Biased Judges: Evidence from French Environmental Cases*

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Abstract

Using an original database of 614 judgements in the French upper courts from 1956 to 2010, we test for possible biases in judges' decisions in the field of environmental accidents, focusing on a difference of treatment between private parties and the government as a litigant. Some difficulty arises because two separate jurisdictions deal with environmental cases in France, namely the *Conseil d'État* for the public utilities and the government, and the *Cour de Cassation* for the private firms. We run bivariate Probit regressions to explain pro-defendant decisions and reversals of decisions. We find a difference in the treatment of plaintiffs and defendants: i) a pro-defendant decision and a reversal of decision are less likely to occur when the appeal was initiated by the defendant rather than by the plaintiff; ii) a pro-defendant decision and a reversal of decision are less likely to occur in the *Conseil d'État* rather than in the *Cour de Cassation*. Overall, courts treat differently plaintiffs and defendants. We find a stronger severity from the *Conseil d'État* towards defendants than from the *Cour de Cassation*. These results could be indicative of a bias of the lower administrative courts in favor of public utilities and/or the government.

JEL classification: K13, K32, K41.

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1 Introduction

In the matter of Justice, anybody should expect that individuals in similar situations be treated equally by the Law. However, empirical analysis on courts decisions in various countries and fields has revealed that litigants could receive a different treatment according to their nature: for instance, one can find a difference of treatment between employers and employees in labor courts, but also between debtors and creditors in bankruptcy courts and, more often, between plaintiffs and defendants. In the last category, studies have particularly focused on the difference between private parties and the government as litigants.

In the context of environmental accidents, one can wonder whether public utilities or cases in which the government[1] is concerned in any manner benefit from a particular treatment. The French legal system separates the cases involving public utilities and the government from the cases involving private corporations. Indeed, cases follow different routes: i) those implying private firms are first judged by a *Cour de première instance* then appeals go to the *Cour de Cassation*; ii) cases implying public utilities or the government are first judged by an administrative court then appeals go to the *Conseil d'État*.

In this paper, we test for a possible bias of judges in the upper courts regarding the French environmental cases.

As it is common in the literature devoted to courts' biases, we first look at the decisions favorable to defendants to detect a possible difference between the two upper courts. This literature has also sustained the idea that reversal by upper courts of decisions taken at lower courts can be a signal of a correction behavior by the former, for they believe lower courts are biased. We thus observe these reversal decisions in the two highest courts in France. In addition, we provide novel insights by analyzing the remand decisions taken by upper courts, a proxy for the trust from appeal courts in the capacity of lower ones to review the cases. The observations come from an original database covering 614 judgements of the highest courts (the entire set of French environmental cases) for the period 1956-2010.[2] One difficulty comes from the fact that there are two separate jurisdictions. However, the database offers sufficient control variables to ensure that differences in the decisions really come from judges' behavior and not from other factors

[1] By abuse of terminology, any representative of the State will be referred to as the government: in the present context, these representatives are often the mayors, or the *Préfet*, the local chief of the police.

[2] See Bentata (2013a,b).

like differences in the safety policy or in the ownership across firms.

We run bivariate Probit regressions to explain pro-defendant and reversal decisions. We find a difference in the treatment of plaintiffs and defendants in both estimations: i) a pro-defendant decision and a reversal of decision are less likely to occur when the appeal was initiated by the defendant rather than by the plaintiff; ii) a pro-defendant decision and a reversal of decision are less likely to occur in the *Conseil d'État* rather than in the *Cour de Cassation*. Last, the estimation on remand decisions shows that the *Conseil d'État* sends less cases back to the lower court than the *Cour de Cassation*. Assuming that the intensity of remand is a proxy for the degree of trust of an upper court toward lower ones, this last result could be indicative of a lower trust from the *Conseil d'État*. This additional result reinforces the main findings: i) overall, upper courts treat differently plaintiffs and defendants, with a pro-plaintiff bias; ii) the *Conseil d'État* shows more severity towards defendants than the *Cour de Cassation*. In accordance with the related literature, we could interpret it as a correction behavior: this pro-plaintiff bias revealed in upper courts could indeed correct for a pro-defendant bias in lower courts, and this would be particularly the case from administrative courts towards public utilities and/or the government.

There exists a substantial empirical literature on litigation, even when restricted to courts' decisions and their possible biases.[3] This literature has mainly studied bias in favor of defendants versus plaintiffs, bias for the government against private litigants, but also bias for employers against employees, of debtors against creditors. It has been enriched by taking into account the selection effect (see below), judges' career concerns, economic or political conditions, the distinction between jury and bench verdict, case categories, but also misperception of appellate judges about the lower courts' attitude. Let us try to give a brief overview of the closest papers.

Our main results go counter the conclusion of quite a number of quantitative studies in which defendants perform better than plaintiffs on civil appeals. Among the studies carried on U.S. federal and state intermediate appellate courts, Clermont and Eisenberg (1992) show that plaintiffs' win rates before jury or before judge differ significantly.[4] More importantly for our purpose, using data on all U.S. federal civil trials and appeals from 1988 to 2000, Clermont and Eisenberg (2001, 2002) show that defendants succeed more than plaintiffs on appeal from civil trials, ex-

[3] Theoretical analyzes have also been developed on judicial bias and its efficiency consequences, but their focus is a little far from our own. See Miceli (2009, 2010), for instance, or Gennaioli and Rossi (2010) and Gennaioli (2013). One should also mention Shavell (1995)'s study of the error correction with the appeal process.

[4] This is not due to a difference between the behavior of jury and judge, but rather to the fact that attorneys select and submit cases to jury that are particularly difficult to win for plaintiffs.

plaining it by appellate judges' attitude.[5] This difference is confirmed by Eisenberg (2004) on federal courts data covering all cases categories, and the appellate court effect is confirmed on employment discrimination cases.[6] However, it should be mentioned that Eisenberg and Farber (2011) provide evidence that the lower plaintiffs' success rate on appeal can be due to plaintiffs pursuing lawsuits even when they should win on the merits less than half the time. The lower success rate on appeal thus may not find its origin in appellate judges' attitude. Last, Eisenberg, Fisher and Rosen-Zvi (2011) do not find evidence of asymmetric reversal rates favoring defendants in Israel Supreme Court's appellate cases.

A strand of literature analyzes the possible bias of judges in link with economic conditions or political party. This is the purpose of Ichino, Polo and Rettore (2003) who show that labor market conditions influence courts' decisions: using detailed micro data from a large Italian bank, they show that courts are more favorable to workers in higher unemployment contexts. In the same line of research, Marinescu (2011) obtains the opposite result: using a 1992 survey on U.K. employment tribunals, she finds that both the unemployment and the bankruptcy rates significantly decrease the probability of judges deciding in favor of dismissed employees, suggesting that judges, while tailoring firing costs to economic circumstances, are somewhat more sensitive to firms' interest. Lambert Mogiliansky, Sonin and Zhuravskaya (2006) study the nature of judicial bias in bankruptcy proceedings following the enactment of bankruptcy law in Russia in 1998, finding that regional political characteristics together with the quality of the regional judiciary affect judicial decisions about the numbers and types of bankruptcy procedures initiated after the law took effect. Choi and Gulati (2008) test for the presence of bias in judicial citations within U.S. federal circuit court opinions, showing that judges base some citations on the political party of the cited judge, but also that biases increase with the stake of the situation.

A recurrent message in this literature is that when analyzing courts' decisions, one cannot ignore that the set of lawsuits and plaintiffs is far from a random selection among potential claims and potential claimants. Indeed, the cases at hands in the tribunals are not representative of

[5]Using data on all terminated cases in the federal courts from 1988 to 1997, Clermont and Eisenberg (2000) reveal the same anti-plaintiff effect: defendants succeed significantly more often on appeal from civil trials than plaintiffs, and specially from jury trials. Authors attribute this appellate judges' attitude to their perception of a pro-plaintiff bias at trial court level. Using a unique dataset on a comprehensive cohort of tried state court cases, Eisenberg and Heise (2009) obtain similar results from 8038 trials and 549 concluded appeals from 46 large counties in the U.S., confirming the main findings from federal courts.

