The Value of Hiring a Lawyer

Sandra Rousseau
Faculty of Economics and Business
KU Leuven

Dietrich Earnhart
Department of Economics
University of Kansas

February 15, 2016

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 environmental criminal cases in Flanders (Belgium) between 2003 and 2006. Our results convincingly 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. Compared to the costs of hiring a lawyer, these benefits 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

Contact Information: Sandra Rousseau, CEDON, Faculty of Business and Economics, KU Leuven, Warmoesberg 26, B-1000 Brussel, Belgium, sandra.rousseau@kuleuven.be

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). In the US, the total caseload in all state courts amounted to 106 million in 2009 (LaFountain et al., 2011). Given the serious consequences of prosecution, it seems prudent to secure a lawyer. 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.

Surprisingly little empirical research focuses on the related questions of whether or not it is prudent to hire a lawyer and what is the effect of representation on legal outcomes. Most of these empirical studies focus on legal representation in specialized courts or informal proceedings, such as juvenile courts (Clarke & Koch, 1980; Feld, 1989) and administrative tribunals (Genn & Genn, 1989; Monsma & Lempert, 1992). Very few studies examine the value of representation for formal litigation procedures (Eisenberg & Schwab, 1988; Seron et al., 2001; Huang, 2008). As noted by Monsma and Lempert (1992), the paucity of studies on this research issue 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).

In contrast to these problematic contexts, our empirical study seeks to answer this basic question regarding the impact of legal representation by exploring a legal context where a sizable portion of defendants do not hire a lawyer. Specifically, we explore the prosecution of environmental criminal offenses in Belgium, in particular, in the region of Flanders. 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. However, legal representation does not influence the likelihood of receiving a remedial sanction, such as a mandatory clean-up order. 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.

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 and methods. Section 6 discusses the estimation results. Section 7 concludes.

2. Literature Review and Contribution of Present Study

The current study relates to two strands of the literature: research identifying the role and value of legal representation in legal proceedings and research exploring the determinants of environmental sanctions especially in Belgium.

The relevant 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 different offenses, and a variety of geographical settings. Most of these empirical cases focus on the United States, although some limited cases study other countries, such as Taiwan (Huang, 2008; Huang et al., 2014). Overall, the selection of cases to investigate the role of legal representation is unstructured, which complicates any comparison of results over these different settings.

Firstly, several studies examine the decision to hire a lawyer as an indicator of citizens' access to justice. For instance, Kritzer (2008) examines the relationship between income and using a legal professional based on data for seven different countries (the United States, England and Wales, Canada, Australia, New Zealand, the Netherlands, and Japan). He finds that the decision to seek legal advice has a relatively weak relationship with income but a relatively stronger relationship with the nature of the dispute. Huang et al. (2014) provides a more nuanced view of this interaction for Taiwan. They argue that, although the gravity of the legal problem is more influential than income on obtaining legal advice, the effect of income should not be easily dismissed. Implicitly, these studies assume that legal representation has a positive impact on justice, although guilty as well as innocent parties may profit from legal support.

A second viewpoint is that of the lawyers themselves. Overall, studies show that lawyers tend to be overconfident in their predictions of case outcomes. For example, Goodman-Delahunty et al. (2010) survey litigating attorneys, including new graduates and seasoned practitioners, from 44 states across the United States. They find clear evidence of unrealistic litigation goals set by these attorneys. Further, Eigen and Listokin (2012) analyze a natural experiment involving participants in moot court competitions at three U.S. law schools. These authors find evidence of an optimism bias: legal advocates often adopt a too favorable view of the merits of the case they are arguing. The students overwhelmingly perceived that the legal merits favor the side that they were randomly assigned to represent. Moreover, the observed overconfidence is associated with poorer performance in advocacy as measured by legal writing instructors. Correctly predicting case outcomes is important since a client will be most satisfied with a lawyer who is accurate and realistic when detailing the potential outcomes of the case (Goodman-Delahunty et al., 2010).

Thirdly, previous studies explore the impact of legal presentation in pretrial bail hearings in the US. Colbert et al. (2002) find that representation had a significant impact in bail hearings for non-violent offenses in Baltimore. The study shows that more than two and one half times as many represented defendants were released from pretrial custody as were unrepresented defendants. Additionally, two and one half times as many represented defendants had their bail reduced to an affordable amount. The authors conclude that, without counsel present, judicial officers made less informed decisions and were less likely to account for an individual's ability to pay.

