Are Lawyers Worth the Cost?

Legal Counsel in Environmental Criminal Court Cases

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Abstract: Lawyers arguably play a critical role in court proceedings. However, lawyers are expensive to hire. Defendants prosecuted by courts surely hope that legal representation by lawyer is worth the expense. This study empirically explores this trade-off by estimating the effect of legal representation on various court decisions surrounding the prosecution of individuals in environmental criminal cases in Flanders (Belgium) between 2003 and 2006. Our results apparently reveal that the presence of a lawyer meaningfully lowers the likelihoods of courts convicting a defendant and imposing monetary sanctions and prison sentences on defendants and reduces the magnitudes of monetary sanctions and prison terms. However, these benefits may not outweigh the costs of hiring a lawyer. Consequently, our results do not unequivocally demonstrate the prudence of securing legal presentation in court. Instead, conclusions depend on the benefits associated with reduced prison terms and the expected number of hours billed by the hired lawyer.

Keywords: lawyer; legal representation; environmental crime; sanctions; incarceration

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1. Introduction

Yearly, millions of people must appear before a variety of courts. For instance, 1.62 million defendants were prosecuted in criminal cases in the UK magistrates' courts in 2011 (Ministry of Justice, 2012). Given the serious consequences of prosecution, it seems prudent to secure a lawyer since lawyers (should) have superior knowledge of legal text and experience with court proceedings. However, courts generally do not provide lawyers; worse yet, lawyers are expensive to hire. Given this expense, we can wonder whether lawyers are worth their price by helping to shape the outcomes of court trials.

The vast majority of past empirical research studying the effect of legal representation on case outcomes focuses on common law countries, with the largest proportion using US data [see Sandefur (2010) and Greiner and Pattanayak (2012) for overviews] and only a limited fraction using UK data (e.g., Genn and Genn, 1989; Latreille et al., 2005; Pleasence and Balmer, 2007). Studies set in a civil law country are extremely scarce, with the notable exceptional studies of Vietnam (Huang, 2008; Huang et al., 2014) and Slovenia (Grajzl et al., 2016). Furthermore, these previous studies cover a wide variety of courts and proceedings, such as juvenile courts (Clarke and Koch, 1980; Feld, 1989), tax courts (Lederman and Hrungr, 2006), administrative tribunals (Genn and Genn, 1989; Monsma and Lempert, 1992), housing courts (Seron et al., 2001), constitutional civil rights cases (Schwab and Eisenberg, 1988), civil cases (Huang, 2008) and bail hearings (Colbert et al., 2002). However, to our best knowledge, no previous study analyzes environmental cases. Of the existing studies, most focus on the value of representation in the context of civil and administrative procedures. Surprisingly few studies examine the value of representation in the context of criminal litigation procedures. Overall, research on the value of legal representation is limited. As noted by Monsma and Lempert (1992), the limited number of studies probably stems from researchers' focus on legal contexts in which legal representation is either so common that defendants must actively work to not use a lawyer or so unusual that it cannot serve as

an explanatory factor because no variation exists (Huang, 2008). For example, we cannot consider environmental cases in the US since all defendants hire lawyers.

Our empirical study contributes to this literature in four important ways. As the first contribution, we explore a new type of criminal setting: regulatory law. Previous studies focus on standard crimes, such as burglary, arson, assaults. Our exploration is useful since results based on other criminal settings most likely do not generalize to the regulatory setting. Second, we explore the extensive margin by distinguishing between the presence and absence of counsel in a criminal setting. Prior studies of criminal cases distinguish only between public counsel and private counsel (Clarke and Koch, 1980; Anderson and Heaton, 2012), yet previous studies of the extensive margin focus exclusively on non-criminal proceedings, e.g., divorce, child custody (Greiner and Pattanayak, 2012). Third, we explore the effect of legal representation in a civil law system. Common law and civil law systems differ greatly (Cooter and Ulen, 2013). Thus, the role of lawyers differs substantially. For instance, common law systems depend on precedents; therefore, lawyers can help defendants by finding and citing relevant and helpful previous cases. In contrast, civil law systems do not depend on precedents; consequently, lawyers do not need to identify such cases. Fourth, we compare the benefits and costs of legal representation using a simple design, which still represents a contribution since few studies even attempt a comparison.

To generate these contributions, we examine the benefits and costs of legal representation within a civil law context for criminal procedures on the previously ignored topic of environmental crime. Specifically, we explore the prosecution of environmental criminal offenses committed by individuals in Belgium, in particular, in the region of Flanders. Interestingly, this setting represents a legal context where a sizable portion of defendants do not hire a lawyer since they are not legally required to do so. Of the prosecuted individuals in our sample, some 40% chose not to be represented by a lawyer.¹ As our

¹ We purposively do not explore cases involving legal entities, e.g., companies, since these defendants nearly always hire legal representation.

identification strategy, we distinguish between cases with legal representation and cases without representation. As our strategy does not exploit any random assignment of legal counsel or natural experiment, we rely on exogenous variation in legal representation. Of course, the presence of a legal counsel may be endogenously determined, which would bias our estimate either through the selection process of defendants hiring a lawyer or that of lawyers accepting a client; we assess the implications of this possible, if not likely, bias in sub-section 6.4. Given this bias, our estimates may not reflect causal effects.

Our empirical results reveal that the hiring of a lawyer lowers the likelihoods of being found guilty, receiving a fine and monetary sanctions in general, and incarceration. Beyond the likelihood of receiving particular sanctions, the presence of a lawyer also lowers the magnitude of fines and monetary sanctions in general as well as the length of prison terms. However, some portions of sanctions are typically suspended, the remaining portions deemed the effective magnitudes. Given this distinction, we find that hiring a lawyer tends to raise the suspended fine magnitude and, not surprisingly, lower the effective fine magnitude. On the other hand, the hiring of a lawyer lowers the effective prison term, yet does not seem to influence the suspended prison term. Lastly, we compare these benefits of legal representation with the likely costs of representation.

In the following section, we review the relevant literature and highlight the contribution of the current study. Section 3 presents the legal context of the Flanders, while Section 4 describes the dataset. Section 5 presents the econometric framework. Section 6 discusses the estimation results and investigates the trade-off between the benefits and costs of hiring a lawyer using a simple back-of-the-envelope calculation. Section 7 explores the role of Flemish legal counsel in practice. Section 8 concludes.

2. Literature Review and Contribution of Present Study

The current study relates to two strands of the literature: (1) research identifying the role and

value of legal representation in legal proceedings and (2) research exploring the determinants of environmental sanctions.

As mentioned above, the relevant empirical literature studies the role of lawyers in legal proceedings in several different settings. Previous studies examine the impact of legal representation for a variety of procedural steps, a variety of offenses, and a variety of geographical settings. Most of these empirical studies focus on the United States, although some studies examine other countries.

Most relevant to our exploration, previous studies explore the impact of legal representation on case outcomes. The empirical evidence of this impact, based on the comparison between cases with and without representation, is ambiguous. By examining two North Carolina juvenile courts, Clarke and Koch (1980, p. 263) conclude *‘that the participation of lawyers in juvenile court was largely a formality, a token compliance with due process requirements rather than an integral part of court fact-finding’*. On the other hand, Schwab and Eisenberg (1988) find that representation by counsel significantly correlates with success of constitutional civil rights cases in U.S. federal courts. By assessing the public housing eviction process in Hawaii (US) from 1966 to 1985, Monsma and Lempert (1992) find that the likelihood that legal representation aids a tenant depends on case type and varies over time. By exploring the New York City’s Housing Court, Seron et al. (2012) find that low income tenants with legal representation enjoy significantly more beneficial outcomes than their counterparts without legal representation, independent of the merits of the case. Huang (2008) studies more than 100,000 civil cases terminated in Taiwan from 2000 to 2006. This study shows that parties were less likely to settle a case when both were represented, while parties were most likely to settle a case when neither was represented. This study also shows that legal representation had no significant bearing on the case outcomes when the parties went to trial.²

² As a related study, Abrams and Yoon (2007) exploit the random assignment of public defenders in Clark County of Nevada to investigate attorney ability.

Some studies explore other procedural steps. For example, Colbert et al. (2002) explore the impact of legal presentation in pretrial bail hearings in the US. The authors find that representation had a significant impact in bail hearings for non-violent offenses in Baltimore. The study shows that significantly more represented defendants were released from pretrial custody or had their bail reduced to an affordable amount than were unrepresented defendants. As another example, Ater et al. (2017) explore whether a reform to offer the right to publicly provided legal counsel in Israel affected arrest proceedings. Results reveal this reform reduced arrest duration and the likelihood of being charged.

Rather than exploring the influence of legal representation, some studies investigate the impact of different types of representation on case outcomes. For instance, Anderson and Heaton (2012) study the impact of public defenders versus appointed counsel in murder cases in Philadelphia (US). Compared to appointed counsel, public defenders in Philadelphia reduced their clients' murder conviction rate by 19% and lowered the probability that their clients received a life sentence by 62%. Public defenders reduced overall time served in prison by 24%. Previously, Clarke and Koch (1980) examine two North Carolina (US) juvenile courts in 1975-1976; they find that the type of counsel a child had (private, individually assigned, or specialized juvenile defender) made no difference in whether the child was deemed delinquent or was committed. Anderson et al. (2019) examine the effects of holistic defense offered to indigent clients, which helps to address underlying life complications, in contrast to traditional public defense. Results reveal that holistic defense does not appear to affect conviction rates, yet it reduces the likelihood of a custodial sentence and the expected sentence length. Greiner et al. (2013) use a randomized field experiment to compare a traditional attorney-client relationship and a limited legal assistance package in a legal setting where potential clients face eviction. Results show that the traditional relationship improved the likelihood of a client retaining his/her home.

To identify the benefits of legal representation, our empirical study examines environmental

sanctioning decisions made by criminal courts in Belgium. In this way, our study contributes to the literature on the determinants of environmental sanctions (e.g., Deily and Gray, 1991; Oljaca et al., 1998; Deily and Gray, 2007). In particular, our study relates to studies that explore environmental sanctioning decisions made by Belgian legal authorities, including criminal courts, as well as public prosecutors and administrative authorities. Most of these Belgian studies exploit parts of the extensive *Environmental LawForce* dataset; these specific studies examine the use of non-monetary sanctions by lower criminal courts against corporate environmental offenders (Blondiau and Rousseau, 2010), the use of prison sentences by lower criminal courts against environmental offenders (Billiet and Rousseau, 2014), the use of harm-based versus act-based sanctions by lower criminal and administrative courts (Rousseau and Blondiau, 2014), the interactions between sanctioning decisions by lower criminal courts and the court of appeal (Billiet et al., 2014), and the comparison of the levels of administrative and criminal fines imposed by lower sanctioning authorities (Blondiau et al., 2015). One additional study – Faure and Svatikova (2012) – investigate the scope of criminal and administrative law enforcement of environmental violations in Belgium, along with three other West European jurisdictions.