[6]Both Clermont and Eisenberg (2001) and Eisenberg (2004) confirm the appellate court effect, meaning judges' attitude, even when taking into account the different trial-win rates - the case selection process - mentioned below.

the entire population at the start, nor the set of potential claimants, but result themselves from a selection process. Priest and Klein (1984) have advanced this theory, which was further developed and tested by Waldfogel (1995), or Eisenberg and Farber (1997, 2003). Waldfogel (1995) proposes a method for using the structure of Priest and Klein (1984)'s selection model to draw inferences of the position of the decision standard, the predictability of trial outcomes, and the degree of stake asymmetry for each of the three major case types (contracts, intellectual property and torts). Eisenberg and Farber (1997) develop a theoretical framework predicting different trial rates and win rates for individuals and for corporations which are confirmed by a test on about 200000 civil suits in U.S. federal courts. Eisenberg and Farber (2003) extend the test by predicting different trial rates and win rates for the U.S. federal government and for private litigants and confirm also them using about 474000 cases filed in federal district court. Continuing to explore this selection effect, Eisenberg (1991) shows that plaintiffs' success at trial stages is related to plaintiffs' success at pretrial motion. The central point of the selection process theory remains that one should be careful when drawing inferences on the legal system from studies on tried cases. In our analysis, outcome at higher courts are favorable to plaintiffs: we suggest an interpretation in which the upper courts adopt a correction behavior. However, we should keep in mind that this success rate for plaintiffs could also come from the fact that cases where defendants could win have not reached the upper court level. In any case, it is impossible for us to control for case selection since we do not have the history of our cases, and thus the information on what happened in lower courts.

The paper closest to ours remains Garoupa and Amaral-Garcia (2012) who test for the bias of administrative courts in favor of the government in the field of medical malpractice in Spain. It is remarkable that our main results departs from theirs: whereas they find no clear evidence that administrative courts decide more favorably for the defendants than civil courts, we show a different treatment of defendants by the *Conseil d'État* that could suggest the reverse. Our results on tougher decisions by the *Conseil d'État* against defendants - public utilities and the government - also depart from Eisenberg, Fisher and Rosen-Zvi (2011) who find the government to be a highly successful litigant, both in obtaining review from the Israeli Supreme Court and in obtaining reversal of judgments it appealed.

The paper is organized as follows. Section 2 depicts the legal background. Section 3 describes the dataset. Section 4 reports the estimations and provides the main results. Section 5 briefly

concludes by pointing out alleys for further work.

2 The legal background

2.1 The French legislation

In France, as in many civil law countries, there is a separation between civil and administrative jurisdictions. Civil jurisdictions deal with disputes between private parties whereas administrative jurisdictions deal with the competence of the administrative authorities and their relation with private individuals. More precisely, in environmental cases, a dispute will be tried in administrative courts if the defendant is a public legal person, a state-owned company or a private company entitled to provide public services and exercising an administrative authority. [7] Otherwise, they are subject to civil law, even though they provide public goods and services [8] Hence, environmental administrative litigations may concern either a controversy over a decision of a state official (e.g. authorization of starting a potentially environmentally unfriendly activity, implementation of a controversial local regulation, or stringency of an environmental impact assessment) or a dispute over an action of a public defendant that resulted in damages to private plaintiffs.

The main reason of such a distinction between private and public defendants lies in the fact that "*public authorities have specific powers and obligations that require that their action should not be reviewed by ordinary courts*" (Frydman, 2008). Consequently, the determination of liability is different in administrative and civil courts. In civil law, fault-based liability is the rule (except for the most environmentally unfriendly facilities called ICPE facilities,[9] which are subject to strict liability) and the criterion for negligence is the "reasonable man standard" (*Bon père de famille*). In administrative law, the standard of care is much higher as state-owned companies and state officials have an obligation of sanitary security[10] and cannot claim that their level of care was

[7] Private companies with a public service mission are subject to administrative law if they are entitled to take administrative decisions "*prérogative de puissance publique*" (see *Arrêt Magnier in CE January 1961, 13th, and CE May 1991, 15th, Association Girondins de Bordeaux FC*).

[8] *Tribunal des Conflits*, November 1995, 27th, *Le Troedec*, and *Arrêt Temier in CE February 1903, 6th*.

[9] *Installations classées pour la protection de l'environnement.*

[10] The first reference to this obligation appeared in 1902 (Law of February 1902, 15th, relative to the protection of public health). The criterion has become more stringent over the century as many public health and environmental scandals occurred. For instance, the State has been condemned for "public health deficiencies" in the HIV-contaminated blood affair (CE April 1992, 9th, n° 138653) and in the asbestos affair (CE March 2004, 3rd n° 241153).

limited by a budget constraint.[11] Furthermore, the procedures are also different. The procedure before administrative courts is inquisitorial ("*inquisitoire*") whereas the civil procedure is accusatorial ("*accusatoire*"). This means that administrative courts direct the course of the procedure, and are in charge of finding out the facts that may be relevant for their decisions (Frydman, 2008). Consequently, administrative judges have more room than civil judges to make their decisions. Hence, if judges are likely to be biased, the effect would be greater in administrative courts.

2.2 The appeal process

Civil and administrative jurisdictions have a similar organization. Both are pyramidal with the *Cour de Cassation* and the *Conseil d'État* at the apex of the civil and the administrative branches, respectively. Civil and administrative cases are first tried respectively in *Cours d'Instance* and in *Cours Administratives d'Instance* and can be appealed in *Cours d'Appel* and in *Cours Administratives d'Appel*. As far as litigations are concerned,[12] the *Cour de Cassation* and the *Conseil d'État* share a common feature: both have to harmonize case law to ensure that texts are interpreted in the same way all over the country. Moreover, they do not rule on the merits of a case, but rather on the proper application of the rules by lower courts (i.e. both Supreme Courts judge the decisions of lower courts). Hence, even though administrative and civil rules might differ, the task of judges from both Supreme Courts is similar. Consequently, observing Supreme Courts' decisions is relevant to compare the application of the Law by lower civil and administrative courts.

2.3 Professional backgrounds of administrative and civil judges

In France, administrative and civil laws are considered as very different branches of Law, with their own logic and their own process. For this reason, administrative and civil judges often have very different backgrounds. Civil judges have a special statutory protection (referred to as *Magistrat*). To become civil judges, candidates have to attend the National School for the Judiciary (*École Nationale de la Magistrature*) for a period of 31 months. There are three different competitive examinations depending on the professional experience of the candidate: the first

[11] Cass. Crim., July 2nd 1998, n° 97-83.286.

[12] Indeed, the *Conseil d'État* exercises two different roles: it is not only the Supreme Court of the administrative jurisdiction but also the most important legal advisor to the Government.

one is open to students with a Master degree in Law who are at least 27 years of age. The second and third ones are open to people who already have a strong experience in the legal domain. The vast majority of civil judges come from the first examination process (e.g. in 2006, 88% of newly graduated judges where former Law Master students who entered the National School for the Judiciary through the first examination process). As a result, the majority of successful candidates begin their professional careers as civil judges and most of them remain civil judges until retirement. Things are quite different for administrative judges. First of all, they are civil servants and not *Magistrats*. Second, except for judges from the *Conseil d'État* who, for the majority, attended the National School of Administration ("*École Nationale d'Administration"* after a strong competitive examination, administrative judges are recruited among civil servants, lawyers and high level law graduates. This is due to the need for a growing number of judges in the last decades. As a result, over the last decade, only 19% of the new administrative judges did not exercise as civil servants in the past. This means that 81% of the new administrative judges used to work with state officials and local authorities, i.e. the parties they have to judge.

3 The Database

To observe whether judges differently treat plaintiffs and defendants, we study the entire set of decisions of the *Cour de Cassation* and the *Conseil d'État* concerning environmental accidents and damages between 1956 and 2010. Our database is constructed on two French official legal engines that list all cases before the *Cour de Cassation* and the *Conseil d'État* since 1956. To collect the entire set of environmental cases we used the following keywords: pollution, *trouble de voisinage* (nuisance to neighborhood), environmental damages, environmental risk, environmental loss, ecological risk, ecological loss, ICPE, Seveso, IPPC,[13] and risk prevention. We obtained 614 different cases. In the following subsections we present the variables of interest and a set of control variables. All the variables are dummy variables noted "1" when present in cases and "0" otherwise.

[13]For *Integrated Pollution Prevention and Control*. See European Directive EC 96/61 imposing the application of the "Best Available Technology" principle to polluting facilities.

3.1 Dependent variables: judges' decisions

We focus on three dependent variables to observe whether judges have a pro-plaintiff bias and to compare administrative and civil judges' severity. The first one is "pro-defendant decisions"(*Prodef*), noted 1 when judges rule in favor of the defendant and 0 otherwise. The second one is "reversal decisions" (*Reverse*), noted 1 when judges reverse the decision of the lower court and 0 otherwise. Finally, the third variable to be tested is "remand decisions" (*Remand*), and is noted 1 when judges from either the *Cour de Cassation* or the *Conseil d'État* send the case back to the lower court.[14]

3.2 Explanatory variables

For each set of regressions, we observe the impact of two explanatory variables: *defendant appeal* and *Conseil d'État*. *Defendant appeal* is noted 1 when the defendant appeals the decision of the lower court and 0 when the plaintiff appeals.[15] This variable will help determining whether judges' decisions differ as the identity of the appellant changes. More precisely, if judges' decisions to reverse the ruling of a lower court is negatively correlated with this variable, we would interpret it as an evidence of a pro-plaintiff bias. This is the first hypothesis to be tested, *(H1)*.