Fourthly, previous 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). Exploiting the random assignment of public defenders and court-appointed private attorneys, the authors measure how defense counsel affects murder case outcomes. 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 %. The authors find no difference in the overall number of charges of which defendants were found guilty. 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.

Fifthly, the empirical evidence of the impact of legal representation on case outcomes 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. Finally, 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.

Finally, several other studies explore environmental sanctioning decisions by public prosecutors, criminal courts, and administrative authorities in Belgium. Previous studies exploit parts of the extensive *Environmental LawForce*[1] dataset to examine the use of non-monetary sanctions by lower criminal courts against corporate environmental offenders (Blondiau & Rousseau, 2010), the use of prison sentences by lower criminal courts against environmental offenders (Billiet & Rousseau, 2014), the use of harm-based versus act-based sanctions by lower criminal and administrative courts (Rousseau & 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). In addition, Faure and Svatikova (2012) investigate the scope of criminal and administrative law enforcement of environmental violations in four West-European jurisdictions, including Flanders (Belgium).

Our study contributes to these literatures by confirming that lawyers are at least effective at improving some legal outcomes yet demonstrating that lawyers are not effective at improving all legal outcomes. Moreover, the current study provides evidence on the impact of legal representation for a new type of cases in a new geographical setting by focusing on environmental crime in a European country.

3. Legal Context

This section provides an overview of the most relevant characteristics of the Belgian criminal sanctioning system. For more details, see Billiet et al. (2014) and Billiet (2014). 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, that 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 & 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

---

[1] The database is available at www.environmental-lawforce.be.

Permitting Decree) to five years (e.g., the Waste Decree).[2]

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 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" (e.g., 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

In this section, we describe the data collection process and the data used for our empirical analysis. We use the Environmental LawForce database (www.environmental-lawforce.be). This database records the complete environmental case load from January 1, 2003, to December 31, 2006, for seven of the 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 environmental administrative case load of the Brussels environmental administration for the same time period.

The database includes information on 1034 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 Appendix A.

For the current study, we limit the dataset to the 1,330 decisions made by the criminal courts of

---

[2] In Belgium, the fine amounts mentioned in legislation are multiplied by a legal correction factor ("opdeciemen") to counter the effects of monetary depreciation. This correction factor equals six since 2012. The identified minimum and maximum fines do not reflect this factor.

first instance that deal with individual defendants. We purposively avoid appealed cases because they most likely are distinctively different and demand additional analysis. We purposively exclude legal entities since these defendants nearly always hire legal representation. The resulting sample consists of two types of individuals: private individuals and professional individuals. Private individuals represent 56 % of the dataset (745), while professional individuals represent 44 % (585). 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, with a minimum age of 22 and a maximum age of 83. For prosecuted private individuals, 80 % were male and 89 % were of Belgian nationality. Private individuals were 44 years old on average, with a minimum age of 19 and a maximum age of 93.

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.

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.

5. Econometric Framework and Methods

In this section, we describe the econometric framework and methods. Firstly, we depict the dependent and control variables. Secondly, we assess the possible endogeneity of legal representation.

5.1. Econometric Framework

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. 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. In order 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.

Since multiple defendants may be involved in a single case, our estimation clusters the standard errors at the level of a single case.

5.2. Assessment of Instruments and Exogeneity

We suspect that the presence of a lawyer may be an endogenous regressor. To assess this suspicion, we employ instrumental variables (IV) estimation. We need at least one instrument to implement IV estimation. In order to test the validity of chosen instruments, we need at least two instruments so that we over-identify the regression system. We utilize four instruments that reflect the local community within which a defendant resides: (1) annual per capita income, (2) annual number of divorces processed per inhabitant [i.e., number of divorces divided by number of inhabitants], (3) annual number of people receiving Belgian nationality per inhabitant, and (4) annual number of unemployed individuals per inhabitant. We use Belgian statistical administrative units to define local communities. We match the annual data for each community characteristic to an individual defendant based on the year in which the court issued its verdict.

