{A}}(\text{e}_\text{i}) = \begin{cases} \theta_i(e_0 - e_i)^2, & \text{e}_\text{i} \le \bar{\text{e}} \\ \theta_i(e_0 - e_i)^2 - p_A F_A(e_i - \bar{\text{e}}), & \bar{\text{e}} < e_i \le \bar{\text{e}} + \beta \\ \theta_i(e_0 - e_i)^2 - p_c^c F_c(e_i - \bar{\text{e}}), & \text{e}_\text{i} > \bar{\text{e}} + \beta \end{cases} \tag{4}$$

Similar analysis applies as in the criminal-fine model (mathematical proofs are hence omitted). The only difference is that for $\bar{\text{e}} < e_i \le \bar{\text{e}} + \beta$ an administrative fine is imposed instead of a criminal fine. Because of the differing probabilities, the marginal expected criminal and administrative fine differs for this interval of emissions. This will reflect in the threshold values of θ_i delineating compliant from non-compliant firms (as seen in figure 2). From (4), on region [ē, ē + β], there are potential candidate points in the interior, satisfying $p_A F_A - 2\theta_i(e_0 - e_i) = 0$ and the two points at the extremities of the interval, ē and ē + β. The potential interior solution is $e_i^* = e_0 - \frac{p_A F_A}{2\theta_i}$. (5)

And again the values of θ at ē and ē + β have to be investigated.

θ_3 is the intersection point between a'(θ_i) and the marginal administrative fine $p_A F_A$. Companies having exactly these marginal abatement costs will emit ē when administrative fines are introduced. This point divides compliant firms from non-compliant firms under the administrative-criminal fine model. As can be seen from the figure, the threshold θ_i point dividing compliant firms from non-compliant differs for criminal-fine model (θ_1) and for administrative-criminal fine model (θ_3). From (5),

$$\theta_3 = \frac{p_A F_A}{2(e_0 - \bar{\text{e}})}$$

From this it can be implied:

Proposition 2: *When firm i faces an administrative or a criminal fine, its emissions e_i are determined as follows*

If $\theta_i \leq \theta_3$ then $e_i^* = \bar{e}$

If $\theta_3 < \theta_i < \theta_4$ then $e_i^* = e_0 - \frac{p_A F_A}{2\theta_i}$

If $\theta_i = \theta_4$ then $e_i^* = \bar{e} + \beta$

If $\theta_i > \theta_4$ then $e_i^* = min(e_0; e_0 - \frac{p_c^c F_c}{2\theta_i})$

As $p_A > p_c$, $\theta_3 > \theta_1$, which means that there will be more compliant firms under the administrative-criminal fine model than when only criminal fines are imposed. This will lower the level of total emissions. However, this also means that firms will be abating more, which increases the abatement costs and lowers the benefits for firms. Thus the basic trade-off between the two regulatory regimes is lower abatement costs under the criminal fine regime, and lower emissions under the administrative-criminal fine regime. In addition, there might be savings from administrative enforcement costs if administrative proceedings to impose a sanction are indeed sufficiently easier and cheaper than a criminal procedure. When the government introduces administrative fines for minor violations instead of criminal fines, it incurs administrative enforcement costs defined as $C(p_A) = c_A p_A^2$ for minor violations and $C(p_c) = c_c p_c^2$ for serious violations. These costs will be reflected in the social welfare function later on.

In the next sections I discuss and compare the impacts of the two regulatory regimes on social welfare and try to determine factors when administrative fines are socially desirable.

6.5 Impacts of the Criminal Fine and Administrative-criminal Fine Models on Social Welfare and their Comparison

As mentioned already, social welfare is defined as social benefits minus social costs. Social welfare increases if social costs decrease. This chapter examines the impact on social welfare by looking at the changes in social costs caused by different regulatory regimes. Social costs are

the sum of abatement costs, the total enforcement costs incurred by the enforcement agency and the total emissions level. Expected fines are excluded from consideration as these are mere transfers. The social cost function can be divided into 5 regions based on θ_i. Under each region, the two regulatory regimes and their impact on social welfare will be compared. The regions are ranked according to θ_i. It is not evident whether θ_2 is greater or lower than θ_3 because the values depend on the relative distance between p_A and p_c (how much more probable is administrative fine), and $\bar{e}$ and $\bar{e} + \beta$ (how many more minor violations there are). Therefore, both cases will be discussed. Social costs for regions with very low abatement cost firms, lower than $a(\theta_1)$, is identical under the criminal fine regime and under the administrative-criminal fine regime. Under both regimes, these firms are compliant. Firms with very high abatement costs, above $a(\theta_4)$ are serious violators under both regimes, and hence always face criminal fines. These two regions are not interesting for comparison.

6.5.1 Case when $\theta_1 < \theta_2 < \theta_3 < \theta_4$

6.5.1.1 Region $(\theta_1, \theta_2]$

On this region, firms are non-compliant under the criminal-fine regime, but compliant under the administrative-criminal fine regime. Social costs are defined as,

$$SC_c = \theta_i(e_0 - e_i)^2 + c_c p_c^2 + e_i$$

Where $e_i = \min\left[e_0 - \frac{p_c F_c}{2\theta_i}; (\bar{e} + \beta)\right]$

$$SC_A = \theta_i(e_0 - \bar{e})^2 + c_A p_D^2 + \bar{e}$$

This means that under the criminal fine regime, the level of emissions is higher and the government incurs higher enforcement costs (detection and sanctioning enforcement costs), which increase the total social costs and hence, are negative impacts on social welfare. However, the abatement costs are lower, which is a positive impact. Under the administrative-

criminal fine model, all firms are complying, hence the emissions level is the allowed ē, there are only detection enforcement costs for the government (inspections have been performed, even if no violation was found), but the abatement costs are higher. When comparing social costs, what has to be looked at is the relative difference in abatement costs as opposed to the relative difference in emissions and enforcement costs. If the decreased emissions and enforcement costs under the administrative-criminal fine model justify the negative impact of increased abatement costs, administrative fines are welfare enhancing under this region.