The most important variable of interest is "*Conseil d'État*". It is noted 1 when the final appeal is reviewed by the *Conseil d'État* and 0 when reviewed by the *Cour de Cassation*. This variable will help determining whether the fact of being judged by the *Conseil d'État* instead of the *Cour de Cassation* is likely to change the result of a litigation, all other things being equal. First, if the chances to have a pro-defendant (*resp. pro-plaintiff*) outcome are lower (*higher*) in the *Conseil d'État* than in the *Cour de Cassation*, this would imply that the *Conseil d'État* has a pro-plaintiff bias. We would interpret this result as the willingness of judges from the *Conseil d'État* to correct a pro-defendant bias of lower administrative courts *(H2)*. In the same vein, if the *Conseil d'État* is less likely to remand cases to lower courts than the *Cour de Cassation*, it would imply that judges from the *Conseil d'État* are less confident in the capacity of lower courts to correctly rule cases.

[14]Remand decisions are more likely to occur when judges decided first to reverse, or partly reverse or confirm, lower courts decisions. From an econometric point of view, this implies that the set of regressions concerning remand decisions may suffer from endogeneity. Though, our database does not allow us to define any instrument variable to deal with such endogeneity problems. Consequently, results from this set of regressions must be interpreted with caution.

[15]In our database, there is only one appellant in each case.

Again, this result would be interpreted as further evidence of the existence of a pro-defendant bias in lower courts *(H3)*.

We can summarize our main hypotheses to be tested as follows:

H1. Appeal by the defendant decreases the probability of a reversal. Judges from the *Conseil d'État* and the *Cour de Cassation* have a pro-plaintiff bias.

H2. The probability of having a pro-defendant outcome is lower in the *Conseil d'État*. Judges from the *Conseil d'État* tend to be "pro-plaintiff" to correct the pro-defendant bias of lower courts' administrative judges.

H3. The probability of a remand decision is lower in the *Conseil d'État*. Judges from the *Conseil d'État* are more likely to provide definitive ruling than judges from the *Cour de Cassation* as they consider that administrative judges from lower courts are biased.

3.3 Control variables

Environmental lawsuits may be brought for different reasons and may involve different natural assets. To cope with this heterogeneity and its potential influence over the correlation we want to observe, we control several aspects of an environmental lawsuit: *i)* did the defendant comply with regulatory norms and standards? *ii)* Which legal grounds have been invoked by the appellant? *iii)* Which natural assets have been damaged?

i) *Compliance* with regulation is a dummy variable, noted 1 if the defendant complied with regulation and 0 otherwise.

ii) Legal grounds describe the legal basis used by the appellant to get his case to the *Cour de Cassation* or the *Conseil d'État*. In our database, we observed five different legal grounds: disagreement on the amount of compensation (which we take as our reference variable), disagreement on the relevance of the proof of wrongful or negligent behavior (*Proof*), disagreement with lower court's treatment of causation (*Causality*), disagreement with lower court's treatment of the uncertainty about the consequences - in the case of a lawsuit primarily brought by potential victims claiming that a given activity imposes an imminent risk of accident - (*Uncertainty*), and disagreement on the due process of law or on the legal procedure followed by the lower court (*Procedure*).

iii) Natural assets are classified as follows: water (reference variable), soil, air, sea and noise.

Finally, some private firms may be entitled to provide public services (see Section 2). In this case, they are either subject to civil law if they provide a public service but do not exercise any administrative authority, or to administrative law if they provide a public service and exercise an administrative authority (*"mission de service public avec prérogatives de puissance publique"*). Given the nature of their activity, these firms may be more likely to influence lower courts' judges. Consequently the variable *Service public* may be used to observe whether both the *Cour de Cassation* and the *Conseil d'État* are more severe when dealing with these private firms. Should it be the case, we would interpret this result as evidence that both civil and administrative courts tend to favor defendants who are connected with the government. In other words, this variable will help controlling for a potential pro-plaintiff bias due to the nature of the defendant's activity. Our hypothesis is that this variable should not have any significant influence if only lower courts' administrative judges have a pro-defendant bias.

4 The results

Table 1 reports the number of cases dealt with in the *Cour de Cassation* and the *Conseil d'État*, distinguishing appeals initiated by the plaintiff and by the defendant.

	Cassation	*Conseil d'État*	Total
Plaintiff appeal	187 (30.45%)	37 (6.03%)	224 (36.48%)
Defendant appeal	303 (49.35%)	87 (14.17%)	390 (63.52%)
Total	490 (79.80%)	124 (20.20%)	614

Table 1: Appeals

We observe that defendants appellate more often than plaintiffs in both courts (two thirds of the total number of appeals). This could constitute a bias to be taken into account in the regressions below. Indeed, it may be that defendants file for an appeal even when win chances on the merits are less than one half. Therefore, we should be careful when interpreting the coefficient of the variable *Defendant appeal*.

The *Conseil d'État* is dealing with much less cases than the *Cour de Cassation*, since it is only reviewing about 20% of the cases. However, no structural difference in the repartition of the cases between plaintiffs and defendants, or in the nature of the cases treated by both courts

arises from simple observation. This is confirmed by Two-sample t-tests for equal variance and means on different variables.[16]

A pro-defendant bias in the administrative court, as long as it is perceived as such by judges from the *Conseil d'État*, should give rise to a correction mechanism *(H2)*, that would be translated into pro-plaintiff bias in the appeal outcome (see Shavell, 1995). Then, we should expect more reversal decisions favorable to plaintiffs, and this effect should be stronger for cases dealt with by the *Conseil d'État* rather than by the *Cour de Cassation (H1)*. Last, the decision of upper courts not to fully review a case but to send it back to the lower court is indicative of trust in the capacity of the latter to deal properly with it. We thus also look at remand decisions by appellate courts, the premises being that the *Conseil d'État* should be more reluctant to send back a case than the *Cour de Cassation* if administrative courts are suspected to favor the government as a litigant *(H3)*.

In analyzing the results, we proceed as follows. We first report the estimations explaining the pro-defendant and reversal decisions. We then study the remand decisions to lower courts.

4.1 Pro-defendant and reversal decisions

Pro-defendant and reversal decisions can be linked in a structural though non observable way. For this reason, we run bivariate Probit regressions explaining simultaneously the two variables. Indeed, these two variables are significantly correlated, confirming that we must rely on bivariate approach and not just run separate regressions. Table 3 reports the results of our basic regression.

■ **Pro-defendant decisions.** Let us start by analyzing the results regarding the pro-defendant decisions (the left column for each model in Table 3).

First, both courts tend to confirm the decisions adopted by lower trial level. This can be seen from the negative and strongly significant coefficients of the variable *Defendant appeal* in the three models. Indeed, a defendant who appeals has 29% less chances of obtaining a pro-defendent outcome than a plaintiff who appeals.[17] This confirms the strong tendency of appellate courts

[16] Two-sample t-test is a traditional Fisher test comparing the variances and means of two populations. To confirm that the nature of cases is similar in both samples, we compare the cases according to their legal characteristics: legal grounds invoked by appellant, natural assets damaged and compliance with regulation. The results of the two-sample t-tests are given in Appendix A.

[17] The coefficient of *Defendant appeal* measures the probability $Pr(\text{Pro-defendant}|\text{Defendant appeal})$ for the variable

to affirm lower-court decisions as shown by Eisenberg and Heise (2009), and particularly by Eisenberg, Fisher and Rosen-Zvi (2011).[18]

Second, asymmetric treatment of defendants by the two courts is revealed by the negative and significant coefficient of the variable *Conseil d'État*. Indeed a defendant has 11% less chances of obtaining a favorable decision when the appeal takes place in the *Conseil d'État* rather than in the *Cour de Cassation*. Defendants are thus treated differently depending on the court which is in charge. This result strongly contradicts Amaral-Garcia and Garoupa (2012), since they do not obtain any difference in the treatment of defendants between the civil and the administrative sections of the Spanish Supreme Court. Given the outcome of our Two-sample t-tests for equal variance and means, our finding cannot be related to any structural difference between cases that our data do not allow to observe, but rather come from a higher severity of the *Conseil d'État* with respect to defendants.

