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# Plea bargaining procedures worldwide: Drivers of introduction and use.

Gabriele Paolini\* Elena Kantorowicz-Reznichenko† Stefan Voigt‡

## Abstract

*Over the last three decades, plea bargaining procedures have been adopted by a large number of jurisdictions worldwide. However, a comprehensive account of the current adoption and use of such procedures is still missing. We survey 174 jurisdictions, finding that 101 of them have a formalized plea-bargaining procedure. For 52 jurisdictions, we also compute a plea-bargaining rate, defined as the percentage of convictions imposed through plea bargaining over all criminal convictions imposed. By employing our novel dataset, we find that both a relative majority of Muslims in the population and the French and Scandinavian legal origins are associated with lower probabilities of formalizing plea bargaining. Regarding its use in practice, an increase in GDP per capita is associated with greater plea-bargaining rates up to a certain point, after which the relationship becomes negative. The Spanish and Socialist legal origins, a looser regulation of plea bargaining, and the presence of jury trials are all associated with higher plea-bargaining rates.*

**Keywords:** plea bargaining; Law and Economics; Empirical Legal Studies; criminal procedure; comparative law.

## 1. Introduction

In the minds of many, plea bargaining is directly linked to the U.S. criminal justice system, since it has been extensively used there since the beginning of the 20<sup>th</sup> century, until becoming “the primary way to resolve criminal cases” (American Bar Association, 2023). However, in the last three decades, plea-bargaining procedures have been adopted by a large number of jurisdictions across the world. Such “triumphal march of consensual procedural forms” (Thaman, 2010, p.156) is based on the universal objective of minimizing the number of fully contested criminal trials (Hodgson, 2015), since they are considered no longer affordable (Thaman, 2007).

Albeit the prevalence of such phenomenon, an adjourned and comprehensive account of the current adoption and use of plea-bargaining procedures worldwide is still lacking. Legal comparative papers typically focus on just a handful of jurisdictions, with special regard to the USA, France, Germany, and Italy (Ma, 2002; Langer, 2004; Turner, 2006, 2016; Hodgson, 2015), while descriptions of the local plea-bargaining regimes do not exist in English for many jurisdictions. More recent reports consider a greater number of jurisdictions, but they either discuss plea bargaining together with cooperation agreements, which are a related but different institution (Fair Trials, 2017),<sup>1</sup> or do not

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<sup>1</sup> In cooperation agreements, the defendant provides assistance to the authorities in the investigation or prosecution of crimes, subsequently receiving a diminished sentence, often proportional to the extent of the assistance provided. In plea-bargaining procedures, the benefits are not conditional on providing assistance to the authorities, but they simply follow

aim at systematically studying it in the largest possible number of jurisdictions (Langer, 2021).<sup>2</sup> Consequently, plea bargaining is still understudied empirically in cross-country settings (Langer, 2021, p.385). The only example of a cross-country empirical study on plea bargaining is Givati (2014), which finds a positive correlation between less restricted plea-bargaining regimes and a lower social emphasis on avoiding that innocent defendants are convicted. However, Givati (2014) only considers essential elements of the legal design of plea-bargaining procedures, while overlooking the entity of their use in practice. Furthermore, the description of plea-bargaining regimes is now outdated for several countries included in the analysis.

Empirical studies about the use of plea bargaining in practice focus on few individual jurisdictions. In the US, higher probabilities of concluding a plea agreement are shown to be associated, sometimes in a causal way, with pretrial detention (Sacks and Akerman, 2012; Heaton et al., 2017; Leslie and Pope, 2017; Donnelly and MacDonald, 2018; Dobbie et al., 2018), the threat of death penalty (Kuzienko, 2006; Thaxton, 2013), lower severity of the offense charged (Meyer and Gray, 1997), and the lack of clear communication about collateral consequences of plea bargaining (Malone, 2020). Lower plea-bargaining rates are instead observed in the months approaching prosecutorial elections (Bandyopadhyay and McCannon, 2014).<sup>3</sup> Few studies consider plea-bargaining systems in countries different from the US. Wu (2020) explores the impact of the newly established plea-bargaining procedure on disposition times and sentencing leniency in China; Semukhina and Reynolds (2009) study citizens' attitudes towards plea bargaining in Russia and its use in practice; Boari and Fiorentini (2001) identify factors promoting or hindering the use of plea agreements in Italian courts.