6.5.1.2 Region (θ_2, θ_3]

On this region, firms are non-compliant under the criminal-fine regime and emit exactly ē + β, but still compliant under the administrative-criminal fine regime. Social costs are defined as,

$$SC_c = \theta_i(e_0 - (\bar{e} + \beta))^2 + c_c p_c^2 + (\bar{e} + \beta)$$

$$SC_A = \theta_i(e_0 - \bar{e})^2 + c_A p_D^2 + \bar{e}$$

Here again, under the criminal fine regime, the level of emissions is (even) higher and the government incurs higher enforcement costs, when comparing with the first region. Under administrative-criminal fine model, all firms are complying, hence the emissions level is the allowed ē, there are only inspection enforcement costs for the government, but the abatement costs are higher than when only criminal fines are imposed. When comparing social costs, once again the relative difference in abatement costs as opposed to the relative difference in emissions and enforcement costs are relevant. As in the previous region, if the decreased emissions and enforcement costs under the administrative-criminal fine model justify the negative impact of increased abatement costs, administrative fines are welfare enhancing under this region.

6.5.1.3 Region (θ_3, θ_4]

On this region, firms are non-compliant under both regimes. However, their level of non-compliance differs. Social costs are defined as,

$$SC_c = \theta_i(e_0 - (\bar{e} + \beta))^2 + c_c p_c^2 + (\bar{e} + \beta)$$

$$SC_A = \theta_i(e_0 - e_i)^2 + c_A p_A^2 + e_i$$

Where $e_i = \min\left[e_0 - \frac{p_A F_A}{2\theta_i}; (\bar{e} + \beta)\right]$

Under the criminal fine regime, the level of emissions and criminal enforcement costs is the same as in the previous region. Under the administrative-criminal fine model, firms are emitting $\bar{e} < e_i \leq \bar{e} + \beta$, and the government incurs full administrative enforcement costs (detection and sanctioning costs). The abatement costs are still lower under the criminal fine model. When comparing social costs, administrative enforcement costs now become a relevant factor as these decrease the cost advantage of administrative fines. As $p_A > p_c$, the marginal administrative enforcement costs must be sufficiently low compared to the marginal criminal enforcement costs in order for the administrative enforcement costs to be lower than criminal enforcement costs ($c_A < \frac{c_c p_c^2}{p_A^2}$). Administrative fines are welfare enhancing only if the relative savings in administrative enforcement costs and the relative decrease in the emissions level compared to the criminal-fine model outweigh the relative increase in abatement costs (decrease in profits).

In overall, criminal fine regime has always lower abatement costs, but higher emissions. Whether administrative fines are welfare enhancing depends on the relative marginal enforcement costs, on the relative values of p_c and p_A, but primarily on the distribution of θ_i.

6.5.2 Case when $\theta_1 < \theta_3 < \theta_2 < \theta_4$

6.5.2.1 Region (θ_1, θ_3]

On this region, firms are non-compliant under the criminal-fine regime, but compliant under the administrative-criminal fine regime. Social costs are defined as,

$$SC_c = \theta_i(e_0 - e_i)^2 + c_c p_c^2 + e_i$$

Where $e_i = e_0 - \frac{p_c F_c}{2\theta_i}$

$$SC_A = \theta_i(e_0 - \bar{e})^2 + c_A p_D^2 + \bar{e}$$

Here again, if the decreased emissions and enforcement costs under the administrative-criminal fine model justify the increased abatement costs, administrative fines are welfare enhancing under this region.

6.5.2.2 Region (θ_3, θ_2]

On this region, firms are non-compliant under both regimes. However, their level of non-compliance differs. Social costs are defined as,

$$SC_c = \theta_i(e_0 - e_i)^2 + c_c p_c^2 + e_i$$

Where $e_i = \min\left[e_0 - \frac{p_c F_c}{2\theta_i}; (\bar{e} + \beta)\right]$

$$SC_A = \theta_i(e_0 - e_i)^2 + c_A p_A^2 + e_i$$

Where $e_i = e_0 - \frac{p_A F_A}{2\theta_i}$

Under the criminal fine regime, the emissions level will be close or equal to $\bar{e}$ +β, while under the administrative-criminal fine regime, the emissions level is close to $\bar{e}$. Thus the abatement costs are lower under the criminal fine regime. Whether administrative fines are welfare

enhancing will depend on whether the relative increase in abatement costs under the administrative-criminal fine model is outweighed by the relative decrease in emissions and possibly enforcement costs.

6.5.2.3 Region (θ_2, θ_4]

On this region, social costs defined as,

$$SC_c = \theta_i(e_0 - (\bar{e} + \beta))^2 + c_c p_c^2 + (\bar{e} + \beta)$$

$$SC_A = \theta_i(e_0 - e_i)^2 + c_A p_A^2 + e_i$$

Where $e_i = \min\left[e_0 - \frac{p_A F_A}{2\theta_i}; (\bar{e} + \beta)\right]$

Under the criminal fine regime, the emissions level is ē +β, while under the administrative-criminal fine regime they are ē +β or a bit lower. Hence, the abatement costs are lower under the criminal fine regime. As on the previous region, administrative fines are welfare enhancing if the relative decrease in emissions and possibly enforcement costs compensates for the relative increase in abatement costs.

6.5.3 General Remarks

In overall, for both cases, there are more compliant firms under the administrative-criminal fine model, and the emissions level is always lower under this regime. The negative side is that the abatement costs are hence always higher compared to using only criminal fines. Whether administrative fines are welfare enhancing will depend primarily on the distribution of firms according to θ_i. If the majority of firms have very low or very high abatement costs, introducing administrative fines might make little difference as these would not be applied often enough. Namely the region θ_1 to θ_4 should be sufficiently large for having a variation in the two regulatory regimes. Enforcement costs are also a very relevant factor, and the analysis seems to

indicate that only if the marginal administrative enforcement costs are sufficiently low compared to the marginal criminal enforcement costs, administrative fines will be welfare enhancing. Furthermore, it seems to be the case that also the difference in probabilities of detection and sanctioning is a relevant factor. The smaller the difference, the less negative will be the effect of administrative fines on abatement costs, and the marginal enforcement costs will become more relevant for the assessment of enforcement costs.