Third, compliance with the regulation increases significantly the defendant's chances of a favorable decision in both courts. This could be interpreted as the existence of a "defense for compliance with regulation", but one should be careful as this defense tends to be less often accepted by judges as time goes by (see Bentata 2013b).

■ **Reversal decisions.** From the right column of each model in Table 3, we can see that an appeal from a defendant reduces the chances of a reversal decision. An appeal by a defendant reduces by 16% the chances of obtaining a reversal when compared with an appeal by a plaintiff. We have already seen that appeal courts tend to confirm a lower court's decision and, when they reverse it, they tend to favor the plaintiff. This could be interpreted as a pro-plaintiff bias but one must be careful: it could just reflect the fact that defendants go to appellate courts more easily than plaintiffs, maybe even when their chances of a win on the merit are quite low (see the earlier comment on Table 1).

Pro-defendant to take the value 1 when the value of *Defendant appeal* changes from 0 to 1. Though, recall that *Defendant appeal* is a binary variable noted 1 if the defendant appeals and 0 otherwise, i.e. if the plaintiff appeals, and that *Pro-defendant* is also a binary variable noted 1 if the decision is pro-defendant and 0 otherwise, i.e. if the decision is pro-plaintiff. Thus observing the chances for *Pro-defendant* to take the value 1 when *Defendant appeal* goes from 0 to 1 is equivalent to measuring the chances of *Pro-defendant* to go from 1 to 0 when *Defendant appeal* goes from 1 to 0, which is the probability Pr(Pro-plaintiff|Plaintiff appeal) of having a pro-plaintiff outcome when the plaintiff appeals. Consequently, the coefficient of *Defendant appeal* which measures the correlation between *Defendant appeal* and *Pro-defendant* also measures the correlation between *Plaintiff appeals* and *Pro-plaintiff*. As a result, the chances for the appellant, being either the plaintiff or the defendant, to obtain a positive outcome are always lower than the chances of the respondent.

[18] The affirmance rate in Eisenberg et al. (2011) in both civil and criminal cases is about 70%, similar to the figure usually obtained in mandatory jurisdictions.

The chances of a reversal decision are 14% lower in the *Conseil d'État* than in the *Cour de Cassation*. It thus seems that the *Conseil d'État* is more affirmative than the *Cour the Cassation*. This tendency to confirm the administrative courts' decisions depends on the identity of the litigant filing the appeal. Indeed, when we interact the variable *Defendant appeal* with the variable *Conseil d'État*, we see that a defendant appealing before the *Conseil d'État* has 26% less chances of obtaining a reversal decision than if it was a plaintiff who appealed (see Table 4). Hence, the *Conseil d'État* is more reluctant to reverse a decision than the *Cour de Cassation* and,as shown in the *Pro-defendant* regressions, when it reverses, it is more favorable to plaintiffs. Indeed, a defendant appealing in the *Conseil d'État* has twice less chances of obtaining a reversal decision than in the *Cour de Cassation* (see the coefficients of the interaction term *Defendant appeal*Conseil d'Èta*t in Table 4).

Overall, the observation of pro-defendant and reversal decisions allows the same conclusion: there is a difference in the treatment of litigants between the two appellate courts.

4.2 Remand decisions

We provide a novel insight on the decisions in appeal courts by looking at their remand decisions to lower courts. Their frequency can be considered of a proxy for the degree of trust of supreme courts towards lower courts on their capacity of reviewing a case. In our regression, if the coefficient for the variable *Conseil d'État* is non significant, this would mean that both courts have the same behavior regarding the remand decisions. However, if significant, then this would suggest a difference between both courts in their trust toward the lower level, a negative coefficient indicating a lower degree of trust or the willingness to have a definitive decision on the case. Whatever the underlying reason, a negative coefficient could indicate that the *Conseil d'État* adopts a correction behavior with respect to the administrative court.

From Table 5, we can see that the variable *Conseil d'État* is significant, and negatively correlated with remand decisions: a case presents 9% less chances of being referred in the *Conseil d'État* than in the *Cour de Cassation*.

5 Conclusions

This paper is a contribution to the empirical literature on courts' decisions, based on an original dataset on all French environmental cases brought to upper courts. Regressions have shown clear-cut results: upper courts tend to affirm lower courts' decisions and, when they reverse it, they tend to favor the plaintiffs. This severity with defendants is stronger in the *Conseil d'État* than in the *Cour de Cassation*. In addition, the former is more reluctant than the latter to refer the cases to lower courts. This behavior of the *Conseil d'État* could be indicative of a bias of the administrative courts towards defendants, meaning public utilities and/or the government. In this respect, our main findings go counter a series of results obtained earlier in the literature, where either no difference could be detected in the treatment of the government and private parties as litigants, either the government received a favorable treatment.

The limitation of our analysis is obviously the fact that there could be a selection effect at work. However, lacking the history of the cases in the lower courts and even before trial, we cannot control for it.

This analysis has been conducted for environmental cases, and it would be interesting to extend it towards other case categories. We keep this task for further work.

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Appendix A.

■ **Two-sample t-tests for equal variance and means.**

These tests measure the difference of variance and means for different variables for two samples, namely the *Cour de Cassation* and the *Conseil d'État*. The null hypothesis (H_0) is that both samples have similar variance and means. In Table 2, *p-values* are beyond the critical threshold of 0.1 for

	t	p-value
Defendant appeal	2.1019	0.0360
Pro-defendant decision	-1.7216	0.0856
Reversal decision	1.9062	0.0571
Remand decision	2.8391	0.0047
Public service	-0.1161	0.9076
Compensation	0.5530	0.5804
Compliance	-0.0308	0.9754
Proof	0.0293	0.9767
Causality	1.2773	0.2020
Uncertainty	-0.9135	0.3613
Procedure	-1.9723	0.0950
Water	-0.5533	0.5803
Soil	-0.0045	0.9964
Air	-1.1472	0.2518
Sea	1.7944	0.0732
Noise	1.2177	0.2238

Table 2: Two-sample t-tests

each control variables, except *Procedure* and *Sea* which account for only 21 cases. Therefore, as far as control variables are concerned, H_0 cannot be rejected, meaning that there is no structural difference on the corresponding variables between the two samples. On the other hand, the three dependent variables and the *Defendant appeal* variable have significantly different means and variances in each sample. Consequently, we can conclude that for similar cases, the *Conseil d'État* and the *Cour de Cassation* rule differently.

Table 3: Bivariate Probit model

	Restricted model (1)		Restricted model (2)		Complete model		Elasticities	
	Prodef	Reverse	Prodef	Reverse	Prodef	Reverse	Prodef	Reverse
Defendant appeal	-1.099***	-0.637***	-1.100***	-0.619***	-1.099***	-0.602***	-0.29	-0.16
	(0.123)	(0.126)	(0.129)	(0.130)	(0.132)	(0.132)		
Conseil d'État	-0.398**	-0.525***	-0.443***	-0.542***	-0.426**	-0.537***	-0.11	-0.14
	(0.165)	(0.175)	(0.169)	(0.176)	(0.171)	(0.178)		
Public service	0.159	0.333	0.134	0.278	0.145	0.236		
	(0.406)	(0.383)	(0.418)	(0.385)	(0.422)	(0.386)		
Compliance	0.820***	0.231*	0.841***	0.274**	0.850***	0.268*	0.23	0.07
	(0.131)	(0.131)	(0.136)	(0.135)	(0.138)	(0.137)		
Proof			-0.235	-0.116	-0.265	-0.116		
			(0.191)	(0.188)	(0.194)	(0.191)		
Causality			-0.345*	-0.453**	-0.296	-0.470**		-0.12
			(0.204)	(0.208)	(0.208)	(0.211)		
Uncertainty			0.326	-0.0441	0.316	-0.0687		
			(0.226)	(0.231)	(0.230)	(0.237)		
Procedure			-0.351*	-0.157	-0.338*	-0.171	-0.08	
			(0.202)	(0.198)	(0.204)	(0.201)		
Soil					-0.0555	-0.0948		
					(0.190)	(0.187)		
Air					-0.178	-0.401*		
					(0.200)	(0.207)		
Sea					0.539	-0.432		
					(0.388)	(0.382)		
Noise					-0.176	-0.0317		
					(0.165)	(0.168)		
Constant	-5.426	5.991	-5.080	6.443	-5.130	6.457		
	(1.068)	(5.095)	(1.068)	(5.095)	(1.068)	(5.042)		
Athrho	0.171**		0.159**		0.163**			
	(0.0758)		(0.0768)		(0.0774)			
Log-likelihood	-600.703		-590.877		-586.332			
Wald chi2	221.29		213.44		237.40			
McFadden R2	0.195		0.208		0.215			
Rho	0.291		0.1805		0.1820			
	(0.0094)		(0.0156)		(0.0156)			

Note. Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include a years fixed effect.