Despite the studies mentioned above, we do not know yet which factors drive the different levels of use of plea bargaining observed across criminal justice systems. Furthermore, it is still unclear which factors determine whether a jurisdiction will adopt a plea-bargaining system in the first place. To fill these gaps, we have conducted a survey on a large number of countries all around the world. Using a novel dataset, we find that the French and Scandinavian legal origins, together with having a Muslim majority population, are associated with lower probabilities of formalizing plea bargaining. Regarding its use in practice, we find that an increase in GDP per capita is associated with greater plea-bargaining rates up to a certain point, after which the relationship becomes negative. Furthermore, higher plea-bargaining rates are associated with the Spanish and Socialist legal origins, less complex regulation of plea-bargaining procedure, and the presence of jury trials. We do not find evidence, however, that factors such as the presence of penal orders, the level of material resources and crime rates, play a significant role in the probabilities of formalizing plea-bargaining procedures.

The present paper contributes in two ways to the existing literature on plea bargaining. First, it provides the most complete and adjourned cross-country description of the adoption of plea bargaining so far, by considering the existence of such institution in 174 jurisdictions. For the 101 jurisdictions that allow plea bargaining, we coded several legal design features of the procedure and built an index representing the complexity of its regulation. For 52 jurisdictions, we also computed the plea-bargaining rate for 2019, defined as the percentage of convictions imposed through plea bargaining over the total number of criminal convictions. Second, the present paper provides the first empirical assessment of the factors determining the probability of introducing plea bargaining in a given jurisdiction. It further reports correlations between certain legal design choices or structural factors and different rates of use of plea bargaining.

The paper is organized as follows. Section 2 provides the theoretical framework, by discussing the factors that can influence both the probability of introduction and the extent of use of plea bargaining

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a plea of guilt. The two procedures thus result in sentence benefits for defendants, but they differ as to the underlying rationale and the possibilities of use in practice.

<sup>2</sup> The ratio between convictions imposed through plea bargaining and the total number of convictions is reported for 20 jurisdictions by Fair Trials (2017) and for 26 jurisdictions by Langer (2021).

<sup>3</sup> For an extensive review of the empirical literature about plea bargaining in the USA see Vera Institute (2020).

in practice. Section 3 describes the data, while Sections 4 reports and discusses the results of the empirical analysis. Section 5 includes the limitations, and Section 6 concludes.

## 2. Factors influencing the formalization and use of plea bargaining

### 2.1. The Term Plea Bargaining

Before discussing the factors influencing both the formalization and the subsequent use of plea bargaining, we briefly define the term and discuss its appropriateness. Plea bargaining is an institution of criminal procedure, according to which defendants are convicted if they explicitly accept to plead guilty or to otherwise waive their right to a full trial, in exchange for some benefits from the State, typically in the form of a reduced sentence.

Plea bargaining should be distinguished from trial-avoiding mechanisms that do not result in criminal convictions, such as mediation or conditional dismissals of charges. By considering the imposition of a criminal conviction as a definitional feature of plea bargaining, we follow Langer (2021). Such choice is motivated by the fact that a criminal conviction, differently from other case-terminating decisions, publicly affirms that an individual is guilty, enables the imposition of criminal punishments, and is associated with a wide array of other legal consequences. Further, plea-bargaining procedures should be distinguished from simplified trials. Indeed, plea bargaining enables the imposition of a criminal conviction without any trial activity, besides the mere judicial review of the agreement. In simplified trials, conversely, the courtroom activity is typically reduced, or speeded-up compared to a normal trial, but it always entails some production of evidence. The outcome of simplified trials is hence always determined by some form of courtroom debate, and not by the mere review of agreements between the public authority and the defendant.