As mentioned in the previous chapter, the criminal standard of proof is often applied to administrative fines too; hence the major cost savings seem to be with regard to the time, length and personnel involved in the initiation of the process and in the imposition of an administrative fine. Involvement of judges from the very beginning, as well as the length and structure of criminal proceedings seems to increase the criminal *vis-à-vis* administrative enforcement costs. In addition, firms might have less of an incentive to resist or appeal if they face an administrative fine rather than a criminal fine.[125] As mentioned already, firms might take administrative fines as part of their business costs. Moreover, companies might engage in avoidance activities when facing a criminal fine. All this might increase criminal enforcement costs. Unfortunately no precise measure of enforcement costs is to my knowledge available. How the enforcement costs impact social costs and hence social welfare depends on θ_i and on the emissions levels.

Thus when designing enforcement policies, the regulators might want to look at the actual enforcement costs of imposing an administrative *vis-à-vis* criminal fine, whether there are enough medium-abatement cost firms committing these minor violations for which an administrative fine would be imposed, and try to keep the underenforcement by criminal law to the minimum (maybe by decriminalization). If underenforcement is an issue with respect to minor environmental violations, introducing administrative fines with a higher probability of

[125] This might be the case because of the potential stigma a criminal procedure and a criminal fine carries with it. Administrative fines are sometimes regarded by companies as a cost of doing business.

sanctioning provides incentives *ex ante* to decrease the overall level of emissions, which is regarded as positive from the societal point of view.

6.6 Conclusion

To conclude, this chapter added to the debate on whether a single instrument, criminal law, or multiple instruments, criminal and administrative law should be used to enforce environmental regulations. This is particularly relevant when I consider the problem of low prosecution rates. In this case, administrative fines might prove to be a good alternative sanctioning mechanism to criminal sanctions for minor violations that do not merit going through the prosecution process. This chapter showed factors which are relevant in assessing the optimal sanctioning regime for environmental violations. A model has been developed comparing the use of criminal fines alone with a model of complementary use of criminal and administrative fines. It was shown that situations might exist when administrative fines are a welfare enhancing instrument to use for minor violations instead of criminal fines. It was shown that administrative fines are welfare enhancing only if the relative decrease in harm and possibly enforcement costs outweighs the relative increases in abatement costs. The analysis seems to indicate that this is the case when the marginal enforcement costs of administrative fines are sufficiently low (compared to the marginal criminal enforcement costs), if there are enough middle-abatement-cost firms and if the difference between the probabilities of detection and sanctioning is small enough. Primarily this depends on the distribution of abatement costs among firms. Under these circumstances, the social costs of increased abatement costs due to higher expected administrative fines are outweighed by the social benefits from savings on enforcement costs and decreased emissions. The main variables of interest for regulators are hence not only the relative enforcement costs, and the probabilities of detection and sanctioning, but also the abatement costs and their distribution among firms. It is acknowledged that this type of information might be difficult to obtain and evaluate.

This analysis rests upon the assumption that firms make their decisions only based upon the expected sanction. These type of violators could be called the typical rational calculators. They weighted the costs and benefits of a violation and acted accordingly. However, it should not be forgotten that there exist also other reasons why companies comply. Several companies would comply with environmental regulations even if their abatement costs were high. The explanation of this so-called "Harrington paradox" shows that market forces via reputation are in place, the companies might overestimate the penalty or fear of more monitoring in the future (which is a nuisance for them), or there might be financial incentives such as tax breaks (OECD 2009b; Harrington 1988: 29-53; Innes and Sam 2008: 271-296). I would still call these rational offenders, as they respond to incentives. However, there might be firms that do not comply because they were not informed sufficiently well enough, the so-called accidental violators. Even though it is questionable whether these types exist, as ignorance is no defense, it might happen. For these types of violators the incentive mechanism discussed in this chapter would not work, and informational remedies might be more appropriate. Moreover, it was assumed that the enforcement agency acted as a centralized agent. It should be noted that in certain jurisdictions, the enforcement agency is fragmented (Belgium) or decentralized to a local level particularly with regard to monitoring and investigation, and the incentives of these agents might differ from those of the central agency (Linder and McBride 1984: 327). This has been excluded from the analysis in this chapter. Another issue simplified in this chapter is the fact that whether an administrative fine or a criminal fine applies is a simple decision. In fact, imposition of administrative fines requires decriminalization or a legislative act giving powers to the administrative authorities to impose an administrative fine for a crime. This discussion lies outside the scope of this chapter. Nevertheless, the analysis in this chapter gives indications to show how procedural differences might lead to decriminalization for efficiency reasons.

Appendix

A Kuhn-Tucker approach to Section 3:

I have to look for local minima separately on [0, ē], [ē, ē + β] and [ē + β, e_0].

On region [0, ē], the objective function is $\mathrm{TC}^{\mathrm{C}}(\mathrm{e_i}) = \theta_i(e_0 - e_i)^2 \min s.t. \mathrm{e_i} \leq \bar{\mathrm{e}}$. Hence,

$$\mathcal{L} = -\theta_i(e_0 - e_i)^2 + \lambda(\bar{\mathrm{e}} - e_i)$$

KT conditions

$\frac{\partial \mathcal{L}}{\partial e_i} = 2\theta_i(e_0 - e_i) - \lambda \leq 0$, $e_i \geq 0$ and simultaneosly $e_i \frac{\partial \mathcal{L}}{\partial e_i} = 0$

$e_i \leq \bar{\mathrm{e}}$, $\lambda \geq 0$, $\lambda(\bar{\mathrm{e}} - e_i) = 0$

So either the constraint binds ($\mathrm{e_i} = \bar{\mathrm{e}}$) or $\lambda = 0$. Clearly, non-binding constraint is not an option since $2\theta_i(e_0 - e_i) < 0$ so $\mathrm{e_i} = \bar{\mathrm{e}}$ is the only candidate point.