Table 4: Bivariate Probit model with interaction variable

	Restricted model (1)		Restricted model (2)		Complete model		Elasticities	
	Prodef	Reverse	Prodef	Reverse	Prodef	Reverse	Prodef	Reverse
Defendant appeal	-0.959***	-0.499***	-0.954***	-0.474***	-0.956***	-0.458***	-0.25	-0.12
	(0.131)	(0.133)	(0.136)	(0.137)	(0.139)	(0.140)		
Conseil d'État (CE)	0.0837	-0.0681	0.0475	-0.0640	0.0511	-0.0666		
	(0.232)	(0.231)	(0.235)	(0.234)	(0.237)	(0.236)		
Defendant appeal * CE	-0.963***	-0.966***	-1.001***	-0.999***	-0.975***	-0.990***	-0.26	-0.26
	(0.317)	(0.328)	(0.324)	(0.328)	(0.327)	(0.330)		
Public service	0.108	0.283	0.0800	0.223	0.975	0.182		
	(0.412)	(0.381)	(0.425)	(0.383)	(0.428)	(0.384)		
Compliance	0.854***	0.254*	0.882***	0.300**	0.887***	0.295**	0.23	0.08
	(0.133)	(0.133)	(0.138)	(0.136)	(0.140)	(0.138)		
Proof			-0.251	-0.125	-0.276	-0.125		
			(0.193)	(0.190)	(0.196)	(0.193)		
Causality			-0.387*	-0.484**	-0.339	-0.501**		-0.13
			(0.206)	(0.209)	(0.210)	(0.212)		
Uncertainty			0.300	-0.0583	0.291	-0.0807		
			(0.227)	(0.234)	(0.231)	(0.239)		
Procedure			-0.375*	-0.170	-0.361*	-0.184	-0.09	
			(0.205)	(0.201)	(0.206)	(0.203)		
Soil					-0.0627	-0.0962		
					(0.192)	(0.189)		
Air					-0.139	-0.383*		
					(0.203)	(0.209)		
Sea					0.506	-0.453		
					(0.389)	(0.383)		
Noise					-0.168	-0.0330		
					(0.167)	(0.169)		
Constant	-5.426	5.987	-5.279	6.647	-5.327	6.665		
	(1.068)	(5.042)	(2.035)	(8.503)	(2.035)	(8.503)		
Athrho	0.171**		0.159**		0.163**			
	(0.0758)		(0.0768)		(0.0774)			
Observations	614	614	614	614	614	614		

Note. Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include a years fixed effect.

Table 5: Logit/Probit models of remand decisions

	Restricted model (1)		Restricted model (2)		Complete model		Elasticities	
	Logit	Probit	Logit	Probit	Logit	Probit	Restricted (1)	Complete
Defendant appeal	-0.697*	-0.395*	-0.569	-0.320	-0.513	-0.286	-0.05	
	(0.380)	(0.206)	(0.399)	(0.217)	(0.410)	(0.225)		
Conseil d'État (CE)	-1.307**	-0.704**	-1.127*	-0.604*	-1.393**	-0.764**	-0.09	-0.09
	(0.615)	(0.342)	(0.649)	(0.349)	(0.695)	(0.371)		
Reverse	4.617***	2.499***	4.709***	2.560***	4.876***	2.699***	0.31	0.30
	(0.492)	(0.238)	(0.500)	(0.243)	(0.532)	(0.268)		
Public service	-2.378*	-1.416*	-2.444*	-1.435*	-2.700*	-1.530**	-0.15	-0.16
	(1.308)	(0.740)	(1.365)	(0.771)	(1.457)	(0.765)		
Compliance	-0.120	-0.0445	0.100	0.0655	0.0413	0.0512		
	(0.405)	(0.220)	(0.426)	(0.229)	(0.444)	(0.239)		
Proof			0.920	0.0556	0.0177	0.118		
			(0.556)	(0.299)	(0.573)	(0.314)		
Causality			-0.345	-0.188	-0.405	-0.224		
			(0.662)	(0.360)	(0.694)	(0.386)		
Uncertainty			-1.656**	-0.969**	-1.540*	-0.900**		-0.09
			(0.761)	(0.432)	(0.794)	(0.453)		
Procedure			-0.169	-0.0779	-0.225	-0.0978		
			(0.579)	(0.317)	(0.592)	(0.328)		
Soil					0.734	0.449		
					(0.578)	(0.304)		
Air					-0.0522	-0.0659		
					(0.724)	(0.392)		
Sea					-2.992**	-1.773**		
					(1.474)	(0.826)		
Noise					0.540	0.306		
					(0.558)	(0.310)		
Constant	-4.901***	-2.694***	-5.122***	-2.837***	-5.516***	-3.149***		
	(0.902)	(0.503)	(0.986)	(0.554)	(1.066)	(0.616)		
Observations	614	614	614	614	614	614		
LR test	232.271	222.932	230.637	230.923	238.604	240.444		
Hosmer-Lemeshow test	4.58	5.82	3.68	2.76	4.18	2.95		
	(0.8015)	(0.6669)	(0.8846)	(0.9482)	(0.8404)	(0.9374)		
McFadden R2	0.509	0.509	0.526	0.527	0.544	0.549		
Cox-Snell R2	0.368	0.367	0.377	0.378	0.387	0.390		
C-stat	90.97	90.76	92.20	91.38	92.20	91.38		

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects. Standard errors in parentheses. (1) We provide tests considered as fundamental and sufficient by Peng, Lee and Ingersoll (2002). (2) C-statistic measures the model's ability to correctly classify the actual value of *Remand*. For the first column, it means that the model assigned the correct actual outcome in 90.97% of all trials.

Appendix B - For the convenience of the referees, not for publication

We first start by running separate regressions for the *Conseil d'État* and for the *Cour de Cassation* explaining pro-defendant decisions (Table 6) and reversal decisions (Table 7). We use a Logit model since regressed variables are binary. Both Tables 6 and 7 report marginal effects with respect to a benchmark situation.

In Table 6, coefficients reflect the marginal variation in the chances of obtaining a pro-defendant decision with respect to a benchmark in which the plaintiff initiates the appeal to obtain compensation for an environmental harm caused by a defendant who did not comply with the regulatory standards, who did not have any public service mission and who deteriorated some water resource.

Whatever the court, the mere action of filing an appeal for a defendant strongly reduces its probability of obtaining a favorable decision. A defendant appelates in order to invalidate a lower court decision. Hence, an upper court which wishes to confirm lower courts' decisions in general will take a decision that goes counter the appealing defendant.

Remark 1. One should be cautious in interpreting directly this first result as indicating a pro-plaintiff behavior. Indeed, the variables *Defendant appeal* and *Plaintiff appeal* are symmetric - one takes value 1 when the other takes value 0 - and the same for the variables *Pro-defendant* and *Pro-plaintiff*. Therefore, we would have found the same coefficient and elasticity if we regressed pro-plaintiff decisions by plaintiff appeal: the probability of obtaining a pro-defendant decision when the defendant files the appeal is 26% lower than when the plaintiff files the appeal, but the probability of obtaining a pro-plaintiff decision when the plaintiff files the appeal is also 26% lower than when the defendant files the appeal. The negative coefficient of the variable *Defendant appeal* just demonstrates some affirmance attitude from upper courts, which are quite prone to confirm lower courts outcomes.

In Table 7, coefficients reflect the marginal variation in the chances of obtaining a reversal decision with respect to a benchmark in which the plaintiff files the appeal to obtain compensation for an environmental harm caused by a defendant who did not comply with the regulatory standards, who did not have any public service mission and who deteriorated some water resource.

The coefficient of the variable *Defendant appeal* is negative and significant, here too. The prob-

ability of obtaining a reversal decision is lower for a defendant who files an appeal than for a plaintiff who files an appeal.

Overall, Tables 6 and 7 thus show that upper courts tend to confirm lower courts' decisions and, when they reverse it, they tend to favor the plaintiffs.

Remark 2. The coefficient of the variable *Defendant appeal* is three times larger in the *Conseil d'État* than in the *Cour de Cassation*. This could suggest a stronger severity from the former than from the latter. This remains to be confirmed by appropriate regressions later.