In sum, our study contributes to the two identified literature strands in four ways: (1) explore a new type of criminal setting: regulatory law, (2) examine the extensive margin between the presence and absence of counsel in a criminal setting; (3) assess the effect of legal representation in a civil law system, and (4) compare the benefits and costs of legal representation. Our results appear to reveal that lawyers are at least effective at improving *some* legal outcomes but not effective at improving *all* legal outcomes. This said, since our analysis does not control for selection bias, our estimates may not reflect causal effects.

3. Legal Context

This section provides an overview of the characteristics of the Belgian criminal sanctioning

system that are most relevant for the environmental cases in our dataset. For more details, see Billiet et al. (2014) and Billiet (2016). Belgian criminal court judges typically possess considerable discretion over their sanctioning decisions. Importantly, sentencing guidelines do not exist in Belgian criminal law. Criminal judges are not bound by the public prosecutors' sanctioning requests. Moreover, criminal judges are not constrained by the sanctions imposed in previous cases.

If facts and liability are proven and the defendant is not acquitted, which happens in nine out of ten cases (Billiet et al., 2009), the judges' first decision involves the choice between a postponement of a conviction and an actual conviction. Postponement of conviction basically represents a choice not to punish, even though the defendant is labelled as guilty, which includes a probationary period of one to five years in which the offender must not re-offend. When the criminal court opts to convict, its second decision concerns sanctions. The court needs to impose at least one principal sanction. Belgian criminal law offers three principal sanctions: imprisonment, fine, and community service (Van den Wyngaert, 2009). Each sanction is punitive in nature. The imposition of multiple principal sanctions is legally possible and quite common (Billiet and Rousseau, 2014). For each imposed principal sanction, the judge also needs to determine a sanction level that lies between the legal minima and maxima. The ranges between minimum and maximum levels are typically very large. The statutes reflected in our study provide for fines ranging from a minimum of 26 € to a maximum of 10,000,000 € and for prison sentences with a minimum of eight days and maxima ranging from one year (e.g., the Environmental Permitting Decree) to five years (e.g., the Waste Decree).³

When determining sanction magnitudes, criminal courts reserve the option to suspend sanction execution, either partially or completely. Similar to a postponement of a verdict, a suspension always

³ In Belgium, the fine amounts mentioned in legislation are multiplied by a legal correction factor ("opdecimen") to counter the effects of monetary depreciation. This correction factor equaled 5 from 2002 until 2004 and 5.5 from 2005 until 2011 and this factor has equaled 6 since 2012. The identified minimum and maximum fines do not reflect this factor.

includes a probationary period of one to five years. Criminal legal doctrine classifies both postponement and suspension as “favors”, representing expressions of leniency. Unlike postponement, suspension is a widespread option in the sanctioning possibilities of criminal courts throughout the EU, where it is commonly seen as a means to prevent recidivism (European Commission, 2004).

As the last step in the sanctioning decision, once the criminal court has decided to impose at least one principal sanction, suspended or not, the court can also impose one or more additional sanctions. The additional sanctions can be punitive or remedial in nature, with the remedial ones typically aiming to stop or at least mitigate further damage to the environment. The most common additional sanctions are the forfeiture of illegally acquired benefits, waste removal orders, and the injunction to cease a business operation for safety reasons. Forfeiture of illegally acquired benefits fits with the widespread belief that “crime should not pay” (Bowles et al., 2005). Under Belgian law, this sanction can only be imposed if explicitly requested by the public prosecutor.

Belgian law identifies only one factor that must influence the sanctioning decision: the criterion of proportionality with “the seriousness of the offense”, which indicates that the criminal judge must punish “in proportion to the seriousness of the offense”. This basic sentencing criterion, developed by the Belgian Supreme Court, applies to all types of criminal cases. It includes two sub-criteria: (1) the objective gravity of facts, which is rated by the extent to which the unlawful activities harmed or might have harmed the public interest, and (2) the culpability of the defendant.

Individuals, as well as legal persons, who consider themselves harmed by the offense under consideration, can become a civil party in a criminal case. If a defendant is convicted, the judge will also rule on civil claims and, if relevant, award damages.

4. Data

To assess the impact of legal representation on court outcomes, we use the Environmental

LawForce database (www.environmental-lawforce.ugent.be). This database records the complete environmental case load from January 1, 2003, to December 31, 2006, for seven of the – then existing – thirteen judicial districts located in Flanders – Brugge, Dendermonde, Gent, Ieper, Kortrijk, Oudenaarde, and Veurne – which represent the courts of first instance, and the relevant court of appeal, located in Gent, representing one of the five Belgian courts of appeal. In addition, this database records the complete punitive administrative case load (fines) of the Brussels environmental administration for the same time period.

The database includes information on 1,034 criminal cases, of which 912 were decided by the courts of first instance, while 122 were concluded in appeal (Billiet et al., 2014). In total, 1,617 defendants were tried in these 1,034 criminal prosecutions: 1,352 only in first instance and 265 both in first instance and in appeal. Some 80 % of the defendants are individuals, while 20 % are legal entities. Since each defendant can face several accusations, the cases include 3,561 accusations, of which 3,004 were dealt with in first instance and 557 in appeal. The sampled environmental case load focuses on the environmental legislative acts listed in the appendix.

For the current study, we limit the dataset to the 1,330 decisions made by the criminal courts of first instance that deal with individual defendants. In Belgium, only the public prosecutor can initiate settlement offers, which take the form of a one-time take-it-or-leave-it offer. Consequently, in principle, legal counsel cannot negotiate a settlement with the public prosecutor. Thus, the presence or absence of legal counsel does not influence the likelihood of a case going to court. However, exceptions to this general rule occasionally arise. We purposively avoid cases brought before the court of appeal because they most likely are distinctively different, demand additional analysis, and offer a much smaller sample (122 cases with 265 defendants of which only 22 did not hire a lawyer).⁴ We purposively exclude legal

⁴ By ignoring appeals, our empirical estimates offer only a lower bound on the value of hiring a lawyer since we do not consider the value of using a lawyer to increase the likelihood of an appeal if the judge imposes a harsh

entities since these defendants nearly always hire legal representation. The resulting sample consists of two types of individuals: professional individuals, whose infractions tie to professional work at businesses or government entities, and private individuals, whose infractions tie to an individual's private life. Professional individuals represent 44% of the dataset (585), while private individuals represent 56% (745). Approximately one in five defendants had already been convicted of one or more environmental or other criminal offenses before their court trials: 22% of the prosecuted professionals and 20% of private individuals.

By exploring demographic characteristics of the prosecuted professionals, we demonstrate that 91% were male and 95% were of Belgian nationality. These professionals were 47 years old on average. For prosecuted private individuals, 80% were male and 89% were of Belgian nationality. Private individuals were 44 years old on average.

Regarding the prevalence of legal representation, 59% of defendants were assisted by a lawyer during court proceedings. Specifically, 77% of prosecuted professionals (451) employed a lawyer, while only 45% of private individuals (332) did so. In Belgium, defendants, even those facing the possibility of a prison sentence, are not legally required to be represented by a lawyer and can always decide to represent themselves in court (FOD Justitie, n.d.). Moreover, two features of the Belgian legal system explain why defendants would *choose* to eschew legal representation. First, lawyers are typically paid based on fixed (hourly) rates rather than through contingency fees.⁵ Second, the justice system does not automatically provide a lawyer if the defendant cannot afford one.⁶

sanction. As important, we acknowledge that the effect of hiring a lawyer may differ between cases decided by first instance courts and cases concluded in appeal. Thus, we do not claim that our results generalize to all cases prosecuted in the state of Flanders during our sample period.

⁵ A contingency fee is payable only if there is a favorable result. Thus, the contingency fee makes litigation possible for people who could not otherwise afford it (George, 2006).

⁶ Still some insurance policies include the free provision of legal aid. Moreover, low income defendants are able to apply for free legal aid from the government (FOD Justitie, n.d.). However, transaction costs are typically substantial for both options.

Table 1 summarizes the distribution of different case outcomes. For the full sample, we see that 88% of defendants were found guilty, i.e., convicted. Of the guilty defendants, 85% received a fine and 4% were confronted with a forfeiture of the illegally acquired gains. In addition, the criminal court imposed a prison sentence against 9% of convicted defendants and imposed a problem solving or remedial sanction on 19% of convicted defendants. The strong majority of these remedial sanctions were clean-up orders related to waste offenses. In waste cases, judges are legally required to impose a clean-up order under commonly applicable circumstances. Given this requirement, we examine this type of sanction as a robustness check since the presence of a lawyer should not influence the judicial decision to impose a remedial sanction at least not in the strong majority of cases.

5. Econometric Framework

This section describes our econometric framework by depicting the dependent variables, primary regressor, and control factors.

In order to study the effect of legal representation on case outcomes related to environmental crime in Flanders, we analyze the described data at the level of an individual defendant. For each defendant, we possess information regarding a variety of outcomes, i.e., court decisions. The first group of outcomes include binary decisions made by the court: (1) whether or not to find a defendant guilty, (2) whether or not to impose a fine, (3) whether or not to impose a monetary sanction (i.e., a fine and/or a forfeiture of illegally acquired gains), (4) whether or not to issue a problem solving or remedial sanction, and (5) whether or not to impose a prison sentence. We condition the latter four binary decisions on a guilty verdict. Recall that the fourth decision made by the judge is constrained by legal rules; therefore, we choose to interpret the analysis of this decision as a robustness check. The second group of outcomes includes court decisions about the quantitative magnitudes of imposed sanctions, conditioned on a guilty verdict: (1) effective fine, (2) suspended fine, (3) effective monetary sanction,

(4) suspended monetary sanction, (5) effective prison term, and (6) suspended prison term. Again, we measure the effective magnitude as the difference between the initial sanction magnitude and the suspended magnitude. We measure the monetary sanction magnitude as the sum of the fine magnitude and the forfeiture of illegally acquired gains magnitude.

Our primary regressor is the presence (versus the absence) of a lawyer. Beyond this legal representation factor, we add six sets of control factors:

- (1) basic (e.g., year, quarter, court location),
- (2) culpability (e.g., count of proved accusations),
- (3) damages (including pollution categories),
- (4) legal adjustments (e.g., previous conviction),
- (5) mechanics of the legal process (e.g., avenue of violation discovery), and
- (6) defendant personal characteristics (e.g., age).

Appendix Tables A-1 and A-2 identify the full set of control factors. From these groups of control factors, we construct six models (i.e., regressor sets) based on the order of the control factors shown above. Accordingly, Model 1 includes only basic control variables, Model 2 includes both the basic and the culpability control variables, Model 3 includes control factor groups 1 through 3, and so on. We use these different models to assess the robustness of our conclusions. To estimate the binary outcomes, we employ a probit estimator. Sanction magnitudes are censored from below at zero. To estimate these censored outcomes, we employ a Tobit estimator.⁷

Since multiple defendants may be involved in a single case, our estimation clusters the standard

⁷ Alternatively, we could implement a semilog specification in which each sanction magnitude-based dependent variable is logged. However, implementation of this specification requires replacing any zero value with a positive value. This replacement, by its nature, is arbitrary. We employ a Tobit estimator because zero values are sufficiently common in our sample. Rather than logging the bottom-censored dependent variables, we prefer to focus on the linear specification so we avoid the concern about arbitrarily selecting a replacement for zero values.

errors at the level of a single case.⁸

As our identification strategy, we distinguish between cases with legal representation and cases without representation. This strategy does not exploit any random assignment of legal counsel or natural experiment. Instead our strategy relies on exogenous variation in legal representation. However, the presence of a lawyer may be an endogenous regressor, which would bias our estimate. We return to this possible, if not likely, bias in sub-section 6.4.