On region [ē, ē + β], I have

$$\mathcal{L} = -\theta_i(e_0 - e_i)^2 - p_c F_c(e_i - \bar{\mathrm{e}}) + \lambda_1(\bar{\mathrm{e}} + \beta - e_i) + \lambda_2(-\bar{\mathrm{e}} + e_i)$$

KT conditions will here be:

$\frac{\partial \mathcal{L}}{\partial e_i} = 2\theta_i(e_0 - e_i) - p_c F_c - \lambda_1 + \lambda_2 \leq 0$, $e_i \geq 0$ and simultaneosly $e_i \frac{\partial \mathcal{L}}{\partial e_i} = 0$

$e_i \leq \bar{\mathrm{e}} + \beta$, $\lambda_1 \geq 0$, $\lambda_1(\bar{\mathrm{e}} + \beta - e_i) = 0$

$-e_i \leq -\bar{\mathrm{e}}$, $\lambda_2 \geq 0$, $\lambda_2(-\bar{\mathrm{e}} + e_i) = 0$.

Here, I have potential candidate points in the interior, satisfying $p_c F_c - 2\theta_i(e_0 - e_i) = 0$ and the two points at the extremities of the interval, ē and ē + β.

On region [ē + β, e_0], I have

$$\mathcal{L} = -\theta_i(e_0 - e_i)^2 - p_c^c F_c(e_i - \bar{\mathrm{e}}) + \lambda_1(e_0 - e_i) + \lambda_2(-(\bar{\mathrm{e}} + \beta) + e_i)$$

$\frac{\partial \mathcal{L}}{\partial e_i} = 2\theta_i(e_0 - e_i) - p_c^c F_c - \lambda_1 + \lambda_2 \leq 0$, $e_i \geq 0$ and simultaneosly $e_i \frac{\partial \mathcal{L}}{\partial e_i} = 0$

$e_i \leq e_0$, $\lambda_1 \geq 0$, $\lambda_1(e_0 - e_i) = 0$

$-e_i \leq -(\bar{\mathrm{e}} + \beta)$, $\lambda_2 \geq 0$, $\lambda_2(-(\bar{\mathrm{e}} + \beta) + e_i) = 0$.

Here, I have potential candidate points in the interior, satisfying $p_c^c F_c - 2\theta_i(e_0 - e_i) = 0$ and the two points at the extremities of the interval, $\bar{e} + \beta$ and e_0.

Chapter 7: Conclusions

7.1 Introduction

This research started out with the observation that criminal law seems to be overused (the so-called phenomenon of overcriminalization) as many violations, which at first instance seem minor, are enforced through criminal law. This shows that the principal justification for its use is not clear. Particularly the trend of criminalizing regulatory offences, such as for example environmental violations since the 1970s, has been one of the major motivations for this research. This is because criminal law has been traditionally portrayed in the literature as the most coercive and expensive instrument to use to deal with harmful conducts. Hence, it is puzzling why society uses it also for the allegedly minor harms. Recent scholarship has paid some attention to this issue and tried to discuss the alternatives, such as administrative sanctions and fines. However, there has not been sufficient discussion of the economic implications of using these alternatives, particularly not on the use of administrative fines, which are gaining importance in environmental law. Thus, the main task of this dissertation was to analyze why society uses criminal law at all, if alternative remedies provided by private or administrative law are available, and whether these might prove to be more cost-effective or efficient. More particularly, the research tried to answer why an act is classified as a crime, while another as an administrative infringement, and whether this has an economic justification. The goal was to provide an economic framework.

Several theoretical approaches, such as the criminal legal theory, criminology or the law and economics perspective have approached the issue of criminalization from different angles and with different focus of analysis. Each of them provided a certain explanation of criminalization, however, their aims and goals were rather different, and lacked to explain sufficiently why criminal law enforcement is needed from an economic perspective. The purpose of this thesis was to critically evaluate all these approaches and establish whether from an economic perspective, there is a need for criminal law. More particularly, the economic justification for

the differentiation between criminal and administrative sanctions has been investigated. This investigation was carried out with the help of applying the framework to one particular regulatory sphere: the protection of the environment. Currently, and presumably also in the future, this is a hot and highly discussed topic at the national, European as well as international level, affecting policy makers as well as industry. Its societal as well as scientific relevance is thus clear. Application to this field has provided important insights into the discussion of the scope of criminal and administrative law in enforcing violations.

In this chapter, I seek to answer the research questions presented in the introduction of this thesis, and their implications for scholarly and policy debates. To recap, the main research question has been,

'Why should society use enforcement through criminal law and when should there be a role for administrative law?'

In order to answer the main question, I made use of two sub-questions,

- *What are the economic criteria for criminalization as opposed to relying on private and administrative law remedies?*
- *Is there a scope for administrative sanctions, namely administrative fines, and if yes under which conditions?*

The next sections will discuss the main findings and implications of this thesis, limitations as well as suggestions for further research.

7.2 Major Findings

7.2.1 Criminal Legal Theory, Criminology and Economic Analysis: Comparative Analysis

Criminal legal theory, criminology and the law and economics approach, all have contributed to answering the question of why society needs criminal law. However, their approaches had different aims, which reflected in the diverging focus of analysis. Criminal legal theory discussed in Chapter 2 has set up the legal and philosophical background for criminal law, presenting the four distinguishing elements of a criminal act, such as harm, intent, punishment and the high standard of proof. From this legal perspective, the use of criminal law is based upon the principle of legality, which formally classifies harmful conducts as crimes, or alternatively as only administrative infringements. However, this does not really explain why the classification is as such in the first place. The main goals of criminal law were deterrence, incapacitation, retribution, punishment and prevention. Except of incapacitation, private and administrative law are said to have similar goals as criminal law. The identified legal criteria for criminalization were the principle of individual autonomy, the principle of welfare, the principle of harm and the principle of morality. There has been some discrepancy among the legal scholars which of these principles should be the one determining the borders of criminal law. From the discussion in the literature, it could be implied that the role of criminal law should be limited to where absolutely necessary. According to the criminal legal theory, it should be used only to protect the society/individual from harm or to symbolize some common values and norms (declaratory function). With regard to administrative law, administrative penal law with its administrative fines has developed for reasons such as: (1) enforcement deficit under criminal law, and (2) refusal to adopt corporate criminal liability.