In our analysis, the central explicative variable is the *Conseil d'État*. It is sometimes necessary to interact variables to give strength to some conclusions. As said in *Remark 1* above, the negative coefficient of the variable *Defendant appeal* does not allow, in itself, to conclude on a pro-plaintiff behavior of the *Conseil d'État* in Table 6. But, in a model explaining the reversal decisions, a variable interacting the *Conseil d'État (CE)* with the *Defendant appeal* would allow to determine whether there is a difference of treatment for defendants between the two courts. This interaction variable is thus introduced in Tables 8 and 9 (as well as in the bivariate models in Table 4).

From Tables 8 and 9, we see that no other interaction with the *Conseil d'État* is significant,[19] then none is included in the regressions.

Last, to ensure that the particular choice of a binary regression among the possible ones has no influence on our results, we compare Logit and Probit models for all our regressions: pro-defendant decisions with and without interaction with the *Conseil d'État* (Tables 10 and 11), reversal decisions with and without the interaction (Tables 12 and 13).

For all the regressions, the results for Logit and Probit approaches are rigorously identical: same significance, same elasticity, same $R2$ and even a same measure of concordance (C-stat). As a consequence, it does not really matter which model is selected.

As regards the regressions for remand decisions, an additional variable needs to be included. For obvious reasons, a remand decision to a lower court is strongly correlated with a reverse decision.[20] Thus, the variable *Reverse* is added in Table 5. We have an endogeneity problem

[19]The interaction between the *Conseil d'État* and the variable *Procedure* is significant in Table 8, but the variable *Procedure* is not first order in our analysis: it represents an appeal filed by a party on the ground of a lack in the respect of the legal procedure.

[20]One should have in mind that a reversal decision can be partial - in which case it can be followed by a reference

Table 6: Logit model of pro-defendant decisions
($Prodef = \alpha_0 + \alpha_1 Defappeal + \beta_i X_i$)

	Conseil d'État		Cour de Cassation	
	Restricted	Complete	Restricted	Complete
Defendant appeal	-3.628****	-4.375****	-1.773****	-1.817****
	(0.929)	(1.121)	(0.238)	(0.226)
Compliance	2.484***	3.515***	1.387****	1.461****
	(0.904)	(1.202)	(0.252)	(0.265)
Public service	n/a[1]	n/a[1]	-0.282	-0.480
			(0.806)	(0.823)
Legal ground				
Compensation (benchmark)[2]		-		-
Proof		-2.624		-0.335
		(1.978)		(0.339)
Causality		0.401		-0.737
		(2.062)		(0.401)
Uncertainty		0.404		0.414
		(1.980)		(0.442)
Procedure		-2.396		-0.355
		(2.222)		(0.392)
Polluted resource				
Water (benchmark)[2]		-		-
Soil		-0.433		0.057
		(1.726)		(0.364)
Air		-2.311		-0.184
		(1.671)		(0.381)
Sea		n/a[3]		1.007
				(0.700)
Noise		-1.522		-0.222
		(1.622)		(0.316)
Constant	0.208	1.399	-0.799	-0.891
	(2.931)	(3.262)	(1.174)	(1.216)
Observations	124	124	490	490
Pseudo-R2 (Mc Fadden's adj)	0.473	0.613	0.235	0.256

Notes. **** $p < 0.001$, *** $p < 0.01$. All the regressions include a year fixed effect. (1) The variable *Public service* is associated to any private firm having a public service mission. Such cases are reviewed by civil courts unless the firm obtained a privilege of public authorities (*Prï¿œrogative de puissance publique*). In our database, three cases fall in this category and the decision was each time against the defendant. As a consequence, this variable perfectly predicts a pro-plaintiff decision and has no statistical value. (2) In Logit/Probit regressions, binary variables represent events studied with respect to a benchmark scenario. In our regressions, coefficients of the variables *Legal ground* and *Polluted resource* are estimated as marginal effects with respect to a benchmark situation in which the damaged resource is *Water* and the legal ground is the desire to obtain compensation. (3) Only in one case the polluted resource is the sea in the whole set of judgments by the *Conseil d'État*. Hence, this variable automatically predicts a unique possible event and has no statistical value.

in this regression since remand and reversal decisions both depend on common variables that remain unobservable in our dataset. Since no purely exogenous variables that could be used

decision - but it can also be complete. There are not enough cases for each situation to take into account in fine detail the degree of reversal by the upper court in our analysis.

Table 7: Logit model of reversal decisions
($Reverse = \alpha_0 + \alpha_1 Defappeal + \beta_i X_i$)

	Conseil d'État		Cour de Cassation	
	Restricted	Complete	Restricted	Complete
Defendant appeal	-1.464**	-1.999**	-0.710***	-0.599**
	(0.656)	(0.825)	(0.233)	(0.246)
Compliance	1.872**	1.841*	0.437*	0.575**
	(0.859)	(0.972)	(0.245)	(0.255)
Public service	-0.938	-2.519	0.723	0.465
	(1.807)	(2.429)	(0.733)	(0.750)
Legal ground				
Compensation (benchmark)[1]		-		-
Proof		-0.892		-0.323
		(1.423)		(0.355)
Causality		-0.179		-1.195***
		(1.448)		(0.404)
Uncertainty		2.561		-0.544
		(1.716)		(0.456)
Procedure		-0.581		-0.436
		(1.324)		(0.376)
Polluted resource				
Water (benchmark)[1]		-		-
Soil		0.701		-0.355
		(1.188)		(0.353)
Air		0.319		-0.585
		(1.289)		(0.390)
Sea		n/a[2]		-1.198
				(0.748)
Noise		-1.123		0.047
		(1.163)		(0.313)
Constant	-2.858**	-2.676	-1.311	-1.232
	(1.412)	(1.935)	(1.193)	(1.227)
Observations	124	124	490	490
Pseudo-R2 (Mc Fadden's adj)	0.209	0.301	0.08	0.107

Notes. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects. (1) In Logit/Probit regressions, binary variables represent events studied with respect to a benchmark scenario. In our regressions, coefficients of the variables *Legal ground* and *Polluted resource* are estimated as marginal effects with respect to a benchmark situation in which the damaged resource is *Water* and the legal ground is the desire to obtain compensation. (2) Only in one case the polluted resource is the sea in the whole set of judgments by the *Conseil d'État*. Hence, this variable automatically predicts a unique possible event and has no statistical value.

as instruments are available, we cannot really deal with this problem. However, it should be noticed that when running the following regression :

$$Remand = \alpha_0 + \alpha_1 Defappeal + \alpha_2 Reverse + \beta_i X_i + \epsilon,$$

the covariance between *Reverse* and residuals is very weak, since $cov(Reverse, \epsilon) = 0.0088$. The

above mentioned problem may thus be ignored.

The tests reported in Figures 1, 2 and 3 allow to test for the reliability - or predictive power - of the previous regressions.

(1) The graph in the upper-left corner represents the marginal effects of our two independent variables. As we can see, the variable *Conseil d'État* lowers the chances of having a pro-defendant outcome, a reversal decision and a remand decision at the 95% confidence interval, i.e. even if we take the lower bound of the confidence interval, we observe that the chances of having a pro-defendant outcome, a reversal decision and a remand decision in the *Conseil d'État* are respectively 4%, 5% and 2% lower than in the *Cour de Cassation*.

(2) The graph in the upper-right corner represents the sensitivity and specificity of the model. Sensitivity tests the model's ability to identify positive results and specificity is the model's ability to predict negative results. Cut-off probability represents the different threshold above which the predicted values of *Defendant appeal* are considered as being positive, i.e. *Defendant appeal*=1.

(3) The graph in the downer-left corner represents the trade-off in sensitivity for specificity, i.e. the model's ability to detect true positive outcomes (sensitivity) while rejecting false negative outcomes (1-specificity). The area under the curve (AUC) provides a graphic analysis of the model's goodness of fit, measuring the probability that an actual positive outcome has a higher predicted probability than an actual negative outcome. According to Hosmer et al. (2013), an $AUC > 0.8$ is considered as an excellent discrimination between true positive and false negative outcomes, and an AUC between 0.7 and 0.8 is considered as an acceptable discrimination. Consequently, we can conclude that our three models fit correctly the data and provide relevant estimations.