6. Econometric Results

In this section, we first present the econometric results generated by estimating the link from the presence of lawyer to the observed court decisions. Second, we discuss the quality of the results and assess the effects of the control factors. Third, we comment on the implications of the results for a defendant's decision to hire a lawyer for an environmental criminal case in Flanders. Fourth, we assess the impact of any bias stemming from the possible, if not likely, endogeneity of lawyer presence.

6.1. Effects of Legal Representation

In this section, we present the econometric results for the different case outcomes. Firstly, Table 2 presents the estimation results for the binary outcomes. Assessment of these estimates allows us to investigate the impact of legal representation on the probabilities of (1) being convicted and (2) receiving a particular sanction.⁹ Secondly, Table 3 presents the estimation results regarding the sanction levels imposed on convicted defendants. For each of the dependent variables, we estimate six different models representing a growing number of control variables, as explained in sub-section 5.1. Tables 2 and 3

⁸ Joint estimation of our multiple dependent variables would improve the efficiency of our estimates. However, the binary and censored nature of our dependent variables greatly constrains implementation of any joint estimation. Fortunately, our results reveal statistically significant relationships between the primary regressor, legal representation, and most of the dependent variables. Thus, improved efficiency is not critical.

⁹ Table 2 does not report the marginal effect magnitudes derived from these coefficients for the purposes of assessing the economic importance of our results. (By construction, the reported coefficient signs are identical to the marginal effect signs.) Instead, we assess the economic importance of our results stemming from the Tobit estimation of sanction magnitudes.

display only information on the coefficient for our primary regressor – lawyer presence, along with estimation summary statistics. Appendix Tables A-1 and A-2 display the full regression results for Model 6 for the binary outcomes and bottom-censored outcomes, respectively. The full regression results for Models 1 through 5 reveal highly similar results for the control factors.

To start, we investigate the probability that a defendant receives a guilty verdict. If the criminal court finds supporting facts and liability is proven, a guilty verdict follows. Otherwise, the defendant is acquitted. We find that the presence of a lawyer significantly lowers the probability of being found guilty, except for Model 5 ($p=0.119$). This claim notwithstanding, we acknowledge that our estimation does not control for selection bias; thus, our estimates need not reflect causal effects.

Following a guilty verdict, the court decides on whether or not to impose a particular sanction and the magnitude of any imposed sanction based on the court's perception of the appropriate sanction(s) for a particular defendant. As noted above, we distinguish across four types of sanctions: (1) fine, (2) monetary sanction, (3) prison sentence, and (4) problem solving or remedial sanction. For the former three types, we distinguish between effective sanction magnitudes, i.e., initial level less the suspended amount, and suspended sanction magnitudes. In all cases, we acknowledge that our estimation does not control for selection bias; thus, our estimates need not reflect causal effects.

Firstly, we focus on the fine results. We find that the presence of a lawyer significantly reduces the probability that the court imposes a fine as punishment. Legal representation also influences the magnitude of the fine that is imposed. Assessing the effective fine level, we see that the presence of a lawyer lowers fine level (except in Model 1). Lawyers seem to be able to reduce the fine levels by 2,000 to 3,000 euro. However, legal representation increases the suspended fine level (except in Model 1). Apparently, lawyers successfully lower the effective fine by increasing the suspended fine portion. Recall that following a suspension, an offender who does not relapse within the probationary period of

one to five years will not have to bear the imposed sanction.

Secondly, we examine the monetary sanction imposed by the criminal court. Again, the presence of a lawyer has a significantly negative impact on the likelihood of receiving a monetary sanction. As with fine levels, the presence of a lawyer influences monetary sanction levels, decreasing the effective monetary sanction magnitude, while increasing the suspended monetary sanction magnitude.

Thirdly, we find that the presence of a lawyer also affects the likelihood that a court judge decides to incarcerate a convicted defendant. Represented defendants face a lower probability of receiving a prison sentence. Moreover, the presence of a lawyer significantly reduces the length of the effective prison sentence yet does not appear to influence the length of the suspended sentence.

Fourthly, we explore the probability that a court judge imposes a problem solving sanction such as mandatory waste clean-up. As expected, legal representation does not seem to influence the probability of receiving such a remedial sanction. Statistically, the coefficient representing the presence of a lawyer is not significant.

Finally, our conclusions regarding the estimated impacts of legal representation on court decisions are strongly robust across (almost) all of the estimated models, as shown in Tables 2 and 3. The presence of a lawyer significantly reduces the likelihood of being convicted, the likelihood of receiving a monetary and/or non-monetary sanction, as well as the level of these sanctions. Reflecting on this positive impact of hiring a lawyer, we speculate that lawyers improve legal outcomes due to their superior knowledge of legislation, professional acumen for interpreting legal texts, and experience with court proceedings (Goodman-Delahunty et al., 2010; Eigen and Listokin, 2012). Alternatively, lawyers might improve outcomes because lawyers “speak the language of the court”, present legal cases in a more structured and objective manner, and improve the probability of a successful appeal. Finally, the court may also interpret the presence of a lawyer as a signal that the offender is taking the case seriously.

6.2. Control Factors

In this section, we comment on the broader set of estimation results. For all factors, we acknowledge that our estimation does not control for selection bias; thus, our estimates need not reflect causal effects. As revealed by the Wald tests and F-tests of slope coefficients, shown in Tables 2 and 3, we find solid results for each regression equation, except for suspended fine and suspended monetary sanction magnitudes. We observe no particular temporal patterns since the year and quarter dummies are mostly insignificant. Based on the court indicator coefficients, we observe some evidence that the court in Brugge imposes fewer and lower sanctions for environmental crime compared to the other courts. The courts in Ieper, Veurne and Oudenaarde seem to be less likely to use suspended fines or to impose higher suspended fine levels. Thus, courts, i.e. judges, seem to possess their own preferences regarding the sanctioning decisions with respect to environmental crime.

Regarding the remaining control variables, we find the correct signs where *a priori* expectations are clear. Defendants with a previous conviction face a significantly higher likelihood of sanction imposition and receive higher sanctions. We also observe that more serious offenses are more likely to prompt a sanction and lead to higher sanction levels. We measure the seriousness of an offense using several indicators, such as the number of proven accusations, the duration of the offense, the intentionality of the offense, the presence of explicitly mentioned gain seeking behavior, the presence of harmed civil parties, and the priority status of the offense.¹⁰ The importance of the seriousness of the offense is supported by the observation that courts punish offenders who undertake voluntary measures

¹⁰ We acknowledge that number of proven accusations also represents a court outcome that precedes the judges' decisions over the verdict and sanctions. Thus, this factor may be endogenous with respect to the explored dependent variables. Since it represents only a control factor, we do not attempt to assess or address its possible endogeneity. Instead, we assess whether its exclusion from Models 2 through 6 influences our conclusions. Re-estimation of Models 2 through 6, while excluding the count of proven accusations as a regressor, generates lawyer presence coefficient signs identical to those reported in Tables 2 and 3, highly similar coefficient magnitudes, and very similar p-values. This robustness is not surprising since this regressor proves insignificant in most of the reported estimation results; see Appendix Tables A-1 and A-2 for the Model 6 estimates.

to limit the damages from an incident, clean up the incident, or solve the underlying problem less harshly. The court apparently accepts remedial actions and current compliance as attenuating circumstances.

We find statistical significance for several other factors. Compared to private individuals, professional defendants face a lower probability of being convicted and of receiving monetary sanctions. Professionals also receive lower effective and suspended fine levels and prison sentences. Some differences depend on the industrial sector in which a professional defendant works. However, these results are not straightforward to interpret. Still we observe that defendants working in the accommodation and food sectors are more likely to be convicted and to receive sanctions when convicted and receive higher sanctions. Further, we find that the type of pollution influences court decisions. While waste-related offenders appear less likely to be convicted, they are more likely to receive sanctions, as well as mandatory clean-up orders. These offenders also bear higher sanctions.

Finally, socio-demographic factors apparently influence the sanctioning of environmental crime to only a limited extent. We observe no gender effects. We observe some age effects: weak evidence reveals that older defendants are less likely to receive a prison sentence and bear higher effective fines. We observe some limited nationality effects: weak evidence reveals that Belgian citizen are more likely to be found guilty, more likely to receive a problem solving penalty, and receive higher suspended sanctions.

6.3. Implications for the Decision to Hire a Lawyer

In order to assess whether or not it is a sound decision to hire a lawyer, we investigate the expected effect of legal representation on court decisions and compare these effects to the expected cost of hiring a lawyer. This investigation is merely a back-of-the-envelope calculation rather than extensive cost-benefit analysis.

First, we calculate the expected cost of hiring a lawyer in Flanders. The costs of hiring a lawyer

typically consist of two parts: a representation fee (euro per hour worked on the case) and a charge to cover operational costs (euro per case). A study of the Flemish Bar Association finds that more than half of the lawyers charged a fee, excluding VAT, between 75 and 150 € per hour in 2006, with an average of 100 € per hour for individuals, 125 € per hour for companies, and 134 € per hour for the government (Vacature, 2010). This representation fee applies in addition to operational charges for communication, file management, and transportation costs. These one-time operational charges can easily amount to more than several hundred euros (DAS, 2008). Therefore, we conservatively estimate operational representation costs at 500 euro.

Next, we assess the marginal effects of the presence of a lawyer. As with the underlying coefficient estimates, since our estimation does not control for selection bias, our estimated marginal effects need not be causal. We begin our assessment with the Tobit estimates relating to the effective fine since this effect is already expressed in monetary terms (see Table 3). We find that legal representation is expected to lower the effective fine by 2,282 € (in Model 4) to 2,922 € (in Model 3) for a given offense. Using the most complete model (Model 6), we estimate a 95% confidence interval for the lawyer presence coefficient of [-4827, -241]. Thus, the expected financial benefits of hiring a lawyer range between 241 € and 4,827 € with 95% confidence. Based on the lower benefits estimate of 241 €, given operational charges of 500 €, hiring a lawyer is not worth the hourly fee of 100 €, regardless of the expected number of hours billed. However, based on the upper benefits estimate of 4,827 €, a lawyer is worth the hourly fee of 100 € as long as no more than 43 hours are billed.¹¹

As a broader measure, we assess the marginal effects of lawyer presence on the effective monetary sanction (see Table 3). We find that legal representation lowers the effective monetary sanction

¹¹ As noted above, since our analysis does not explore appealed cases, these calculations only represent a lower bound on the value of hiring a lawyer because they ignore the value of using a lawyer to increase the likelihood of an appeal when relevant.

by 2,054 € (in Model 4) to 3,006 € (in Model 2) for a given offense. Using the most complete model (Model 6), we estimate a 95% confidence interval for the lawyer presence coefficient of [-5047, -343]. Thus, the financial benefits of hiring a lawyer range between 343 € and 5,047 € with 95% confidence. Based on the lower benefits estimate of 343 €, given operational charges of 500 €, hiring a lawyer is not worth the hourly fee of 100 €, regardless of the expected number of hours billed. However, based on the upper benefits estimate of 5,047 €, a lawyer is worth the hourly fee of 100 € as long as no more than 45 hours are billed.