On the other hand, criminology portrayed criminal law as a power struggle among various groups in the society. The so-called victimized-actor model discussed in Chapter 3 pictured the offender as a victim of a social conflict, where the powerful groups in society impose criminal sanctions upon the less powerful groups. This is in deep contrast with the criminal legal theory,

where the offender was viewed as someone with rights, liberties and a free choice of action, where criminal penalties were imposed only when really deserved. Some criminologists see the criminal sanction as unjustly imposed upon a disadvantaged part of the population. Labeling theorists argue that a certain behavior itself is not inherently criminal, it is the society that labels it so. Critical theorists try to bring attention to the 'white-collar' crime, as a way of showing that crimes are not committed only by the poor, but also by those who are wealthy and powerful. One example of this could be the serious environmental violations committed by companies. However, in reality, the majority of crimes in general is still committed by the poorer part of the society. The aim of these theories was to explain and maybe bring attention to the fact that criminal law is a powerful tool, which could be misused. Thus what could be implied from this discussion is that similarly as in the criminal legal theory, criminal law should be used cautiously and fairly (when justified). However, not all criminologists agree with this statement. Whether a certain enforcement instrument is effective, more empirical research has to be done on the number of sanctions imposed and their impact on the behavior of firms, in order to derive evidence-based conclusions.

The economic perspective, particularly law and economics, has focused on deterrence as a goal of criminal law. Dating back to the seminal paper by Becker, it was held that potential offenders respond to the incentives provided by the state, and will violate criminal law if the expected sanction is lower than the expected benefit (1968: 169-217). Based upon this simple model, criminal sanctions could serve a purpose of discouraging people from violating, and inducing compliance. Unlike the criminal legal theory and criminology, law and economics rests upon the assumption that people are rational (do not make systematic mistakes) and weigh the costs and benefits of their actions. In addition, the normative goal of criminal law is efficiency. According to this criterion, criminal law should be used only when it is the most efficient instrument to use in comparison to private or administrative law. Most efficient within the scope of this thesis means that criminal law reduces harm at the lowest cost when compared to the costs of private or administrative law. In other words, social welfare is maximized, or alternatively, the social costs (harm and enforcement costs) are minimized. This assumption of rationality and

efficiency has been highly criticized by legal scholarship who believes that criminals can be irrational and that the goal of criminal law is definitely not efficiency but that it has a moral and symbolic value. This debate on who is right or wrong lies outside the scope of this thesis. What can be implied from the economic analysis is that similarly as in criminal legal theory and criminology, only under certain limited circumstances enforcement through criminal law should be used. The main reasoning is not because of the strongly coercive and condemn-evoking value of criminal law, as the criminal lawyers and criminologists argue, but because of the fact that the use of criminal law is very expensive remedy. It is expensive not only for the government (costs of imprisonment are enormous), but also in a way for the offender as criminal sanctions can be severe, and can have a stigmatizing effect. In a nutshell, the social costs of invoking criminal sanctions must be outweighed by the benefits it provides in terms of deterrence or lower harm in general. The economic criteria for criminalization analyzed based upon this cost-benefit analysis form the basis of the economic framework here established and will be discussed next.

7.2.2 Economic Criteria for Criminalization Summarized

In this sub-section, I tend to answer the first sub-question of my dissertation, and that is: *What are the economic criteria for criminalization as opposed to relying on private and administrative law remedies?* Chapter 4 directly contributes to answering this question as it discusses the need for public law enforcement as opposed to private law enforcement, as well as the need for criminal enforcement *vis-à-vis* administrative enforcement. These normative criteria show trade-offs between these three legal instruments, all aiming at reducing harm. There were six criteria identified justifying the use of public law enforcement, which comprises of criminal and administrative law: (1) intent, (2) imperfect detection and enforcement by private parties, (3) the level of harm, (4) low probability of detection, (5) punitive aim of law, and (6) if the public law enforcement costs are lower than those of private law enforcement. Under these conditions, it was argued that private law, namely tort law, does not suffice to decrease and

internalize the cost of harm efficiently, hence, public enforcement would be needed and preferred.

Moving on to the criteria for criminalization as opposed to criteria for using administrative law, I pointed out four normative criteria: (1) the availability of imprisonment, (2) stigma, (3) deterrence strategy (as opposed to compliance strategy), and (4) if criminal enforcement costs are sufficiently low. Under these circumstances, it seemed plausible to argue that criminal law is needed, and hence, would be the most preferable instrument to use from a social welfare point of view. Based upon this analysis, economic criteria for criminalization were summarized. It was argued that criminalization of an act (or enforcement through criminal law) should be used in areas where:

1. harm is large and/or immaterial and/or diffuse and/or remote
2. stigma is desired (educative role of criminal offences)
3. the probability of detection is low
4. criminal enforcement costs are sufficiently low.