Of the 1,330 cases examined, we are not able to tag 36 defendants with a local community because the defendant lives outside of Belgium, resides in prison, or is homeless. In these cases, we insert replacement values of zero for each of the four community characteristics, while inserting an indicator of this replacement as a regressor in our econometric analysis. Technically this indicator also serves as an instrument since we do exclude it from the second stage regression equations. We acknowledge that this indicator applies to individual defendants unlike the other instruments. Nevertheless, we claim that this indicator should not prove problematic since we include it only to adjust for our use of replacement values of zero. In five cases, Belgian national statistics fail to offer data for community characteristics not related to unemployment; in 23 cases, Belgian national statistics fail to offer data on unemployment; in both cases, we insert replacement values equaling the relevant sample means.

We claim that our primary instruments are both relevant and valid. They are relevant as long as a defendant's peers influence his/her decision to hire a lawyer. We claim that we capture these peer effects using local community characteristics as proxies. As peers' income rises, the defendant is more likely to hire a lawyer since his/her peers are better able to offer advice on lawyers. As peers' domestic affairs degrade, as reflected in more divorces, the defendant is more likely to hire a lawyer since lawyers are generally needed to process divorces. As a community becomes occupied with more immigrants, the defendant is less likely to hire a lawyer since his/her peers are less familiar with the legal system. As the unemployment rate rises, the defendant is less likely to hire a lawyer since his/her peers are less able to offer advice on lawyers.

Our instruments are valid since they should not directly affect the decisions of judges since the local community characteristics do not relate to the specific elements of the case being prosecuted.

We statistically assess our claims of relevance and validity. We would prefer to use an

instrumental variables probit estimator to assess the binary outcomes and an instrumental variables Tobit estimator to assess the censored outcomes. However, these two estimators are not able to assess binary endogenous regressors; instead, these two estimators can only assess continuous endogenous regressors. As a substitute estimator, we employ a two-stage ordinary least squares (2SLS) estimator as our instrumental variables estimator. In the case of binary outcomes, this estimator represents implementation of a Linear Probability Model. In the case of censored outcomes, this estimator obviously ignores the issue of censoring at zero. While neither use of the 2SLS estimator is ideal, we claim that 2SLS estimates still facilitate a sufficient assessment of the chosen instruments and testing of the exogeneity of the potentially endogenous regressor.

To assess the relevance of the instruments, we conduct Partial F-tests and Kleibergen-Paap Underidentification Tests. Both tests rely exclusively on an assessment of the first stage of estimation, which captures the defendant's decision whether or not to hire a lawyer. For this first-stage estimation, we consider two samples: full sample, which applies to the judge's verdict decision, and the sub-sample of guilty defendants, which applies to the remaining court decisions, e.g., imposition of a fine, incarceration. Appendix Table A-1.a displays the instrument relevance tests. Recall that we employ six regressor sets: Models 1 through 6. Regardless of the sample and the model, Table A-1.a reveals that the instruments are relevant since the Partial F-test statistics reject the null hypothesis of zero slopes for the instruments when considered collectively and the Kleibergen-Paap Test statistics reject the null hypothesis of under-identification. This said, we acknowledge that the rejection of these two null hypotheses is weak based on Model 6; the relevant p-values are 0.099 and 0.109. We argue that these Model 6 results are not problematic since the large regressor set of Model 6 most likely leaves little traction left for our set of four instruments. At a minimum, we claim that the other five models reveal strong relevance for our chosen instruments.

To assess the validity of our instruments, we employ a Hansen J Test of Over-Identification. This test involves both stages of estimation. Thus, we conduct this test for each dependent variable separately. Appendix Table A-1.b displays the Hansen J Test statistics. As shown, the test statistics fail to reject the null hypothesis of validity since the p-values lie above 0.10 with only two minor exceptions. First, based on Model 1 for the verdict outcome, the Hansen J Test statistic rejects the null hypothesis of validity at the 10 % level given a p-value of 0.086. However, the other five models deliver Hansen J Test statistics that clearly fail to reject the null hypothesis, as shown in Appendix Table A-1.b. Second, based on Model 5 for the outcome of effective prison term magnitude, the Hansen J Test statistic rejects the null hypothesis of validity at the 10 % level given a p-value of 0.098. The other four models for the outcome of effective prison term magnitude lie near but above 0.10 ($0.116 \leq p \leq 0.148$). Thus, we acknowledge that the evidence for the effective prison term magnitude is weak. In all other cases, the Hansen J test statistics strongly fail to reject the null hypothesis of validity. In general, we conclude that our instruments do not appear invalid.