Table 8: Pro-defendant decisions - interaction of all variables with CE
($Prodef = \alpha_0 + \alpha_i X_i + \beta_i CE * X_i$)

	(1)	(2)	(3)	(4)
Defendant appeal	-1.819****	-1.583****	-1.663****	-1.748****
	(0.211)	(0.221)	(0.236)	(0.247)
Defendant appeal*CE	-1.347***	-2.002****	-1.918***	-2.092***
	(0.432)	(0.576)	(0.668)	(0.748)
Public service	0.0233	-0.318	-0.582	-0.448
	(0.775)	(0.794)	(0.826)	(0.833)
Compliance		1.375****	1.426****	1.447****
		(0.239)	(0.252)	(0.262)
Compliance*CE		0.554	1.064	1.435
		(0.495)	(0.757)	(0.903)
Legal ground				
Proof			-0.274	-0.392
			(0.347)	(0.357)
Proof*CE			-1.278	-0.527
			(0.830)	(0.958)
Causality			-0.819**	-0.785**
			(0.375)	(0.390)
Causality*CE			0.497	1.050
			(0.932)	(1.059)
Uncertainty			0.388	0.445
			(0.422)	(0.455)
Uncertainty*CE			0.120	-0.975
			(1.001)	(1.244)
Procedure			-0.381	-0.368
			(0.368)	(0.380)
Procedure*CE			-2.257**	-2.195*
			(1.097)	(1.133)
Polluted resource				
Soil				0.0180
				(0.368)
Soil*CE				-2.000
				(1.225)
Air				-0.161
				(0.387)
Air*CE				-1.170
				(1.242)
Sea				0.933
				(0.684)
Noise				-0.296
				(0.323)
Noise*CE				-0.667
				(1.028)
Risk				-0.465
				(0.489)
Risk*CE				2.688**
				(1.316)
Constant	-12.00	-12.87	-11.64	-11.92
	(403.6)	(622.9)	(507.0)	(574.1)
Observations	609	609	609	607

Notes. **** $p < 0.001$, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 9: Reversal decisions - interaction of all variables with CE
($Reverse = \alpha_0 + \alpha_i X_i + \beta_i CE * X_i$)

	(1)	(2)	(3)	(4)
Defendant appeal	-0.842****	-0.768****	-0.724***	-0.726***
	(0.214)	(0.220)	(0.232)	(0.238)
Defendant appeal*CE	-1.688****	-1.693****	-1.962***	-1.869***
	(0.476)	(0.517)	(0.633)	(0.662)
Public service	0.882	0.755	0.600	-0.496
	(0.718)	(0.723)	(0.734)	(0.740)
Public service*CE	-1.247	-1.286	-1.519	-2.188
	(1.539)	(1.590)	(1.725)	(1.822)
Compliance		0.419*	0.544**	0.558**
		(0.234)	(0.245)	(0.254)
Compliance*CE		-0.0972	-0.516	-0.770
		(0.446)	(0.637)	(0.703)
Legal ground				
Proof			-0.201	-0.130
			(0.334)	(0.344)
Proof*CE			-0.136	-0.807
			(0.763)	(0.924)
Causality			-0.967**	-1.036***
			(0.382)	(0.395)
Causality*CE			0.994	1.055
			(0.852)	(0.927)
Uncertainty			-0.295	-0.245
			(0.432)	(0.472)
Uncertainty*CE			1.367	0.00273
			(0.984)	(1.255)
Procedure			-0.242	-0.228
			(0.358)	(0.369)
Procedure*CE			0.00975	-0.358
			(0.871)	(0.924)
Polluted resource				
Soil				-0.258
				(0.365)
Soil*CE				1.456
				(0.914)
Air				-0.614
				(0.409)
Air*CE				0.186
				(1.033)
Sea				-0.692
				(0.679)
Noise				0.125
				(0.322)
Noise*CE				-0.310
				(0.0957)
Risk				0.0480
				(0.0452)
Risk*CE				1.994
				(1.277)
Constant	13.06	13.06	14.03	14.09
	(684.9)	(684.9)	(684.9)	(682.9)
Observations	579	579	579	574

Notes. **** $p < 0.001$, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 10: Logit/Probit models of pro-defendant decisions

	Restricted model (1)		Restricted model (2)		Complete model		Elasticities	
	Logit	Probit	Logit	Probit	Logit	Probit	Restricted (1)	Complete
Defendant appeal	-1.837***	-1.091***	-1.857***	-1.093***	-1.851***	-1.089***	-0.29	-0.29
	(0.213)	(0.124)	(0.223)	(0.129)	(0.228)	(0.132)		
Conseil d'État (CE)	-0.694**	-0.408**	-0.769***	-0.452***	-0.745**	-0.435**	-0.11	-0.12
	(0.284)	(0.165)	(0.292)	(0.169)	(0.296)	(0.171)		
Public service	0.332	0.157	0.253	0.129	0.285	0.143		
	(0.684)	(0.409)	(0.709)	(0.420)	(0.721)	(0.424)		
Compliance	1.406***	0.817***	1.443***	0.837***	1.464***	0.848***	0.23	0.23
	(0.228)	(0.131)	(0.236)	(0.135)	(0.240)	(0.137)		
Proof			-0.415	-0.226	-0.473	-0.261		
			(0.329)	(0.192)	(0.336)	(0.195)		
Causality			-0.588*	-0.341*	-0.496	-0.293		
			(0.351)	(0.205)	(0.360)	(0.209)		
Uncertainty			0.552	0.324	0.524	0.311		
			(0.394)	(0.226)	(0.405)	(0.230)		
Procedure			-0.558	-0.337*	-0.540	-0.327		-0.09
			(0.347)	(0.202)	(0.352)	(0.204)		
Soil					-0.130	-0.0624		
					(0.328)	(0.189)		
Air					-0.313	-0.191		
					(0.343)	(0.200)		
Sea					0.905	0.535		
					(0.668)	(0.384)		
Noise					-0.336	-0.184		
					(0.284)	(0.164)		
Constant	-0.811	-0.458	-0.978	-0.541	-0.865	-0.484		
	(1.174)	(0.713)	(1.216)	(0.741)	(1.228)	(0.739)		
Observations	611	611	611	611	611	611		
LR test	195.354	194.007	209.050	208.045	213.407	212.388		
Hosmer-Lemeshow test	3.32	3.79	3.46	6.72	7.15	11.44		
	(0.913)	(0.876)	(0.902)	(0.567)	(0.520)	(0.178)		
McFadden R2	0.244	0.242	0.261	0.260	0.264	0.265		
Cox-Snell R2	0.274	0.272	0.290	0.289	0.295	0.294		
C-stat	77.09	76.92	77.41	76.92	77.41	76.76		

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects. Standard errors in parentheses.(1) We provide tests considered as fundamental and sufficient by Peng, Lee, and Ingersoll, (2002). (2) C-statistic measures the model's ability to correctly classify the actual value of *Remand*. For the first column, it means that the model assigned the correct actual outcome in 77.09% of all trials.

Table 11: Logit/Probit models of pro-defendant decisions - interaction with CE

	Restricted model (1)		Restricted model (2)		Complete model		Elasticities	
	Logit	Probit	Logit	Probit	Logit	Probit	Restricted (1)	Complete
Defendant appeal	-1.602***	-0.952***	-1.615***	-0.948***	-1.615***	-0.948***	-0.26	-0.26
	(0.224)	(0.132)	(0.234)	(0.137)	(0.239)	(0.139)		
Conseil d'État (CE)	0.123	0.0951	0.0702	0.0568	0.0726	0.0600		
	(0.401)	(0.237)	(0.405)	(0.239)	(0.411)	(0.242)		
Defendant appeal*CE	-1.707***	-0.976***	-1.793***	-1.008***	-1.739***	-0.983***	-0.27	-0.26
	(0.566)	(0.319)	(0.575)	(0.325)	(0.582)	(0.328)		
Public service	0.234	0.105	0.149	0.0769	0.192	0.0982		
	(0.695)	(0.415)	(0.727)	(0.427)	(0.739)	(0.431)		
Compliance	1.461***	0.852***	1.513***	0.878***	1.523***	0.885***	0.23	0.23
	(0.231)	(0.133)	(0.240)	(0.138)	(0.244)	(0.139)		
Proof			-0.447	-0.244	-0.495	-0.272		
			(0.331)	(0.193)	(0.337)	(0.196)		
Causality			-0.668*	-0.384*	-0.578	-0.336		
			(0.352)	(0.207)	(0.362)	(0.211)		
Uncertainty			0.524	0.296	0.503	0.284		
			(0.396)	(0.227)	(0.406)	(0.231)		
Procedure			-0.604*	-0.365*	-0.586*	-0.353*		-0.09
			(0.351)	(0.205)	(0.356)	(0.207)		
Soil					-0.124	-0.0703		
					(0.330)	(0.192)		
Air					-0.222	-0.149		
					(0.347)	(0.203)		
Sea					0.840	0.502		
					(0.669)	(0.386)		
Noise					-0.308	-0.174		
					(0.288)	(0.166)		
Constant	-0.881	-0.504	-1.048	-0.581	-0.937	-0.524		
	(1.165)	(0.708)	(1.210)	(0.736)	(1.222)	(0.735)		
Observations	611	611	611	611	611	611		

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects. Standard errors in parentheses.