Beyond the impact on the effective fine and effective monetary sanction, legal representation also reduces the probability of conviction, the probability of receiving a prison sentence, as well as the level of that prison sentence. In addition, as legal representation reduces the probability of being convicted, it also reduces the social stigma attached to a criminal record (Billiet and Rousseau, 2014). For individuals working in positions of responsibility where trust is critical, the stigma of a criminal conviction might be severe, implying a substantial loss of future earnings (e.g., Nagin and Waldfogel, 1995). Moreover, the involvement of a lawyer is valuable since a lawyer is better able to preserve the grounds for appeal. Taking all these effects together clearly increases the value of hiring a lawyer.

6.4. Impact of Endogeneity Bias on the Effect of Legal Counsel

The presence of legal counsel may be endogenously determined. Inclusion of an endogenous regressor clearly generates a bias in the regressor's coefficient estimate. This bias may be large enough to undermine our ability to draw the correct qualitative conclusion: legal counsel effectively improves court outcomes for the defendant.

Nearly all of our empirical estimates reveal a negative coefficient for the presence of legal counsel when the outcome is bad for the defendant, e.g., guilty verdict, and a positive coefficient when the outcome is good, e.g., suspended fine magnitude. For nearly all of the court outcomes, the negative

coefficient on a bad outcome and positive efficient on a good outcome proves statistically significant, supporting the conclusion that legal counsel helps defendants. However, the possible endogeneity bias may be driving this conclusion.

Without speculating on the size of the endogeneity bias, we are able to determine the size of the bias needed to undermine our conclusion. Specifically, we can identify the size of the bias needed to remove the statistical significance of estimated coefficient, which we label as the “bias threshold”. If the actual bias magnitude lies below this bias threshold, then we would still draw the same conclusion. If the actual bias magnitude lies above this threshold, then the bias effectively prompts us to draw an erroneous conclusion.

Towards this end, we establish the critical significance level as 10 %. The associated t-test statistic equals 1.65. We assume a fixed standard error for each coefficient. Then we can easily identify the coefficient magnitude consistent with a t-test statistic of 1.65, which we label as the “critical coefficient”. We then calculate the absolute difference between the critical coefficient and the actual coefficient. Finally, we calculate the ratio between the absolute difference and actual coefficient. We interpret this ratio as the “relative bias threshold”.

For each outcome, we consider six regressor sets. To calculate the bias threshold, we focus on the broadest regressor set (Model 6). Our assessment is quite robust to consideration of other models.

We focus exclusively on outcomes where legal counsel apparently proves helpful. Consider first binary outcomes. Regarding the verdict, the relative bias must be at least 10 % in order to overturn our conclusion. In other words, if one or more unobserved variables imply that defendants with legal counsel are less likely to be convicted than defendants without legal counsel, this selection bias would only overturn our finding if the associated decrease is at least 10 % relative to the estimated coefficient. In contrast, the relative bias must be 66 % to overturn our conclusion regarding fine imposition. Similarly,

the relative bias must be 65 % for monetary sanction imposition. In between, the relative bias must equal at least 25 % to overturn our prison sentence conclusion.

Next consider quantitative outcomes. For the effective fine magnitude, the relative bias threshold is 34 %. The threshold is slightly lower for the suspended fine magnitude at 22 %. The relative bias threshold for effective monetary sanction magnitude at 33 % is highly similar to the effective fine magnitude threshold. Moreover, the suspended monetary sanction magnitude has a threshold nearly identical to the suspended fine magnitude threshold at 22 %. As the largest threshold, the relative bias for the effective prison term magnitude must equal at least 55 % to overturn our conclusion.

With the exception of the verdict outcome, these relative bias thresholds seem quite sizable but not outside of any reasonable range.

7. Views from Environmental Law Practice in Flanders

The estimation results reveal several differences in the sanctioning of defendants with a lawyer and those without a lawyer. These findings may reveal two observationally equivalent situations: (1) defendants with or without a lawyer are different, or (2) lawyers make a difference. (Of course, both situations may hold.) In order to gain more insight into these two situations, we collected information on views held by defense lawyers, public prosecutors, and judges working in Flanders.

7.1. Data Collection and Description of Dataset

We designed an online survey in Qualtrics to gain insight into the role of lawyers. This survey included closed- and open-ended questions regarding the selection of clients by lawyers, the difference between defendants with and without legal representation, and the impact of lawyers on criminal proceedings. We contacted 110 practitioners through electronic mail on May 17, 2019 and asked respondents to participate by following a link embedded in the email message.¹² We sent no reminders.

¹² We contacted 61 respondents personally and one respondent forwarded the invitation to a mailing list of some 50 environmental magistrates.

Of the 110 contacted practitioners, 30 followed the survey link, with 26 respondents providing useful information for our analysis.¹³ The final sample consists of 13 lawyers, 3 prosecutors, and 10 judges (7 lower court judges and 3 higher court judges). Sixteen respondents indicated that they deal with environmental cases frequently (8) or very frequently (8).

7.2. Insight Gleaned from Survey Responses

7.2.1. Lawyers' Selection of Clients

From the gathered survey data, we glean insight into the process that lawyers use to select their clients. The thirteen lawyers in our sample are usually directly contacted by new clients, but lawyers also obtain new clients through referral or assignment by their law firms. When asked whether they would agree to represent someone who contacted them regarding an environmental case, four respondents would always agree and the other nine would sometimes do so. The main reason to accept or reject an environmental case is the fit with the lawyer's area of expertise. The main reasons for possibly refusing a case relate to a defendant's attitude. As examples of this factor, respondents offered these concerns:

"a guilty defendant should be willing to voluntarily remediate the damage",

"a guilty person should not strongly dispute his/her guilt",

"a defendant should not disagree without rational arguments", and

"a client should not manifest bad faith".

Two respondents also mentioned that it was important that the case was in line with the values and reputation of the lawyer's firm.

Figure 1 confirms these findings by displaying the importance of several factors in a lawyer's decision to select a new client. Past experience with legislation is the most important factor, followed by the personal characteristics of the client. In third place, the likelihood of winning a case is also important.

¹³ We exclude four responses from the analysis: two respondents only answered three or fewer questions, one respondent merely participated in a civil procedure, and one respondent was only a legal graduate (not a lawyer).

The violated legislation, expected time cost, seriousness of the offense and past experience with the court also play roles a lawyer's decision to accept a case.

Some of these factors are problematic for our reliance on the exogeneity as our identification strategy for exploring the impact of legal counsel, while other factors seem fine. To prove problematic, a factor must influence court decisions (or at least correlate with court decisions), prove important for client selection, and be unobservable (i.e., excluded as a control factor). Our analysis fails to control for the likelihood of winning, expected financial return, and culpability, yet these factors at least correlate with court decisions. No more than six lawyer respondents identify these factors as important. While less than a majority, this presence is still notable. As another meaningful factor, our analysis attempts to control for offense seriousness, but our efforts may be insufficient. This factor surely influences court judgements. Fortunately, only six of the 13 lawyers find this factor important. Past experience with legislation is very important for most lawyers. However, this factor does not speak to the defendant but instead the lawyer. Similarly, past experience with the court is important but speaks to the lawyer. In contrast, client personal characteristics clearly relate to the defendant. A majority of respondents find this factor important for client selection. Fortunately, our analysis controls for this factor at least crudely. We also control for the violated legislation; moreover, only five of the 13 lawyers find this factor important. Lastly, we argue that expected time cost is not correlated with court decisions.

7.2.2. Comparison of Defendants with and without Lawyer

We also use the survey to examine whether court participants perceive defendants with or without lawyer as different. To this end, we presented several statements to the survey respondents. Respondents could agree or disagree with these statements based on a 5-point Likert scale. Figure 2 presents the results. The figure sums the answers 'agree' and 'fully agree' into one group and sums answers 'disagree' and 'fully disagree' into a second group. Figure 2 presents separately the opinions of lawyers,

prosecutors, and judges.

The first statement explicitly speaks to the basic difference. Most respondents (21 out of 26) disagree with the statement that there is no difference between defendants with or without lawyer. The two respondents who agree with the statement were judges, probably reflecting the viewpoint that all defendants are treated equally in their courts. Looking closer at possible perceived differences between defendants, respondents generally agree that better prepared defendants are more likely to hire a lawyer. Regarding the impact of income and education, opinions are more heterogeneous. Approximately the same proportion of lawyers and prosecutors agree or disagree with the statement that respondents with a lawyer are more wealthy or better educated, while slightly more judges agree than disagree with these statements. Half of the respondents (13) are indifferent regarding the statement that defendants with a lawyer are more likely to have Belgian nationality; still a sizeable part of the sample (10) disagree with this statement. Finally, most respondents (17) disagree with the statement that defendants with a lawyer are more likely to be guilty. In response to the open-ended question regarding other differences between defendants with and without lawyers, one judge mentioned that *“defendants without a lawyer are usually prosecuted for less serious crimes, which are more likely to attract less severe penalties”*.

As with lawyers' selection of clients, some of these factors are problematic for our reliance on exogeneity as our identification strategy. To prove problematic, a factor must influence or correlate with court decisions, differ between defendants with and without legal counsel, and not be captured by a control factor. Clearly the likely guilt of a defendant should influence court decisions and our analysis does not control for likely guilt. A strong majority of respondents disagree with the relevant statement. Thus, this factor seems problematic. Similarly, a defendant's preparation and education may correlate with court decisions and our analysis fails to control for these factors. With the exception of judges, a strong majority of court participants agree with the preparation statement. Similarly, a strong majority

of participants, with the exception of judges, agree or disagree with the education statement. These factors may seem problematic. While income could influence court decisions indirectly, we argue that income should play no role conditional on a defendant securing legal counsel. (In other words, income helps a defendant to hire a lawyer, as confirmed by court participant's views, but not otherwise; consequently, we rule out the bribing of judges.) Thus, this factor should not prove problematic. Lastly, we control for Belgian nationality so this factor cannot prove problematic.

7.2.3. Perceived Impact of Lawyer

In order to gain more insight into the role of a lawyer in criminal proceedings, we asked the respondents whether they would recommend persons who face prosecution to secure legal counsel. Most respondents (17, of which 11 are lawyers) would certainly recommend legal counsel, while the remaining (8, of which 2 are lawyers) would probably do so. Respondents mentioned several motivations to support this recommendation:

- environmental legislation is technical and specialized,
- better protection of a respondent's rights,
- main and side issues are not always easy for a defendant to distinguish, and
- defendants usually possess too little knowledge of criminal law (e.g., ignorance of sanctions that they can face).