Since our instruments appear relevant and not invalid, we assess the Hausman Exogeneity Test statistics, which are shown in Appendix Table A-1.b. The test statistics fail to reject the null hypothesis of exogeneity since the p-value lies above 0.10, except in three minor exceptions. First, based on Model 6 for the verdict outcome, the Hausman Exogeneity Test statistic rejects the null hypothesis at the 10 % level given a p-value of 0.093. Still, the other five models deliver test statistics that fail to reject the null hypothesis ($p \geq 0.182$). Second, based on Model 1 for the suspended fine magnitude, the Hausman Exogeneity Test statistic rejects the null hypothesis at the 5 % level given a p-value of 0.020. Still, the other five models deliver test statistics that fail to reject the null hypothesis ($p \geq 0.241$). As important, the 2SLS estimates reveal a significantly positive coefficient for the lawyer presence factor ($p = 0.046$), consistent with the non-IV Tobit estimates, as shown in Table 3. Third, based on Model 1 for the suspended monetary sanction magnitude, the Hausman Exogeneity Test statistic rejects the null

hypothesis at the 5 % level given a p-value of 0.020. Still, the other five models deliver test statistics that fail to reject the null hypothesis (p≥0.243). As important, the 2SLS estimates reveal a significantly positive coefficient for the lawyer presence factor (p=0.046), consistent with the non-IV Tobit estimates, as shown in Table 3. Overall, these Hausman Exogeneity Test statistics indicate that the lawyer presence regressor does not appear endogenous.

Given this indication, we proceed using the standard probit and Tobit estimators. We purposively avoid the use of a probit IV estimator and a Tobit IV estimator since these two estimators do not work with binary endogenous regressors, as noted above. Moreover, performing IV estimation when the regressors are uncorrelated with the error process involves an important cost – *"the asymptotic variance of the IV estimator is always larger, and sometimes much larger, than the asymptotic variance of the OLS estimator"* (Wooldridge, 2002, p. 490).

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.

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. 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 display only information on the coefficient for our primary regressor – lawyer presence, along with estimation summary statistics. Appendix Table A-2 displays the full regression results for Model 6 for each of the case outcomes. 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).

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.

Firstly, we focus on the fine results. We find that the presence of 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 penalty, such as mandatory waste cleanup or a temporary closure of the legal entity for which the defendant is responsible. In this instance, 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.

6.2. Control Factors

In this section, we comment on the broader set of estimation results. 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. In addition, the court of Dendermonde seems statistically more likely to impose a problem solving penalty. 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. The importance of the seriousness of the offense is supported by the observation that courts punish offenders who undertake voluntary measures 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 effect of legal representation on court decisions and compare these effects to the cost of hiring a lawyer.

First, we calculate the cost of hiring a lawyer in Flanders. The costs of hiring a lawyer typically consist of two parts: a fee and operational costs. A study of the Flemish Bar Association finds that more than half of the lawyers charged a fee, excluding VTA, between 75 and 150 euro per hour in 2006, with an average of 100 euro per hour for individuals, 125 euro per hour for companies, and 134 euro per hour for the government (Vacature, 2010). The operational costs include costs for communication, file management, and transportation. These costs can easily amount to several 100 euros or more (DAS, 2008). Based on this information, we conservatively set operational representation costs equal to 500 euro.

Next, we assess the marginal effects of the presence of a lawyer from 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 lowers the effective fine by 2,282 euro (in Model 4) to 2,922 euro (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 financial benefits of hiring a lawyer range between 241 euro and 4,827 euro with 95 % confidence. Given operational costs of 500 euro, hiring a lawyer is not worth the hourly fee of 100 euro, regardless of the expected number of hours billed, based on the lower benefits estimate of 241 euro. However, a lawyer is worth the hourly fee of 100 euro, as long as no more than 43 hours are billed, based on the upper benefits estimate of 4,827 euro.

Beyond the impact on the effective fine, legal representation also reduces the probability of conviction, the probability of receiving a prison sentence, as well as the level of that prison sentence. Taking all these effects together clearly increases the value of hiring a lawyer.

7. 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 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. Based on instrumental variables estimation, we convincingly demonstrate that the presence of a lawyer appears exogenous to the studied court decisions. Thus, we confidently argue that the identified

differences in outcomes are attributable solely to the presence of legal counsel, thus, beyond the influence of unobserved factors.