If harm is large, severe sanctions are needed to provide sufficient incentives for deterrence, such as for example even imprisonment. Consequently, if harsh sanctions are applied, strict procedural safeguards are necessary to minimize the error costs of a wrongful conviction. If harm is immaterial, it is difficult to compute its objective value. Criminal law with severe sanctions can provide an extra 'kicker' to account for these non-economic losses. If harm is diffuse, remote and large in total, criminal investigative powers and harsh sanctions might be necessary. Thus, it boils down to the fact that for serious violations neither private nor administrative sanctions are sufficient, and criminal sanctions are needed. Only criminal law should have a stigma effect, as has been argued in Chapter 4. Thus, if stigma is desired by a policy maker, criminal law should be used as a signaling mechanism to convey a message to the society about the harmful consequences of the conduct in question. This would decrease the information costs. If the detection rate is low, good investigative powers and severe sanctions are necessary to reach optimal deterrence, which again might be best provided by criminal law.

In general, criminal enforcement costs are said to be high, nevertheless, these depend on the number of violations, their probability of detection and sanctioning as well as on the marginal costs needed to increase the probability of detection and sanctioning by one unit. If sufficient amount of violations are deterred by the threat of a criminal sanction, and if the marginal enforcement costs are sufficiently low, criminal law enforcement costs might be lower than those of administrative law. This is the case if otherwise an administrative sanction failed to deter sufficient amount of violations, hence more enforcement would be needed.

Under these circumstances, *ceteris paribus*, criminal law was argued to be justified as the most efficient instrument to internalize the social costs of harms. The criterion of the strategy employed by the enforcement agency, whether a deterrence or a compliance strategy, did not make it to the 'criteria for criminalization' list as a differentiating factor between enforcement via criminal and administrative law, as it is believed that this criterion does not make much sense from an economic perspective. Many times administrative sanctions, particularly administrative fines are used as a deterrent, and hence in these cases administrative agencies still apply a deterrence strategy rather than a compliance strategy. From this follows that the distinction 'deterrence vs compliance strategies' should not be associated with the distinction between criminal and administrative sanctioning, respectively.

As expected, these findings all point to the same conclusion: the use of the criminal law should be limited only to the cases where it is really needed – where the benefits outweigh the costs and where the private or administrative sanctions do not provide sufficient incentives for compliance at a relatively low cost. Because of the relatively costly criminal procedure, only certain harmful conducts satisfy this condition. When applied to environmental law, a proportion of environmental violations have large harms, diffused harm, low probability of detection, stigma might play a role and signaling could take place. If the enforcement costs are sufficiently low, criminal law should be used for these types of harms. Looking into practice of four countries and their environmental enforcement instruments (Chapter 5), the results show a diversified picture. In some jurisdictions enforcement via criminal law has been primarily

used, while in other administrative sanctioning is relied upon. This presented a perfect case study to investigate whether the normative framework presented above applies, and if it does not, to evaluate whether this is a good policy. From the analysis, it could be seen that legal systems use additional enforcement mechanisms, such as administrative sanctions. Thus, the question follows what is the scope and role of administrative law in these cases. Theoretically, if criminal law should be used as last resort mechanism, there should be sufficient scope for administrative law to complement criminal enforcement. Whether this is the case, and whether (and under which conditions) it should be the case will be discussed next.

7.2.3 The Role of Administrative Sanctions

In this sub-section, I intend to answer the second sub-question of this thesis, namely: *Is there a scope for administrative sanctions, namely administrative fines, and if yes under which conditions?* Chapters 5 and 6 directly contribute to answering this question by looking at the scope of criminal and administrative law in enforcing environmental regulations empirically as well as theoretically. In Chapter 5, from the data available and analyzed, it could be seen that the dismissal rate of violations classified as crimes is relatively high. In the Flemish Region, for example, the data shows that on average in around 60% of cases the prosecutor dismisses the case. Similar data is shown for Germany, during the 1980s. As such, the prosecution rates are relatively low, in the Flemish Region around 7%, and in the UK around 3% (but the prosecution rate for serious violations is 63%). The Flemish Region and the UK until mid-2009 relied primarily upon criminal law to enforce their environmental violations. The purpose is not to show that the prosecution rates are low, as this might be the range of violations for which criminal law would be the most efficient instrument to use, and hence, should be used only for this proportion of violations. The problem lies in the fact that if only a small proportion of crimes is actually prosecuted, maybe the scope of criminalization should be decreased. This would correspond well to the theoretical discussion presented in Chapters 2 to 4. Then one should ask what happens with all those violations (crimes), which do not merit going through the criminal sanctioning system but still merit enforcement. One way of dealing with all these

violations is to apply administrative sanctions, particularly administrative fines, which also have deterrence and punishment as goals. The empirical assessment in Chapter 5 gives an indication that in practice this is the case, and hence there should be a role for punitive administrative sanctions, particularly when talking about environmental violations. This can be seen from the fact that several jurisdictions (and this is becoming a trend), such as Germany or the Netherlands, do use administrative sanctions extensively. The data does not provide a clear indication about the relative effectiveness of these two systems on deterrence or compliance, but given that the current trend is to give environmental agencies the power to impose administrative fines, it could be implied that an alternative to criminal law is needed to deal with this problem of 'under-enforcement'.

Whether administrative fines are indeed a good alternative to use is discussed theoretically in Chapter 6. In this chapter a simple model is developed to show which factors are relevant when assessing whether administrative fines are indeed welfare enhancing compared to using criminal fines. Because criminal law is needed in certain circumstances (discussed throughout this thesis), administrative fines can act only as a complement to criminal sanctions in a sense that they substitute criminal sanctions for minor violations. From Chapter 5, it could be seen that the best way to complement criminal enforcement is to apply administrative fines to violations which are not interesting for the prosecutors (whether for policy or technical reasons), but which should still be enforced in order to induce companies to comply. In principle, these could be minor violations for which harsh and expensive criminal sanctions are not needed and would not justify the high criminal enforcement costs. This is the reason why in the model developed in Chapter 6, administrative fines are imposed only for minor violations. The model is a simplified version of reality where firms are assumed to be calculative actors maximizing their profits (which is not an unrealistic assumption as such) based on the expected sanction they would be facing. The only elements taken into account are abatement costs, expected fines, enforcement costs and the level of emissions, which are assumed to be a proxy for harm. Based upon this analysis, it is suggested that administrative fines could indeed be a welfare enhancing (meaning more efficient than criminal fines) instrument for minor violations,

but this would be true only under certain conditions. The relevant factors are the probability of detection and sanctioning, marginal enforcement costs and particularly the abatement costs and their distribution among firms.