Some quotes are especially illuminating in this respect. One lawyer stated: *"There are few things as sad as seeing someone try to defend oneself, where you see or feel that important arguments are getting lost."* As another lawyer stated: *"It is (...) a good idea to work with the defendant to ensure that the truth is revealed as accurately as possible and that a correct defense strategy can be selected"*. One judge made the following point: *"Regulation is complex; the lawyer is familiar with the system; he often knows the judge and can assess what is and what is not possible."*

Finally, we asked respondents how they perceive the role of certain mechanisms by which legal representation impacts court decisions (see Table 4). Responses reveal a consensus that lawyers help defendants by offering a better understanding of procedures, as well as the content of cases. Most respondents also agree that lawyers speak the language of the courts and prosecutors and are able to present the case in a more structured manner. However, respondents also indicate that lawyers do not save time for defendants. Most interesting, respondents are less certain about whether legal representation can lower a defendant's expected sanction. Most respondents indicated 'maybe' or 'no' when asked whether defendants with a lawyer have a lower probability of receiving a prison sentence or a higher probability of settlement or acquittal. The same pattern appears when assessing whether defendants with a lawyer face less serious sanctions and lower expected fines. The largest difference in opinion regards the statement that 'having legal representation is a signal that the defendant takes the case seriously'. Seven lawyers and one prosecutor agree with this statement, yet two lawyers and three judges disagree. This contrast seems to indicate that lawyers are more optimistic about their role than judges are. All these differences notwithstanding, one quote by a prosecutor reminds us that general conclusions are difficult to draw: *"One must always take the specific nature of each case into account, which makes it difficult to draw a general line on the likely impact of having or not having the assistance of a lawyer."*

This insight on mechanisms linking legal counsel to court decisions helps to confirm that our empirical results are not spurious. Instead our results surely reflect the influence of these noted mechanisms.

7.3. Concluding Remarks about Flemish Practice

Our assessment of the survey responses reveals some interesting patterns. Firstly, the lawyers in our sample do not automatically take all clients. On the one hand, the fit of the legislation cited in the

case and the lawyer's area of expertise is central. On the other hand, the attitude of the defendant plays an important role in the acceptance decision. Secondly, court participants perceive defendants with and without lawyers as different. Respondents generally agree that better prepared defendants are more likely to hire a lawyer, while opinions are more diverse regarding the impact of income and education. And most respondents disagreed with the statement that defendants with a lawyer are more likely to be guilty. Thirdly, considering the perceived impact of legal representation, respondents mainly see benefits in reducing transaction costs and informational bottlenecks. Lawyers know the legislation and the system so defendants can benefit from the lawyers' expertise, especially in more technical and complex environmental cases. Regarding the possibility of having a positive effect on the probability and magnitude of sanctions, the role of a lawyer seems less straightforward and more dependent on the actual case characteristics.

Most important for our analysis, our assessment of survey responses (1) reveals that defendants with or without a lawyer may differ in only some dimensions not captured by the control factors in our empirical analysis, while many dimensions prove unimportant or are important but captured by control factors, and (2) confirms the role of certain mechanisms by which legal representation impacts court decisions.

8. Summary, Policy Implications, and Future Research

Using data from all environmental criminal cases prosecuted in East and West Flanders between 2003 and 2006, we analyze the effect of legal representation on criminal case outcomes, i.e., court decisions, e.g., prison term. Our empirical findings appear to show that, when defendants who are prosecuted for environmental crimes in Flanders are assisted by legal counsel in court, they experience significantly more beneficial outcomes than defendants without counsel. Represented defendants are much less likely to be convicted, face a significantly lower likelihood of sanction imposition, and receive

lower sanctions. Nevertheless, we acknowledge that the presence of a lawyer may not be exogenous to the studied court decisions. Thus, the identified differences in outcomes may not be attributable solely to the presence of legal counsel due to the influence of unobserved factors on both the decision to hire a lawyer and the court judgments. Moreover, due to the complexity of the legal setting, our results most likely do not generalize to other contexts. Since past studies faced a similar limitation, our study is valuable to investigate the value of legal counsel in the context of environmental crimes in a civil law country.

Of course, the decision to *pay* for a lawyer may not be financially wise. When compared to the hourly fee of a lawyer, our estimation results do not unequivocally support the recommendation for environmental offenders in Flanders to hire a lawyer. Based on the 95 % confidence interval estimated for the legal representation coefficient in the case of fines, we can conclude that hiring a lawyer is either financially imprudent or prudent as long as the lawyer bills no more than 43 hours, which may be reasonable for the majority of cases argued in our sample of criminal prosecution in Flanders. This said, based on the point estimate of the legal representation coefficient, hiring a lawyer generates benefits of 2,863 €. In this case, a lawyer is worth the hourly fee of 100 € as long as no more than 24 hours are billed. This magnitude most likely applies to only a minority of the cases argued in Flanders.

Since lawyers seem to be valuable but expensive, policy makers in Flanders or Belgium could consider promoting their use. For example, creation of an easier procedure to secure access to free (or less expensive) legal counsel could be worthwhile. Some such promotion began after the conviction of the Turkish State by the European Human Rights Court for not providing a suspect with legal counsel prior to or during the first interrogation in the *Salduz* case (EHRM 27/11/2008). This conviction led to a binding arrest for all EU member states including Belgium. From 2012 onwards, all individuals under arrest have the right to legal counsel during their first interview by the police. The government provides

legal counsel at reduced fees (or even for free) to suspects with limited means. Still 30% of eligible suspects waived their right to legal counsel in 2012 (FOD Justitie, 2012). Moreover, this right to legal counsel applies only during the interrogation phase, not during other phases of a legal procedure, such as a court hearing.

As important, while legal representation may be beneficial for individual offenders, it may be detrimental from a societal point of view. The presence of a lawyer may lead to lower than optimal sanctions for environmental crime. Therefore, future research should compare actual imposed sanctions with optimal sanctions based on the extent of environmental harm, the detection probability, and prosecution costs (Polinsky and Shavell, 1979). Further, we recommend that future research compare actual legal costs to the benefits of legal counsel. Lastly, our study estimates only mean effects, yet considerable heterogeneity in the effectiveness of legal representation and lawyer fees surely warrants more detailed analysis.

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Appendix: Legislation included in the Environmental LawForce database

The *Environmental LawForce* database included the case load of the courts for criminal cases where at least one accusation concerned a violation of one of the following parliament acts, cooperation agreements, or associated implementing royal and government ordinances: the Air Pollution Act (1964), Pesticides Act (1969), Surface Water Act (1971), Noise Pollution Act (1973), Flemish Waste Decree (1981), Flemish Groundwater Decree (1984), Flemish Environmental Permitting Decree (1985), Non-ionizing Radiation Act (1985), Flemish Manure Decree (1991), Green Taxes Act (1993), Ionizing Radiation Act (1994), Ecolabel Act (1994), Flemish Environmental Policy Decree (1995), Flemish Soil Clean-up Decree (1995), Packaging Waste Cooperation Agreement (1996), Product Standards Act (1998), Marine Environment Act (1999), and Seveso II Cooperation Agreement (1999). The data collection also included violations of exploitation permits based on the Labour Safety Order (1946). During the period covered by the database – 2003 to 2006 – a large number of firms in Flanders still operated under these labour safety permits, which preceded the environmental permits issued under the Flemish Environmental Permitting Decree (1985).

Figure 1
Factors Potentially Influencing Lawyers' Selection of New Clients

Figure 2
Court Participants' Perceived Differences between
Defendants with Legal Counsel and Defendants without Legal Counsel

Table 1**Case Outcomes**

		Full sample (N=1,330)		Professional Individuals (N=585)		Private Individuals (N=745)	
		Guilty	Acquitted	Guilty	Acquitted	Guilty	Acquitted
		1173	157	514	71	659	86
Fine	Y	999		412		587	
	N	174		102		72	
Forfeiture of gains ^a	Y	43		37		6	
	N	1130		477		653	
Monetary sanction (fine and/or forfeiture)	Y	1002		414		588	
	N	171		100		71	
Prison sentence	Y	103		53		50	
	N	1070		461		609	
Problem solving sanction ^b	Y	220		91		129	
	N	953		423		530	

“Y” indicates the imposition of a particular judicial sanction.

“N” indicates the absence of a particular judicial sanction.

^a Forfeiture of gains involves the requirement for a guilty defendant to pay the government funds equal to the gains secured by violating environmental laws, i.e., forfeiture of illegally acquired benefits.

^b Problem solving sanctions include waste removal orders, injunctions to cease a business operation for safety reasons, and other remedial actions.

Table 2

Probit Estimation of Binary Outcomes – Key Results
[p-values shown in bold where $p \leq 0.10$]

Model 1: controls = basic

Model 2: controls = basic + culpability

Model 3: controls = basic + culpability + damages

Model 4: controls = basic + culpability + damages + legal adjustments

Model 5: controls = basic + culpability + damages + legal adjustments + legal mechanics

Model 6: controls = basic + culpability + damages + legal adjustments + legal mechanics +
defendant characteristics

Model	Lawyer Presence: Probit Coefficient		Estimation Summary		N
	Magnitude	p-value	Wald Test of Zero Slopes: p-value	Pseudo R ²	
Guilty Verdict ^a					
1	-0.3153	0.008	0.000	0.0619	1,330
2	-0.3308	0.046	0.000	0.3417	1,316
3	-0.2857	0.049	0.000	0.3868	1,296
4	-0.2721	0.063	0.000	0.4748	1,296
5	-0.2336	0.119	0.000	0.5096	1,296
6	-0.2865	0.066	0.000	0.5090	1,250
Fine Imposition ^b					
1	-0.4996	0.000	0.000	0.0834	1,173
2	-0.6116	0.000	0.000	0.1403	1,160
3	-0.6278	0.000	0.000	0.1633	1,140
4	-0.5753	0.000	0.000	0.2082	1,140
5	-0.5789	0.000	0.000	0.2106	1,140
6	-0.5911	0.000	0.000	0.2104	1,099
Monetary Sanction Imposition ^b					
1	-0.5039	0.000	0.000	0.0822	1,173
2	-0.6197	0.000	0.000	0.1398	1,160
3	-0.6288	0.000	0.000	0.1629	1,140
4	-0.5711	0.000	0.000	0.2114	1,140
5	-0.5724	0.000	0.000	0.2145	1,140
6	-0.5894	0.000	0.000	0.2146	1,099

Prison Sentence ^c					
1	-0.1626	0.178	0.014	0.0675	1,173
2	-0.3340	0.011	0.000	0.1509	1,160
3	-0.4303	0.004	0.000	0.2160	1,160
4	-0.3495	0.025	0.000	0.2747	1,160
5	-0.3515	0.023	0.000	0.2825	1,160
6	-0.3563	0.027	0.000	0.2910	1,119

Problem Solving Sanction Imposition ^d					
1	0.0963	0.394	0.000	0.1220	1,048
2	-0.0261	0.823	0.000	0.1549	1,036
3	-0.0946	0.468	0.000	0.2475	1,036
4	-0.0308	0.814	0.000	0.2661	1,036
5	-0.0267	0.841	0.000	0.2692	1,036
6	-0.0209	0.876	0.000	0.2784	995

^a The sample for Model 2 excludes 14 observations for which culpability, e.g., count of proven accusations, data are missing. The samples for Models 3, 4, 5, and 6 exclude 20 observations for which the public health damage indicator equals 1 because this value predicts success perfectly; estimation of Models 3, 4, 5, and 6 excludes this regressor. The sample for Model 6 excludes 46 observations for which defendant personal characteristics, e.g., gender, data are missing.