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.

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 (see, e.g., Polinsky & 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.

References

Anderson, J.M. and P. Heaton (2012). How much difference does the lawyer make? The effect of defense counsel on murder case outcomes. *The Yale Law Journal*, 122, 154-217

Billiet, C.M. (2016, in press). Environmental Law Enforcement in the European Union: benchmarking sanctioning practices in the criminal track. In I. Tchotourian (ed.), *Company Law and CRS. New legal and Economic Challenges.* Brussels, Bruylant, in press.

Billiet, C.M. and S. Rousseau. (2014). How real is the threat of imprisonment for environmental crime? *European Journal of Law and Economics* 37(2):183-198.

Billiet, C.M., S. Rousseau, A. Balcaen and R. Meeus. (2010). Minnelijke schikkingen voor milieumisdrijven in Vlaanderen. *Panopticon* 31(4):78-84.

Billiet, C.M., S. Rousseau, A. Balcaen, R. Meeus, K. Styns, G. De Meyer, T. Vander Beken and L. Lavrysen. (2009). Milieurechtshandhaving: een databestand voor onderzoek naar de penale en bestuurlijke sanctioneringspraktijk. *Tijdschrift voor Milieurecht* 18 (2):128-150.

Billiet, C.M., T. Blondiau and S. Rousseau. (2014). Punishing environmental crimes: An empirical study from lower courts to the court of appeal. *Regulation and Governance* 8(4): 472-496.

Blondiau, T. and S. Rousseau (2010). The impact of the judicial objective function on the enforcement of environmental standards. *Journal of Regulatory Economics* 37(2): 196-214

Blondiau, T., Billiet, C.M. and S. Rousseau (2015). Comparison of criminal and administrative penalties for environmental offenses. *European Journal of Law and Economics* 39(1): 11-35.

Bowles, R., M. Faure and N. Garoupa. (2005). Forfeiture of illegal gain: An economic perspective. *Oxford Journal of Legal Studies* 25(2):275-295.

Clarke, S.H. and G.G. Koch (1980). Juvenile court: Therapy or crime control, and do lawyers make a difference? *Law & Society Review*, 14(2), 263-308.

Colbert, D.L., Paternoster, R. and S. Bushway (2002). Do attorneys really matter? The empirical and legal case for the right of counsel at bail. *Cardozo Law Review*, 23(5), 1719-1793

DAS (2008). Mijn rechten verdedigen? Maar wat gaat mij dat kosten? Retrieved on February 3, 2016 from www.advocatennet.be/uploads/advocatennet/pdf/200811vitaya/Speciaal_4-verdediging%20rechten_wat_gaat_me_dat_kosten.pdf

Eigen, Z.J. and Y. Listokin (2012). Do lawyers really believe their own hype and should they?: A natural experiment. *The Journal of Legal Studies,* 41(2), 239 – 267

European Commission. (2004). *Green Paper on the Approximation, Mutual Recognition and Enforcement of Criminal Sanctions in the European Union*. Brussels, COM(2004)334 final, 94p.

Faure, M. G., and Svatikova, K. (2012). Criminal or administrative law to protect the environment? Evidence from Western Europe. *Journal of Environmental Law*, *24*(2), 253-286.

Genn, H. and Y. Genn (1989). *The effectiveness of representation at tribunals: Report to the Lord Chancellor*. London: Lord Chancellor's Department.

Goodman-Delahunty, J., Granhag, P. A., Hartwig, M., & Loftus, E. F. (2010). Insightful or wishful: Lawyers' ability to predict case outcomes. *Psychology, Public Policy, and Law*, *16*(2), 133-157

Huang, K.-C. (2008). How legal representation affects case outcomes: An empirical perspective from Taiwan. *Journal of Empirical Legal Studies*, 5(2), 197-238

Huang, K.-C., Lin, C.-C., & K.-P. Chen (2014). Do rich and poor behave similarly in seeking legal advice? Lessons from Taiwan in comparative perspective. *Law & Society Review*, 48(1), 193-223

Kritzer, H.M. (2008). To lawyer or not to lawyer: Is that the question? *Journal of Empirical Legal Studies*, 5(4), 875–906

LaFountain R., R. Schauffler, S. Strickland, S. Gibson, & A. Mason. (2011). Examining the Work of State Courts: An Analysis of 2009 State Court Caseloads. National Center for State Courts. http://www.courtstatistics.org/flashmicrosites/csp/images/csp2009.pdf

Ministry of Justice (2012). Judicial and court statistics 2011. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/217494/judicial-court-stats-2011.pdf

Monsma, K. and R. Lempert (1992). The value of counsel: 20 years of representation before a public housing eviction board. *Law & Society Review,* 26(3), 627-668.