From the model it could be seen that the findings depend greatly on how firms differ in their abatement costs, and how different are the marginal criminal and administrative enforcement costs, as well as the probabilities of detection and sanctioning. If the majority of firms has either very low abatement costs or very high abatement costs, and administrative fines would be imposed for minor violations (medium abatement cost firms), the advantage of having administrative fines would not really materialize. This is because firms would be complying or committing serious violations for which criminal fines would be imposed. Thus, one condition for administrative fines to be welfare enhancing is that (1) there is a sufficient number of firms committing minor violations for which an administrative fine would apply. Another condition is that (2) administrative enforcement costs (defined in Chapter 6 as the squared probability of detection and sanctioning multiplied by the marginal enforcement costs) are sufficiently low compared to the criminal enforcement costs. Because of the expected higher probability of detection and sanctioning of administrative fines, marginal administrative enforcement costs must be low enough to provide efficiency gains, as compared to using criminal fines. However, it is also debated whether enforcement costs differ greatly between criminal and administrative fines. As administrative fines are considered within the meaning of Art 6 of ECHR, at least in Europe, similar safeguards apply as to criminal sanctions. The conventional wisdom argues that administrative enforcement costs are lower than criminal enforcement costs, but this might not be the case. Some empirical evaluation of the actual enforcement costs would be necessary, which to my knowledge has not been done so far. Thus, it might not be so straightforward to claim that the availability of administrative fines for those violations that do not merit criminal prosecution is desirable from the social welfare perspective. Nevertheless, practice seems to show otherwise, as the trend became to use administrative fines.

What should be remembered is that the model in Chapter 6 applies only to willful and deliberate violations where the offenders make their decision to comply or violate based only on the level of their abatement costs and penalties. These would be the calculative type of violators. Nevertheless, practice shows that many firms comply even though it is not in their best interest to do so, and that some firms violate not because they intend to do so but because they have not been informed properly about the environmental regulations or made an accidental violation. This shows that optimizing law enforcement must be adapted to different types of offenders. This thesis focused on the type of offenders who value the costs and benefits of their actions, which seems to be the mainstream though with regard to violators of environmental law.

7.3 Implications of the Analysis

In this section, I will discuss some implications of the findings presented in the previous section. Based on the analysis, it can be implied that the differentiation between criminal and administrative sanctions makes economic sense only with respect to the differences in procedure, stigma, and in the availability of imprisonment in criminal law. It is particularly the availability of imprisonment as a sanction, which makes up the comparative advantage of criminal law. The goal of administrative sanctions is primarily to provide reparatory measures and to return to compliance. The goal of criminal sanctions is to deter, punish and censure. However, administrative fines are almost identical to criminal fines with respect to their goals of deterrence and punishment, as well as in terms of procedural safeguards, such as the higher standard of proof. These two sanctions can hence be seen as substitutes, but they do have procedural differences, which are economically relevant. Imprisonment is available only under the criminal law with the primarily goal to incapacitate. This is the first difference between the criminal and administrative sanctions that could have economically justification. However, this is the case only under the condition that the costs of imprisonment are outweighed by the benefits from incapacitation and deterrence. This is the case when monetary sanctions do not

provide sufficient incentives (as discussed in Chapter 4), and when harm is so large that a severe sanction is justified.

Another reason why there should be two distinct systems is the procedure. Even though the procedural differences seem to decrease, there are still important differences in the imposition of a criminal and an administrative sanction. These differences reflect costs that need to be borne by the government. As argued, it is important to see how costly it is to increase the probability of detection and sanctioning. In addition, procedural differences also justify why stigma should come only from a criminal sanction. A stricter criminal procedure justifies the stigma coming from criminal sanctions because beliefs about the reliability of information coming from a conviction would not be diluted (Galbiati and Garoupa 2007: 273-283). Therefore, one of the implications of this study is that in order to benefit from having two separate systems of laws, criminal and administrative, procedural differences should be maintained. The reality shows that this is not always the case, as the distinction between criminal and administrative procedures is sometimes blurring.

Stigma and the declaratory function of criminal law is also another differentiating factor (assuming they exist, which seems to be the case). Even though stigma as a signaling device is difficult to manipulate and measure as it is a non-legal sanction imposed by the society, it can still have economic justification. This is the case because stigma can be seen as an extra cost to the offender, which does not tap government's resources. In addition, signaling a norm through criminalization could be cost-reducing if it decreases the information costs in a society with regard to 'learning' about social norms. Hence stigma, with all the controversies about its effect, might justify the difference between criminal and administrative law from an economic perspective.

If the model developed in Chapter 6 holds, then from an economic perspective, society should have two differing systems of laws to enforce environmental violations in order to take advantage of the inherent efficiency gains, mainly coming from the enforcement costs, and the

decreased level of harm. This suggests that the economic explanation for the use of the criminal law also boils down to the fact that it should be reserved for the most serious violations, and hence in a way applied as last resort mechanism. Using the criminal law as last resort was also advocated in the legal scholarship and criminology. The difference was in the methodology used to reach this conclusion. The economic approach has provided a clear framework of analysis, indicating a clear benchmark according to which enforcement mechanisms could be compared and showed criteria under which one system is better than the other.

One legal implication of these findings is that minor crimes should be decriminalized, and classified as administrative infringements, or at least 'de-penalized', as has been the case for example in Belgium or the Netherlands. This shows that procedural differences between criminal and administrative law could be seen as a tool of decriminalization. This is easier said than done, as legislative changes are required. It is important to note, as mentioned above, that criminalization is often used as a signaling/symbolic device. It sends out a signal to the world that the issue at stake is important and should be taken seriously. This is what happened at the European level with regard to environmental law, where the European Commission is in a way forcing the Member States to enforce several of their environmental regulations by the use of criminal sanctions.