^b The sample for Models 2, 3, 4, 5, and 6 excludes 13 observations for which culpability, e.g., count of proven accusations, data are missing. The samples for Models 3, 4, 5, and 6 exclude 20 observations for which the public health damage indicator equals 1 because this value predicts success perfectly; estimation of Models 3, 4, 5, and 6 excludes this regressor. The sample for Model 6 excludes 41 observations for which defendant personal characteristics, e.g., gender, data are missing.

^c The sample for Models 2, 3, 4, 5, and 6 excludes 13 observations for which culpability, e.g., count of proven accusations, data are missing. The sample for Model 6 excludes 41 observations for which defendant personal characteristics, e.g., gender, data are missing.

^d The sample for Models 1 through 6 exclude 125 observations for which the Brugge court indicator equals 1 because this value predicts failure perfectly; estimation of Models 1 through 6 excludes this regressor. The sample for Models 2, 3, 4, 5, and 6 additionally excludes 12 observations for which culpability, e.g., count of proven accusations, data are missing. The sample for Model 6 excludes 41 observations for which defendant personal characteristics, e.g., gender, data are missing.

Table 3

Tobit Estimation of Bottom-Censored Outcomes – Key Results

[p-values shown in bold where $p \leq 0.10$]

Model 1: controls = basic

Model 2: controls = basic + culpability

Model 3: controls = basic + culpability + damages

Model 4: controls = basic + culpability + damages + legal adjustments

Model 5: controls = basic + culpability + damages + legal adjustments + legal mechanics

Model 6: controls = basic + culpability + damages + legal adjustments + legal mechanics + defendant characteristics

Model	Lawyer Presence: Coefficient		Estimation Summary		N ^a	Bottom Censored at Zero: # of Obs
	Magnitude	p-value	F Test of Zero Slopes: p-value	Pseudo R ²		
Fine: Effective Magnitude ^b						
1	- 781.72	0.222	0.004	0.0024	1,171	287
2	- 2,797.15	0.017	0.001	0.0087	1,158	285
3	- 2,921.61	0.004	0.006	0.0104	1,158	285
4	- 2,282.23	0.012	0.000	0.0114	1,158	285
5	- 2,533.99	0.012	0.001	0.0119	1,158	285
6	- 2,863.00	0.012	0.003	0.0123	1,117	281
Fine: Suspended Magnitude						
1	5,315.72	0.011	0.860	0.0101	1,173	776
2	3,616.57	0.010	0.916	0.0154	1,160	770
3	4,337.58	0.008	0.966	0.0187	1,160	770
4	4,011.39	0.012	0.946	0.0196	1,160	770
5	3,858.75	0.012	0.982	0.0203	1,160	770
6	2,993.46	0.033	0.988	0.0209	1,119	738
Monetary Sanction: Effective Magnitude ^b						
1	- 486.65	0.593	0.005	0.0028	1,171	281
2	- 3,006.42	0.012	0.000	0.0100	1,158	279
3	- 2,930.81	0.007	0.014	0.0128	1,158	279
4	- 2,053.56	0.045	0.001	0.0140	1,158	279
5	- 2,446.17	0.024	0.002	0.0148	1,158	279
6	- 2,694.97	0.025	0.006	0.0152	1,117	275

Monetary Sanction: Suspended Magnitude ^b						
1	5,321.90	0.011	0.862	0.0101	1,171	774
2	3,606.64	0.010	0.917	0.0155	1,158	768
3	4,306.27	0.008	0.964	0.0189	1,158	768
4	3,988.51	0.012	0.943	0.0198	1,158	768
5	3,840.75	0.012	0.980	0.0206	1,158	768
6	2,965.35	0.034	0.988	0.0211	1,117	734

Prison Term: Effective Magnitude						
1	- 5.503	0.005	0.001	0.0781	1,173	1,137
2	- 7.310	0.000	0.000	0.1355	1,160	1,125
3	- 7.624	0.000	0.000	0.1873	1,160	1,125
4	- 6.084	0.001	0.000	0.2355	1,160	1,125
5	- 6.043	0.001	0.000	0.2729	1,160	1,125
6	- 6.677	0.000	0.000	0.2796	1,119	1,084
Prison Term: Suspended Magnitude						
1	0.878	0.387	0.170	0.0492	1,173	1,103
2	- 0.414	0.658	0.000	0.1070	1,160	1,091
3	- 0.651	0.489	0.000	0.1420	1,160	1,091
4	- 0.341	0.717	0.000	0.1678	1,160	1,091
5	- 0.452	0.620	0.000	0.1707	1,160	1,091
6	- 0.427	0.655	0.000	0.1772	1,119	1,051

^a The sample for Models 2, 3, 4, 5, and 6 excludes 13 observations for which culpability, e.g., count of proven accusations, data are missing. The sample for Model 6 additionally excludes 41 observations for which defendant personal characteristics, e.g., gender, data are missing.

^b The sample for estimation of fine magnitudes and monetary sanction magnitudes excludes 2 observations for which fine magnitude data are missing.

Table 4
Judges' Perceived Impacts of Legal Representation on Court Decisions:
Survey Respondents' Assessment of whether Factors are Important

	Certainly Yes	Maybe	Certainly No	Not Able to Assess
Better understanding of procedure	23	2	0	0
Better understanding of case content	20	5	0	0
Lawyer speaks the language of the prosecutor, judge, fining official...	17	5	1	1
Case is presented in a more structured way	13	8	2	2
It's a signal that the defendant takes the case seriously	8	9	5	3
Lower probability of prison sentence	5	15	3	2
Less serious sanctions	4	17	2	2
Higher probability of settlement	4	14	3	3
Higher probability of acquittal	2	18	3	2
Lower expected fine	2	17	4	2
Case is finalized more quickly	1	8	11	5
Higher probability of dismissal	1	7	9	7

Appendix Table A-1

Probit Estimation of Binary Outcomes – Full Results for Model 6

Model 6: controls = basic + culpability + damages + legal adjustments + legal mechanics + defendant characteristics

Appendix Table A-1.a. Guilty Verdict, Fine Imposition, and Monetary Sanction Imposition

Regressor	Guilty Verdict		Fine Imposition		Monetary Sanction	
	Coeff	p-val	Coeff	p-val	Coeff	p-val
Lawyer Present (0,1) ^a	-0.2866	0.066	-0.5911	0.000	-0.5894	0.000
Professional Defendant (0,1) ^b	-1.1521	0.000	-0.6335	0.002	-0.6209	0.003
Year 2004 (0,1) ^c	0.1669	0.405	-0.2740	0.119	-0.2443	0.163
Year 2005 (0,1) ^c	0.2581	0.175	-0.2530	0.140	-0.2171	0.205
Year 2006 (0,1) ^c	0.3524	0.118	-0.3364	0.054	-0.2737	0.117
Quarter 2 (0,1) ^d	-0.1381	0.491	0.0333	0.832	-0.0066	0.966
Quarter 3 (0,1) ^d	-0.2511	0.306	0.1323	0.494	0.1004	0.604
Quarter 4 (0,1) ^d	0.3155	0.100	0.0045	0.976	-0.0207	0.889
Brugge Court (0,1) ^e	-0.1097	0.690	-0.1417	0.540	-0.1813	0.434
Ieper or Veurne Courts (0,1) ^e	-0.4411	0.049	-0.1190	0.568	-0.0601	0.776
Oudenaarde Court (0,1) ^e	0.0108	0.976	0.0196	0.929	0.0026	0.991
Kortrijk Court (0,1) ^e	0.9128	0.014	0.3209	0.201	0.3084	0.220
Dendermonde Court (0,1) ^e	0.0529	0.788	0.3655	0.017	0.3587	0.020
Agricultural Sector (0,1) ^f	0.9519	0.003	0.6213	0.013	0.6288	0.013
Manufacturing or Electricity Sectors (0,1) ^f	1.7095	0.000	0.7398	0.010	0.7433	0.010
Construction Sector (0,1) ^f	0.9502	0.026	0.1419	0.634	0.1389	0.645
Trade Sector (0,1) ^f	1.5696	0.000	0.5014	0.065	0.5441	0.048
Accommodation or Food Sectors (0,1) ^f	2.0573	0.000	1.0552	0.000	1.0444	0.000
Proven Accusations (count)	1.3866	0.000	0.1426	0.074	0.1592	0.052
Average Length of Offense Time per Accusation (days)	-0.0002	0.208	0.0000	0.757	0.0000	0.831
Offense Done for Gain (0,1) ^g	1.9977	0.008	0.9792	0.001	0.9573	0.002
Offense Done Willingly with Purpose (0,1) ^h	0.0379	0.912	-0.0776	0.706	-0.0621	0.767
Civil Party Presence at Verdict Level (0,1) ⁱ	0.1651	0.462	-0.0339	0.851	-0.0621	0.732
Damage: Individual Health (0,1) ^j	1.2103	0.007	0.3454	0.463	0.3360	0.475
Damage: Public Health (0,1) ^j	n/a	n/a	n/a	n/a	n/a	n/a
Damage: Nature in General (0,1) ^j	-0.0985	0.829	-0.1186	0.713	-0.1554	0.636
Pollution: Waste (0,1) ^k	-0.5263	0.041	0.3273	0.055	0.3073	0.076
Pollution: Soil or Groundwater (0,1) ^k	-0.7672	0.007	0.1715	0.419	0.1465	0.497
Pollution: Surface Water (0,1) ^k	-0.6685	0.022	-0.2304	0.233	-0.2164	0.271
Pollution: Noise (0,1) ^k	-0.4256	0.224	-0.0482	0.830	-0.0541	0.811
Pollution: No Harm (0,1) ^k	-0.1244	0.726	-0.4759	0.046	-0.5149	0.032
Legal Violation: Permit in General (0,1) ^l	-0.9276	0.000	0.0527	0.757	-0.0099	0.954
Previous Conviction (0,1) ^m	1.8988	0.000	0.9152	0.000	0.9503	0.000
Priority Status (0,1) ⁿ	-0.5933	0.035	0.2963	0.108	0.3274	0.079
Clean-up, Steps to Limit Damage, or Compliance Regained (0,1) ^o	1.1847	0.000	-0.2779	0.044	-0.3116	0.026
Discovery Route: Routine (0,1) ^p	0.2900	0.412	-0.0929	0.662	-0.0944	0.659
Discovery Route: Complaint (0,1) ^p	-1.0672	0.000	0.2152	0.282	0.2030	0.313
Discovery Route: Police (0,1) ^p	-0.3982	0.120	0.1204	0.665	0.2613	0.371
Discovery Route: Other (0,1) ^p	0.0754	0.812	0.0102	0.965	0.0629	0.788

Defendant Age (years)	-0.0010	0.855	0.0043	0.308	0.0051	0.236
Defendant Gender: male (0,1) ^a	-0.0857	0.545	0.0002	0.999	0.0146	0.914
Defendant Citizenship: Belgian (0,1) ^r	0.3830	0.045	-0.0303	0.900	0.0004	0.999

Note: Estimation also includes an intercept term.