Table 12: Logit/Probit models of reversal decisions

	Restricted model (1)		Restricted model (2)		Complete model		Elasticities	
	Logit	Probit	Logit	Probit	Logit	Probit	Restricted (1)	Complete
Defendant appeal	-0.980***	-0.584***	-1.953***	-0.568***	-0.929***	-0.551***	-0.15	-0.16
	(0.212)	(0.124)	(0.220)	(0.129)	(0.223)	(0.131)		
Conseil d'État (CE)	-0.862***	-0.531***	-0.904***	-0.553***	-0.901***	-0.548***	-0.14	-0.16
	(0.304)	(0.174)	(0.307)	(0.176)	(0.310)	(0.179)		
Public service	0.532	0.333	0.438	0.275	0.354	0.234		
	(0.635)	(0.384)	(0.641)	(0.387)	(0.644)	(0.388)		
Compliance	0.362	0.240*	0.438*	0.281**	0.438*	0.273**	0.05	0.08
	(0.223)	(0.131)	(0.229)	(0.134)	(0.233)	(0.136)		
Proof			-0.190	-0.122	-0.196	-0.122		
			(0.317)	(0.188)	(0.324)	(0.192)		
Causality			-0.786**	-0.469**	-0.832**	-0.486**		-0.14
			(0.356)	(0.209)	(0.362)	(0.212)		
Uncertainty			-0.0617	-0.0506	-0.0969	-0.0723		
			(0.394)	(0.232)	(0.403)	(0.237)		
Procedure			-0.251	-0.163	-0.278	-0.176		
			(0.336)	(0.198)	(0.341)	(0.200)		
Soil					-0.163	-0.0953		
					(0.318)	(0.187)		
Air					-0.726**	-0.393*		
					(0.363)	(0.205)		
Sea					-0.734	-0.412		
					(0.671)	(0.376)		
Noise					-0.0523	-0.0332		
					(0.286)	(0.167)		
Constant	-1.211	-0.770	-1.240	-0.779	-1.200	-0.749		
	(1.195)	(0.714)	(1.207)	(0.723)	(1.214)	(0.728)		
Observations	578	578	578	578	578	578		
LR test	77.458	78.648	83.938	85.166	89.228	89.911		
Hosmer-Lemeshow test	10.03	8.48	5.87	6.65	6.51	5.39		
	(0.262)	(0.388)	(0.662)	(0.574)	(0.589)	(0.716)		
McFadden R2	0.144	0.116	0.123	0.125	0.131	0.132		
Cox-Snell R2	0.125	0.127	0.135	0.137	0.143	0.144		
C-stat	74.91	74.05	74.05	73.70	76.12	75.61		

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects. Standard errors in parentheses. (1) We provide tests considered as fundamental and sufficient by Peng, C-Y, K.L. Lee, K.L. and G.M. Ingersoll, (2002) An Introduction to Logistic Regression Analysis and Reporting, *The Journal of Educational Research*, 96(1): 1-13. (2) C-statistic measures the model's ability to correctly classifiy the acutal value of *Remand*. For the first column, it means that the model assigned the correct actual outcome in 74.91% of all trials.

Table 13: Logit/Probit models of reversal decisions - interaction with CE

	Restricted model (1)		Restricted model (2)		Complete model		Elasticities	
	Logit	Probit	Logit	Probit	Logit	Probit	Restricted (1)	Complete
Defendant appeal	-0.767***	-0.454***	-0.732***	-0.433***	-0.712***	-0.417***	-0.13	-0.12
	(0.224)	(0.132)	(0.231)	(0.136)	(0.235)	(0.138)		
Conseil d'État (CE)	-0.0869	-0.0678	-0.0801	-0.0675	-0.0925	-0.0708		
	(0.397)	(0.235)	(0.403)	(0.238)	(0.407)	(0.239)		
Defendant appeal*CE	-1.667***	-0.953***	-1.739***	-0.986***	-1.704***	-0.976***	-0.28	-0.27
	(0.587)	(0.325)	(0.588)	(0.326)	(0.594)	(0.328)		
Public service	0.458	0.282	0.360	0.221	0.277	0.181		
	(0.640)	(0.381)	(0.649)	(0.383)	(0.652)	(0.385)		
Compliance	0.395*	0.262**	0.476**	0.306**	0.470**	0.300**	0.06	0.05
	(0.226)	(0.132)	(0.232)	(0.136)	(0.235)	(0.138)		
Proof			-0.209	-0.128	-0.211	-0.127		
			(0.319)	(0.190)	(0.326)	(0.193)		
Causality			-0.842**	-0.493**	-0.880**	-0.510**		-0.14
			(0.357)	(0.210)	(0.363)	(0.213)		
Uncertainty			-0.0981	-0.0624	-0.121	-0.0825		
			(0.398)	(0.235)	(0.406)	(0.239)		
Procedure			-0.268	-0.174	-0.290	-0.186		
			(0.339)	(0.200)	(0.344)	(0.203)		
Soil					-0.139	-0.0980		
					(0.321)	(0.189)		
Air					-0.673*	-0.376*		
					(0.366)	(0.208)		
Sea					-0.767	-0.434		
					(0.670)	(0.377)		
Noise					-0.0383	-0.0347		
					(0.289)	(0.169)		
Constant	-1.268	-0.806	-1.287	-0.815	-1.249	-0.785		
	(1.191)	(0.711)	(1.203)	(0.720)	(1.210)	(0.725)		
Observations	578	578	578	578	578	578		

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects.

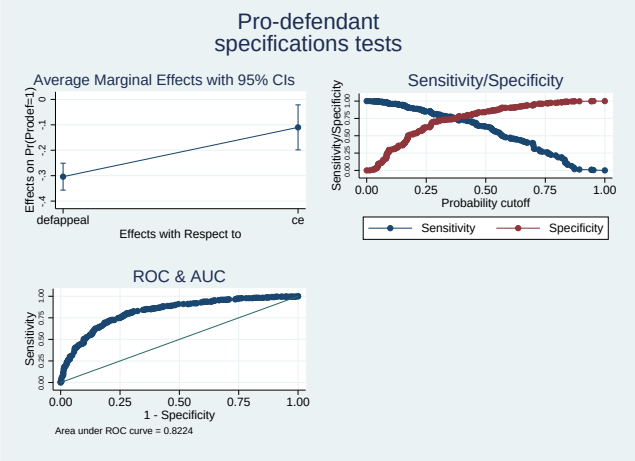

Figure 1: Graphic tests for pro-defendant decisions

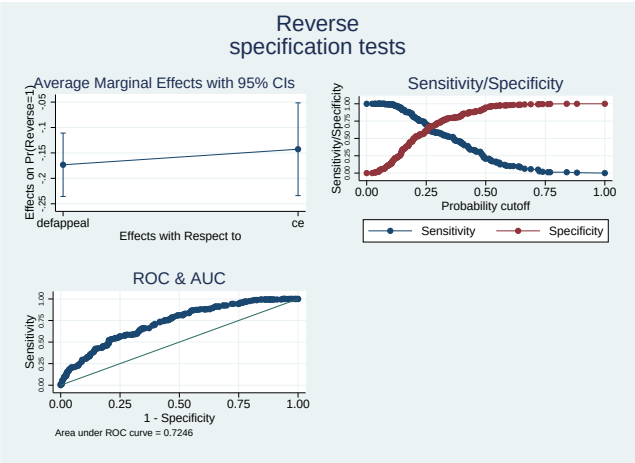

Figure 2: Graphic tests for reverse decisions

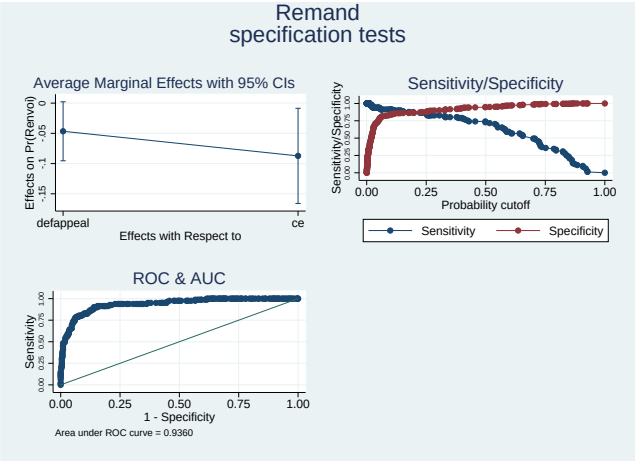

Figure 3: Graphic tests for remand decisions