Polinsky, A.M. and S. Shavell (1979). The optimal tradeoff between the probability and magnitude of fines. *American Economic Review,* 69(5), 880-891.

Rousseau, S. and T. Blondiau (2014). Act-based versus harm-based sanctions for environmental offenders. *Environmental Policy and Governance* 24(6), 439-454.

Schwab, S.J. and T. Eisenberg (1988). Explaining constitutional tort litigation: The influence of the attorney fees statute and the government as defendant. *Cornell Law Review*, 73, 719-784.

Seron, C., Frankel, M., Van Ryzin, G. and J. Kovath (2001). The impact of legal counsel on outcomes for poor tenants in New York City's housing court: Results of a randomized experiment. *Law & Society Review*, 35(2), 419-434

Vacature (2010). *Hoeveel vraagt een advocaat voor een uurtje advies?* Retrieved on 3 February 2016 from www.vacature.com/carriere/salaris/Hoeveel-vraagt-een-advocaat-voor-een-uurtje-advies

Van den Wyngaert, C. (2009). *Strafrecht, strafprocesrecht en internationaal strafrecht in hoofdlijnen*. Antwerpen: Maklu.

Woolridge, J.M. (2002). *Econometric analysis of cross section and panel data*. Cambridge: MIT Press

Appendix A:
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).

Table 1

Case Outcomes

		Full sample		Professional Individuals		Private Individuals	
		Guilty	Acquitted	Guilty	Acquitted	Guilty	Acquitted
		1173	157	514	71	659	157
Fine	Y	999		412		587	
	N	174		102		72	
Forfeiture of gains	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	Y	220		91		129	
	N	953		423		530	

Table 2
Probit Estimation of Binary Outcomes – Key Results

Model	Lawyer Presence: 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

17

	Problem Solving Penalty 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

Model	Lawyer Presence: Coefficient		Estimation Summary		N [a]	Bottom Censored 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.

Appendix Table A-1
Assessment of Instruments and Exogeneity Tests

Table A-1.a. Relevance of Instruments

Model	Full Sample				Guilty Defendants Sub-Sample			
	Partial F-test		Kleibergen-Paap Underidentification Test		Partial F-test		Kleibergen-Paap Underidentification Test	
	Statistic	p-value	Statistic	p-value	Statistic	p-value	Statistic	p-value
1	5.65	0.000	24.56	0.000	5.82	0.000	26.49	0.000
2	4.13	0.001	17.58	0.004	4.46	0.001	19.51	0.002
3	3.67	0.003	15.29	0.009	4.23	0.001	16.98	0.005
4	3.62	0.003	14.89	0.011	4.42	0.001	17.18	0.004
5	3.32	0.006	13.97	0.016	4.16	0.001	16.71	0.005
6	1.85	0.099	8.75	0.109	1.99	0.078	10.05	0.074

Table A-1.b. Validity of Instruments and Exogeneity Tests

Table A-1.b.i. Binary Outcomes: Verdict and Sanction Imposition

Model	Guilty Verdict				Fine Imposition			
	Hansen J Test: Overidentification		Hausman Exogeneity Test		Hansen J Test: Overidentification		Hausman Exogeneity Test	
	Statistic	p-value	Statistic	p-value	Statistic	p-value	Statistic	p-value
1	8.164	0.086	1.784	0.182	3.534	0.473	0.471	0.493
2	5.270	0.261	1.214	0.271	3.751	0.441	0.626	0.429
3	3.851	0.427	1.305	0.253	3.496	0.479	0.321	0.571
4	4.584	0.333	0.976	0.323	4.490	0.344	0.547	0.460
5	4.577	0.334	0.645	0.422	4.949	0.293	0.917	0.338
6	3.499	0.478	2.815	0.093	6.294	0.178	1.297	0.255