^a Omitted category: lawyer absent.

^b Omitted category: private individual defendant.

^c Omitted category: year of 2003.

^d Omitted category: quarter 1.

^e Omitted category: Gent Court.

^f Omitted category: other sectors (including water supply, transport and storage, service, arts and recreation, and unknown or missing).

^g Omitted category: offense not done for gain.

^h Omitted category: offense not done willingly with purpose.

ⁱ Omitted category: civil party absent at the verdict level.

^j Omitted category: absence of particular damage type.

^k Omitted category: absence of particular pollution type.

^l Omitted category: absence of permit in general violation (which may include a waste violation, noise violation, or manure violation).

^m Omitted category: no previous conviction.

ⁿ Omitted category: lack of priority status.

^o Omitted category: not relevant or no information available.

^p Omitted category: absence of particular discovery route (which may include the case of no information about the discovery route).

^q Omitted category: female defendant.

^r Omitted category: foreigner within Belgium.

Appendix Table A-1.b. Prison Sentence Imposition and Problem Solving Penalty Imposition

Regressor	Prison Sentence		Problem Solving Sanction	
	Coeff	p-value	Coeff	p-value
Lawyer Present (0,1) ^a	-0.3563	0.027	-0.0209	0.876
Professional Defendant (0,1) ^b	-0.2574	0.249	-0.0381	0.871
Year 2004 (0,1) ^c	-0.1611	0.446	0.2358	0.250
Year 2005 (0,1) ^c	-0.2245	0.250	0.3586	0.075
Year 2006 (0,1) ^c	-0.6288	0.003	0.4582	0.018
Quarter 2 (0,1) ^d	0.0632	0.715	0.1087	0.524
Quarter 3 (0,1) ^d	0.1631	0.551	0.6212	0.010
Quarter 4 (0,1) ^d	-0.2876	0.111	0.3227	0.065
Brugge Court (0,1) ^e	-0.1912	0.518	n/a	n/a
Ieper or Veurne Courts (0,1) ^e	-0.0551	0.877	-0.7051	0.033
Oudenaarde Court (0,1) ^e	0.2662	0.318	0.2335	0.344
Kortrijk Court (0,1) ^e	-0.4871	0.248	-0.1394	0.685
Dendermonde Court (0,1) ^e	-0.0458	0.803	0.8129	0.000
Agricultural Sector (0,1) ^f	0.2058	0.523	0.4307	0.168
Manufacturing or Electricity Sectors (0,1) ^f	0.3177	0.364	0.5168	0.175
Construction Sector (0,1) ^f	0.1668	0.600	0.1705	0.600
Trade Sector (0,1) ^f	-0.2781	0.464	0.2904	0.288
Accommodation or Food Sectors (0,1) ^f	0.6965	0.084	0.5178	0.158
Proven Accusations (count)	0.1242	0.099	-0.0623	0.331
Average Length of Offense Time per Accusation (days)	0.0001	0.449	0.0003	0.008
Offense Done for Gain (0,1) ^g	0.3347	0.084	0.3178	0.092
Offense Done Willingly with Purpose (0,1) ^h	0.1672	0.420	-0.0156	0.936
Civil Party Presence at Verdict Level (0,1) ⁱ	0.2499	0.221	0.3752	0.041
Damage: Individual Health (0,1) ^j	0.3605	0.285	0.9426	0.005
Damage: Public Health (0,1) ^j	0.9340	0.055	-1.2929	0.063
Damage: Nature in General (0,1) ^j	0.1833	0.542	0.2254	0.455
Pollution: Waste (0,1) ^k	0.3075	0.133	1.0241	0.000
Pollution: Soil or Groundwater (0,1) ^k	-0.1225	0.603	0.1686	0.517
Pollution: Surface Water (0,1) ^k	0.0907	0.715	-0.4872	0.109
Pollution: Noise (0,1) ^k	-0.2309	0.569	-0.9190	0.008
Pollution: No Harm (0,1) ^k	-0.3580	0.319	-0.7227	0.074
Legal Violation: Permit in General (0,1) ^l	0.2827	0.174	0.7574	0.000
Previous Conviction (0,1) ^m	0.5245	0.000	0.1181	0.375
Priority Status (0,1) ⁿ	0.6969	0.000	-0.0586	0.736
Clean-up, Steps to Limit Damage, Compliance Regained (0,1) ^o	-0.5013	0.023	-0.6447	0.000
Discovery Route: Routine (0,1) ^p	0.1693	0.488	-0.0610	0.802
Discovery Route: Complaint (0,1) ^p	0.0543	0.797	0.0080	0.965
Discovery Route: Police (0,1) ^p	-0.2487	0.307	0.3686	0.128
Discovery Route: Other (0,1) ^p	0.4884	0.020	0.0429	0.874
Defendant Age (years)	-0.0089	0.057	0.0005	0.904
Defendant Gender: male (0,1) ^q	-0.0872	0.611	-0.1313	0.282
Defendant Citizenship: Belgian (0,1) ^r	0.1266	0.540	0.3407	0.059

Note: Estimation also includes an intercept term.

^a Omitted category: lawyer absent.

^b Omitted category: private individual defendant.

^c Omitted category: year of 2003.

^d Omitted category: quarter 1.

^e Omitted category: Gent Court.

^f Omitted category: other sectors (including water supply, transport and storage, service, arts and recreation, and unknown or missing).

^g Omitted category: offense not done for gain.

^h Omitted category: offense not done willingly with purpose.

ⁱ Omitted category: civil party absent at the verdict level.

^j Omitted category: absence of particular damage type.

^k Omitted category: absence of particular pollution type.

^l Omitted category: absence of permit in general violation (which may include a waste violation, noise violation, or manure violation).

^m Omitted category: no previous conviction.

ⁿ Omitted category: lack of priority status.

^o Omitted category: not relevant or no information available.

^p Omitted category: absence of particular discovery route (which may include the case of no information about the discovery route).

^q Omitted category: female defendant.

^r Omitted category: foreigner within Belgium.

Appendix Table A-2

Tobit Estimation of Bottom-Censored Outcomes – Full Results for Model 6

Model 6: controls = basic + culpability + damages + legal adjustments + legal mechanics + defendant characteristics

Appendix Table A-2.a. Fine Magnitudes: Effective and Suspended

Regressor	Fine: Effective		Fine: Suspended	
	Coeff	p-val	Coeff	p-val
Lawyer Present (0,1) ^a	-2,863.00	0.012	2,993.46	0.033
Professional Defendant (0,1) ^b	-5,743.32	0.045	-2,364.90	0.358
Year 2004 (0,1) ^c	-1,743.08	0.130	-1,505.60	0.405
Year 2005 (0,1) ^c	1,298.43	0.437	1,483.75	0.427
Year 2006 (0,1) ^c	-2,342.18	0.053	-2,193.04	0.232
Quarter 2 (0,1) ^d	-377.82	0.835	-875.89	0.672
Quarter 3 (0,1) ^d	-724.89	0.636	-76.17	0.970
Quarter 4 (0,1) ^d	126.78	0.923	77.31	0.958
Brugge Court (0,1) ^e	-5,417.54	0.018	-4,893.93	0.106
Ieper or Veurne Courts (0,1) ^e	-678.03	0.633	-5,024.32	0.075
Oudenaarde Court (0,1) ^e	72.43	0.968	-6,997.26	0.016
Kortrijk Court (0,1) ^e	2,342.84	0.355	4,460.69	0.187
Dendermonde Court (0,1) ^e	2,607.42	0.194	3,063.71	0.167
Agricultural Sector (0,1) ^f	8,441.09	0.115	14,533.35	0.029
Manufacturing or Electricity Sectors (0,1) ^f	1,870.85	0.410	6,713.59	0.044
Construction Sector (0,1) ^f	2,584.34	0.475	2,060.08	0.454
Trade Sector (0,1) ^f	3,488.32	0.160	2,468.89	0.416
Accommodation or Food Sectors (0,1) ^f	5,588.36	0.122	8,837.68	0.064
Proven Accusations (count)	2,222.65	0.095	2,183.44	0.110
Average Length of Offense Time per Accusation (days)	0.82	0.301	2.03	0.079
Offense Done for Gain (0,1) ^g	8,519.86	0.002	3,391.98	0.114
Offense Done Willingly with Purpose (0,1) ^h	3,699.64	0.220	6,535.24	0.065
Civil Party Presence at Verdict Level (0,1) ⁱ	2,608.81	0.272	-329.72	0.900
Damage: Individual Health (0,1) ^j	-1,268.00	0.737	-3,551.19	0.353
Damage: Public Health (0,1) ^j	-2,819.97	0.277	2,176.18	0.648
Damage: Nature in General (0,1) ^j	2,716.54	0.506	-3,516.02	0.322
Pollution: Waste (0,1) ^k	6,522.52	0.075	5,898.85	0.071
Pollution: Soil or Groundwater (0,1) ^k	4,662.49	0.222	7,272.93	0.068
Pollution: Surface Water (0,1) ^k	5,087.40	0.112	1,576.20	0.604
Pollution: Noise (0,1) ^k	5,514.78	0.078	838.43	0.778
Pollution: No Harm (0,1) ^k	728.20	0.919	-1,560.43	0.770
Legal Violation: Permit in General (0,1) ^l	2,852.90	0.144	-3,811.02	0.064
Previous Conviction (0,1) ^m	3,131.16	0.014	-2,906.85	0.130
Priority Status (0,1) ⁿ	1,701.70	0.221	2,646.18	0.170
Clean-up, Steps to Limit Damage, Compliance Regained (0,1) ^o	-4,900.00	0.025	2,243.92	0.107
Discovery Route: Routine (0,1) ^p	1,654.29	0.636	2,047.99	0.521
Discovery Route: Complaint (0,1) ^p	4,165.57	0.147	2,141.68	0.453
Discovery Route: Police (0,1) ^p	196.19	0.959	3,097.16	0.395
Discovery Route: Other (0,1) ^p	-2,871.98	0.226	-3,755.76	0.204

Defendant Age (years)	70.78	0.086	81.98	0.118
Defendant Gender: male (0,1) ^a	1,063.42	0.229	-2,326.49	0.109
Defendant Citizenship: Belgian (0,1) ^r	-502.74	0.622	3,682.15	0.098

Note: Estimation also includes an intercept term.