7.4 Limitations and Suggestions for Further Research

As mentioned already, one of the limitations of this research is that this economic framework is suited for calculative offenders only and looks only at static efficiency. The world is too complex to be fully explained by economics. The social welfare function discussed in this thesis is a simplified version of reality, and does not take into account for example the moral cost of criminal sanctions or the error costs of wrongful convictions. Factors, such as reputation, stigma, or other non-legal sanctions could play an important role in inducing companies to comply. For those type of offenders who violate the law because of lack of information,

informational remedies might be more suitable. Therefore, a more extensive research into why companies comply or violate, and how the decision is made at the firm level would be needed to identify precisely what type of offenders the society is dealing with. Criminology seems to be going in this direction. This would provide important insights into the debate on the optimal enforcement strategies. In addition, looking at the problem from a government's perspective, the discussion of the prosecutorial discretion and how judges decide the cases would also contribute to the question presented in this research. This would provide better explanation for the observation that prosecution rates are relatively low, and whether this is indeed a problem for enforcement. All this lies outside the scope of this thesis and would require further research.

Moreover, as could be seen in Chapter 5, there is a great lack of data particularly with regard to enforcement issues. Hence, as also suggested by criminologists, another suggestion would be to improve the data collection at national, international and European level in order to be able to do proper empirical studies testing the theories of optimal law enforcement. Only then, proper estimates could be made of the impact of criminal and administrative sanctions on social welfare. This would also be beneficial for comparative law and economics, which seems to lack empirical comparative research with regard to enforcement, particularly enforcement of environmental law. OECD and some others did conduct comparative studies of environmental law mechanisms in several countries (OECD 2009b; OECD 2009a; Faure and Heine 2005: 204), but the lack of data did not allow them to do a proper evaluation of how well the different legal system do in protecting the environment.

Lastly, it would be valuable to see whether this theoretical framework could be applied to other areas of law, where criminal sanctions interplay with administrative ones. For example, with regard to cartel enforcement, administrative sanctions are available at the EU level, while it is only the Member States which have the power to impose criminal sanctions, including imprisonment, at their national level. The trend in anti-trust is towards criminalization, even though in reality criminal sanctions are rarely applied (unlike in the United States).

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Samenvatting

De recente EU-richtlijn (2008) over de bescherming van het milieu door het strafrecht verplichtte de lidstaten om strafrechtelijke sancties te gebruiken om een aantal EU-milieurichtlijnen te handhaven. Omdat een richtlijn direct in de nationale wetgeving moet worden omgezet, hebben de lidstaten de verplichting om overtredingen van de milieuwetgeving door middel van het strafrecht af te dwingen. Aangezien het strafrecht van oudsher wordt afgeschilderd als het meest dwingende en het meest dure instrument dat kan worden ingezet tegen schadeverwekkend handelen, leidt dit tot een fundamentele vraag en tegelijk de motivatie voor dit onderzoek: waarom dient het strafrecht te worden gebruikt om al deze activiteiten te handhaven? In sommige gevallen kan het gebruik van administratieve sancties, met name van administratieve boetes, efficiënter werken, omdat de administratieve procedure veel eenvoudiger is, en dus vermoedelijk goedkoper, in vergelijking met de strafrechtelijke procedure.

Dit onderzoek analyseerde de vraag waarom vanuit een economisch perspectief de samenleving bepaalde overtredingen door het strafrecht zou moeten afdwingen, en andere overtredingen juist door middel van privaat- of administratief recht. De bevindingen van dit proefschrift laten zien dat de handhaving door het strafrecht alleen in een beperkt aantal omstandigheden dient te worden gebruikt. De normatieve economische criteria, voor strafbaarstelling ontwikkeld, zijn: (1)de schade is groot en / of immaterieel en / of diffuus; (2) stigma is gewenst (educatieve rol van het strafrecht), (3) de pakkans is laag, en (4) de strafrechtelijke handhavingskosten zijn redelijk laag. Onder deze omstandigheden lijkt de strafrechtelijke handhaving een efficiënt instrument te zijn.

Dit model werd toegepast op de handhaving van overtredingen van de milieuwetgeving in het Vlaamse Gewest, het Verenigd Koninkrijk, Nederland en Duitsland. Uit de empirische evaluatie van deze vier rechtsgebieden is gebleken dat er wel degelijk een rol voor administratieve sancties is weggelegd, met name voor administratieve boetes. Deze kunnen een kosteneffectief

instrument zijn voor het omgaan met overtredingen van de milieuwetgeving die geen strafrechtelijke vervolging verdienen, maar wel handhaving vereisen. De relevante factoren om te beoordelen of de administratieve geldboetes effectief zijn, zijn: (1) de distributie van de kosten van preventie tussen bedrijven, (2) de marginale kosten van handhaving en (3) de waarschijnlijkheid van detectie en sanctionering. Uit de analyse volgt dat om van twee afzonderlijke systemen (namelijk strafrecht en administratief recht) optimaal gebruik te maken de procedurele verschillen tussen beide systemen moeten worden gehandhaafd. Deze verschillen kennen immers een economische rechtvaardiging.

About the author

Katarina Svatikova has been a PhD researcher at the Erasmus University Rotterdam, taking part in the European Doctorate of Law and Economics (EDLE) from November 2006 till October 2010. She joined RILE (Rotterdam Institute of Law and Economics) after finishing her MSc degree in Economics and Law (cum laude) from the Utrecht University. She also holds a MA degree in International Relations and European Studies from the Central European University in Budapest, Hungary, and a BA degree in Social Science from the University College Utrecht. This book corresponds to her doctoral thesis.

Katarina was teaching a crash course in Mathematics for the master students of EMLE. She has also been involved in their Master thesis supervision. Besides having a couple of publications in the field of enforcement of environmental law, she has participated and presented her research at several conferences, such as the American Association of Law and Economics and the European Law and Economics Association, and attended several summer schools.