Model	Monetary Sanction Imposition				Problem Solving Penalty Imposition			
	Hansen J Test: Overidentification		Hausman Exogeneity Test		Hansen J Test: Overidentification		Hausman Exogeneity Test	
	Statistic	p-value	Statistic	p-value	Statistic	p-value	Statistic	p-value
1	3.216	0.522	0.335	0.563	5.134	0.274	0.091	0.763
2	3.361	0.499	0.456	0.499	4.951	0.292	0.062	0.803
3	3.066	0.547	0.214	0.644	3.210	0.523	0.005	0.946
4	4.102	0.392	0.417	0.518	3.098	0.542	0.000	0.989
5	4.752	0.314	0.711	0.399	3.618	0.460	0.028	0.868
6	6.282	0.179	1.057	0.304	3.548	0.471	0.092	0.762

Model	Prison Sentence			
	Hansen J Test: Overidentification		Hausman Exogeneity Test	
	Statistic	p-value	Statistic	p-value
1	4.410	0.353	0.285	0.593
2	3.447	0.486	0.064	0.800
3	3.648	0.456	0.001	0.971
4	4.339	0.362	0.091	0.763
5	4.364	0.359	0.095	0.758
6	4.249	0.373	0.156	0.693

Table A-1.b.ii. Censored Outcomes: Sanction Magnitudes

| Model | Fine: Effective Magnitude | | | | Fine: Suspended Magnitude | | | |
| | Hansen J Test: Overidentification | | Hausman Exogeneity Test | | Hansen J Test: Overidentification | | Hausman Exogeneity Test | |
	Statistic	p-value	Statistic	p-value	Statistic	p-value	Statistic	p-value
1	2.784	0.595	0.001	0.981	3.343	0.502	5.400	0.020
2	2.720	0.606	0.000	0.988	3.718	0.446	1.272	0.259
3	3.858	0.426	0.101	0.751	3.746	0.442	1.376	0.241
4	4.069	0.397	0.149	0.700	3.957	0.412	1.304	0.254
5	3.936	0.415	0.087	0.768	3.664	0.453	0.569	0.451
6	3.513	0.476	0.204	0.651	3.697	0.449	0.273	0.602

| Model | Monetary Sanction: Effective Magnitude | | | | Monetary Sanction: Suspended Magnitude | | | |
| | Hansen J Test: Overidentification | | Hausman Exogeneity Test | | Hansen J Test: Overidentification | | Hausman Exogeneity Test | |
	Statistic	p-value	Statistic	p-value	Statistic	p-value	Statistic	p-value
1	3.918	0.417	0.249	0.618	3.323	0.505	5.445	0.020
2	3.086	0.544	0.020	0.888	3.657	0.454	1.294	0.255
3	3.541	0.472	0.022	0.882	3.653	0.455	1.363	0.243
4	3.835	0.429	0.006	0.937	3.858	0.426	1.288	0.256
5	3.655	0.455	0.138	0.710	3.590	0.464	0.572	0.450
6	3.767	0.438	0.054	0.817	3.607	0.462	0.285	0.594

| Model | Prison Term: Effective Magnitude | | | | Prison Term: Suspended Magnitude | | | |
| | Hansen J Test: Overidentification | | Hausman Exogeneity Test | | Hansen J Test: Overidentification | | Hausman Exogeneity Test | |
	Statistic	p-value	Statistic	p-value	Statistic	p-value	Statistic	p-value
1	6.787	0.148	2.301	0.129	0.662	0.956	2.014	0.156
2	7.585	0.118	1.497	0.221	1.185	0.881	0.964	0.326
3	6.899	0.141	0.640	0.424	2.932	0.569	1.691	0.193
4	7.555	0.119	0.425	0.514	3.811	0.432	1.213	0.271
5	7.837	0.098	0.963	0.326	3.505	0.477	1.329	0.249
6	7.643	0.116	0.919	0.338	4.151	0.386	0.531	0.466

Appendix Table A-2
Probit Estimation of Binary Outcomes – Full Results for Model 6

Appendix Table A-2.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 [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) [q]	-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-2.b. Prison Sentence Imposition and Problem Solving Penalty Imposition

Regressor	Prison Sentence		Problem Solving Penalty	
	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 [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.

Appendix Table A-3
Tobit Estimation of Bottom-Censored Outcomes – Full Results for Model 6

Appendix Table A-3.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 [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) [q]	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-3.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 [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-3.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 [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.