^a Omitted category: lawyer absent.

^b Omitted category: private individual defendant.

^c Omitted category: year of 2003.

^d Omitted category: quarter 1.

^e Omitted category: Gent Court.

^f Omitted category: other sectors (including water supply, transport and storage, service, arts and recreation, and unknown or missing).

^g Omitted category: offense not done for gain.

^h Omitted category: offense not done willingly with purpose.

ⁱ Omitted category: civil party absent at the verdict level.

^j Omitted category: absence of particular damage type.

^k Omitted category: absence of particular pollution type.

^l Omitted category: absence of permit in general violation (which may include a waste violation, noise violation, or manure violation).

^m Omitted category: no previous conviction.

ⁿ Omitted category: lack of priority status.

^o Omitted category: not relevant or no information available.

^p Omitted category: absence of particular discovery route (which may include the case of no information about the discovery route).

^q Omitted category: female defendant.

^r Omitted category: foreigner within Belgium.

Appendix Table A-2.b. Monetary Sanction Magnitudes: Effective and Suspended

Regressor	Monetary Sanction: Effective		Monetary Sanction: Suspended	
	Coeff	p-val	Coeff	p-val
Lawyer Present (0,1) ^a	-2,694.97	0.025	2,965.35	0.034
Professional Defendant (0,1) ^b	-9,056.23	0.038	-2,561.41	0.329
Year 2004 (0,1) ^c	-4,328.29	0.090	-1,478.89	0.413
Year 2005 (0,1) ^c	-1,182.30	0.687	1,441.63	0.438
Year 2006 (0,1) ^c	-5,553.32	0.079	-2,015.16	0.259
Quarter 2 (0,1) ^d	1,127.95	0.622	-1,066.21	0.612
Quarter 3 (0,1) ^d	452.51	0.840	-201.70	0.920
Quarter 4 (0,1) ^d	-104.91	0.943	-78.85	0.958
Brugge Court (0,1) ^e	-10,134.09	0.005	-4,867.40	0.107
Ieper or Veurne Courts (0,1) ^e	-74.69	0.969	-5,078.59	0.075
Oudenaarde Court (0,1) ^e	-1,872.89	0.417	-6,957.20	0.017
Kortrijk Court (0,1) ^e	1,798.30	0.525	4,498.57	0.184
Dendermonde Court (0,1) ^e	2,743.46	0.218	3,270.78	0.151
Agricultural Sector (0,1) ^f	11,114.47	0.053	14,545.94	0.028
Manufacturing or Electricity Sectors (0,1) ^f	14,842.10	0.141	6,588.47	0.046
Construction Sector (0,1) ^f	4,215.17	0.331	2,059.59	0.452
Trade Sector (0,1) ^f	6,647.92	0.090	2,446.76	0.421
Accommodation or Food Sectors (0,1) ^f	9,942.88	0.053	8,929.78	0.063
Proven Accusations (count)	4,643.45	0.056	2,095.70	0.114
Average Length of Offense Time per Accusation (days)	2.23	0.142	2.02	0.079
Offense Done for Gain (0,1) ^g	7,710.57	0.008	3,730.91	0.092
Offense Done Willingly with Purpose (0,1) ^h	1,326.67	0.727	6,744.50	0.061
Civil Party Presence at Verdict Level (0,1) ⁱ	6,440.92	0.110	-507.94	0.845
Damage: Individual Health (0,1) ^j	-1,467.14	0.703	-3,408.64	0.369
Damage: Public Health (0,1) ^j	-3,827.82	0.243	2,184.45	0.645
Damage: Nature in General (0,1) ^j	4,018.07	0.332	-3,611.26	0.313
Pollution: Waste (0,1) ^k	9,499.85	0.021	5,989.84	0.068
Pollution: Soil or Groundwater (0,1) ^k	4,873.07	0.292	7,870.21	0.059
Pollution: Surface Water (0,1) ^k	10,757.70	0.033	2,277.94	0.476
Pollution: Noise (0,1) ^k	6,169.10	0.075	906.16	0.761
Pollution: No Harm (0,1) ^k	-2,054.04	0.786	-1,513.14	0.775
Legal Violation: Permit in General (0,1) ^l	1,080.77	0.675	-3,508.41	0.074
Previous Conviction (0,1) ^m	4,209.59	0.002	-2,903.51	0.131
Priority Status (0,1) ⁿ	451.45	0.845	2,368.99	0.207
Clean-up, Steps to Limit Damage, Compliance Regained (0,1) ^o	-7,829.24	0.005	2,183.25	0.116
Discovery Route: Routine (0,1) ^p	7,476.15	0.141	1,907.01	0.544
Discovery Route: Complaint (0,1) ^p	4,316.47	0.146	2,135.79	0.453
Discovery Route: Police (0,1) ^p	408.66	0.914	3,498.27	0.346
Discovery Route: Other (0,1) ^p	-1,658.42	0.521	-3,823.32	0.198
Defendant Age (years)	73.66	0.099	78.89	0.124
Defendant Gender: male (0,1) ^q	2,053.59	0.155	-2,446.56	0.097
Defendant Citizenship: Belgian (0,1) ^r	-527.35	0.678	3,773.59	0.093

Note: Estimation also includes an intercept term.

^a Omitted category: lawyer absent.

^b Omitted category: private individual defendant.

^c Omitted category: year of 2003.

^d Omitted category: quarter 1.

^e Omitted category: Gent Court.

^f Omitted category: other sectors (including water supply, transport and storage, service, arts and recreation, and unknown or missing).

^g Omitted category: offense not done for gain.

^h Omitted category: offense not done willingly with purpose.

ⁱ Omitted category: civil party absent at the verdict level.

^j Omitted category: absence of particular damage type.

^k Omitted category: absence of particular pollution type.

^l Omitted category: absence of permit in general violation (which may include a waste violation, noise violation, or manure violation).

^m Omitted category: no previous conviction.

ⁿ Omitted category: lack of priority status.

^o Omitted category: not relevant or no information available.

^p Omitted category: absence of particular discovery route (which may include the case of no information about the discovery route).

^q Omitted category: female defendant.

^r Omitted category: foreigner within Belgium.

Appendix Table A-2.c. Prison Terms: Effective and Suspended

Regressor	Prison Term: Effective		Prison Term: Suspended	
	Coeff	p-value	Coeff	p-value
Lawyer Present (0,1) ^a	-6.677	0.000	-0.427	0.655
Professional Defendant (0,1) ^b	-4.108	0.072	-2.453	0.090
Year 2004 (0,1) ^c	-5.862	0.007	0.255	0.839
Year 2005 (0,1) ^c	-1.914	0.330	-0.875	0.441
Year 2006 (0,1) ^c	-4.469	0.052	-3.341	0.009
Quarter 2 (0,1) ^d	-0.984	0.616	0.398	0.706
Quarter 3 (0,1) ^d	3.244	0.227	-1.322	0.464
Quarter 4 (0,1) ^d	-2.257	0.242	-1.502	0.195
Brugge Court (0,1) ^e	-4.335	0.091	-0.242	0.909
Ieper or Veurne Courts (0,1) ^e	-2.282	0.564	0.789	0.748
Oudenaarde Court (0,1) ^e	-3.949	0.240	2.565	0.115
Kortrijk Court (0,1) ^e	-39.883	.	-0.957	0.710
Dendermonde Court (0,1) ^e	-2.716	0.124	0.913	0.438
Agricultural Sector (0,1) ^f	-2.393	0.456	3.876	0.037
Manufacturing or Electricity Sectors (0,1) ^f	-46.846	.	4.266	0.038
Construction Sector (0,1) ^f	2.481	0.409	1.940	0.304
Trade Sector (0,1) ^f	2.884	0.244	-1.738	0.556
Accommodation or Food Sectors (0,1) ^f	-0.870	0.842	5.072	0.018
Proven Accusations (count)	0.245	0.689	0.903	0.032
Average Length of Offense Time per Accusation (days)	-0.003	0.037	0.001	0.113
Offense Done for Gain (0,1) ^g	2.773	0.171	1.862	0.154
Offense Done Willingly with Purpose (0,1) ^h	2.655	0.081	0.593	0.633
Civil Party Presence at Verdict Level (0,1) ⁱ	2.866	0.104	1.536	0.199
Damage: Individual Health (0,1) ^j	0.339	0.916	0.552	0.759
Damage: Public Health (0,1) ^j	-1.181	0.777	4.653	0.042
Damage: Nature in General (0,1) ^j	6.712	0.010	-0.413	0.821
Pollution: Waste (0,1) ^k	5.719	0.069	1.747	0.148
Pollution: Soil or Groundwater (0,1) ^k	3.764	0.157	-1.159	0.388
Pollution: Surface Water (0,1) ^k	-2.252	0.388	2.023	0.159
Pollution: Noise (0,1) ^k	4.234	0.353	-0.521	0.810
Pollution: No Harm (0,1) ^k	-4.591	0.235	-0.535	0.803
Legal Violation: Permit in General (0,1) ^l	4.805	0.036	0.941	0.440
Previous Conviction (0,1) ^m	5.561	0.000	1.529	0.103
Priority Status (0,1) ⁿ	4.487	0.006	3.998	0.000
Clean-up, Steps to Limit Damage, Compliance Regained (0,1) ^o	-3.570	0.113	-2.456	0.069
Discovery Route: Routine (0,1) ^p	6.651	0.000	0.903	0.563
Discovery Route: Complaint (0,1) ^p	-6.014	0.011	2.064	0.069
Discovery Route: Police (0,1) ^p	-1.939	0.325	-1.083	0.517
Discovery Route: Other (0,1) ^p	5.708	0.002	0.471	0.771
Defendant Age (years)	0.071	0.107	-0.062	0.057
Defendant Gender: male (0,1) ^q	3.015	0.277	-1.262	0.205
Defendant Citizenship: Belgian (0,1) ^r	2.005	0.348	1.087	0.465

Note: Estimation also includes an intercept term.

^a Omitted category: lawyer absent.

^b Omitted category: private individual defendant.

^c Omitted category: year of 2003.

^d Omitted category: quarter 1.

^e Omitted category: Gent Court.

^f Omitted category: other sectors (including water supply, transport and storage, service, arts and recreation, and unknown or missing).

^g Omitted category: offense not done for gain.

^h Omitted category: offense not done willingly with purpose.

ⁱ Omitted category: civil party absent at the verdict level.

^j Omitted category: absence of particular damage type.

^k Omitted category: absence of particular pollution type.

^l Omitted category: absence of permit in general violation (which may include a waste violation, noise violation, or manure violation).

^m Omitted category: no previous conviction.

ⁿ Omitted category: lack of priority status.

^o Omitted category: not relevant or no information available.

^p Omitted category: absence of particular discovery route (which may include the case of no information about the discovery route).

^q Omitted category: female defendant.

^r Omitted category: foreigner within Belgium.