The term “plea bargaining” itself entails at least three shortcomings. First, a pleading phase is typical of adversarial criminal procedures, but it is foreign to the inquisitorial tradition. Hence, the term “plea bargaining” cannot be properly used in jurisdictions that do not provide for a pleading stage (Langer, 2004). Second, the term plea bargaining is firmly refused in many jurisdictions, even in those belonging to the adversarial tradition, and even when a system of sentencing discount for guilty pleas is explicitly established and regulated.<sup>4</sup> The motivation for such dislike might be that the term is perceived as a reference to improper arrangements between prosecutors and defendants, with the primary objective of imposing a conviction, with little regard for the strength of evidence or other considerations. Third, the term plea-bargaining is typically associated with the U.S. model, which is the most studied in the literature, but to which many systems do not conform. Alternative denominations have been proposed (Voigt, 2021), by emphasizing different aspects of the procedure, as in the case of sentence agreements, sentence discounts, or trial waiver systems (Fair Trials, 2017). However, we decided to keep on using the term “plea bargaining”, because of its status in the extant literature.

In the following subsections, we develop our hypotheses regarding both the formal introduction of plea bargaining and its subsequent use.

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<sup>4</sup> This is the case, for example, in Northern Ireland, where the “Standards of Advocacy” issued by the Public Prosecution Service state that “The defence may on occasion approach the Prosecution Service with an offer to plead guilty to only some of the charges that they are facing, or to a lesser charge or charges, with the remaining charges not being proceeded with”, but immediately after affirms that “This does not constitute «plea bargaining»” [emphasis in the original] and that “«Plea bargaining» has no place in the practice or procedures of the PPS”, (PPS, 2019). At the same time, numerous judicial decisions recognize that guilty pleas are typically rewarded with a sentence discount of 1/3, e.g., *R v Maughan* (2022).

## 2.2. Legal Origins

La Porta et al. (2008) define legal origins as “a style of social control of economic life” (p.286). In the context of the present paper, legal origins can be interpreted as different styles of regulation of criminal procedure. Following that literature, one would expect a systematic relationship between different legal origins and the probability of formalization of plea bargaining across jurisdictions.

In jurisdictions belonging to the adversarial tradition, we often do not observe the formal introduction of plea bargaining, but rather the regulation of a pre-existent practice, as in the case of the U.S.<sup>5</sup> Indeed, where a pleading stage exists, guilty pleas are typically rewarded with a sentence discount, either considering the saving in terms of time, resources, and efforts that they guarantee to the State and the victims, or because they are interpreted as a sign of repentance. This leads to the emergence in practice of plea bargaining and sentencing discounts, which are then normally formalized either by judicial decisions, by statute, or in prosecutorial and sentencing guidelines.<sup>6</sup> Conversely, in jurisdictions belonging to the inquisitorial tradition, plea bargaining procedures are typically introduced *ex novo*, often in conjunction with a broader reform of the criminal justice system.<sup>7</sup> Following these considerations, we use the term “formalization” instead of “introduction” of plea-bargaining procedures.

However, the adversarial-inquisitorial divide alone does not capture all the possible differences in the functioning, goals, and principles of criminal justice systems. Indeed, such differences can be captured in greater detail, and in a more nuanced way, by legal origins.

In order to test the relevance of legal origins for the probability of formalizing plea bargaining, we first adopt the classification presented in La Porta et al. (2008)<sup>8</sup>. That categorization divides the legal systems of the world into five legal traditions: English, French, German, Scandinavian, and Socialist.<sup>9</sup> This classification, which has been criticized for certain coding decisions (see, e.g., Michaels, 2006), is primarily based on private law considerations. This is why we also adopt a modified taxonomy, based primarily upon central traits of criminal procedural law.

First, we consider the Spanish legal origin as a family of its own, and not as part of the French one. The motivation for this is that the oldest plea-bargaining procedure is precisely Spanish *conformidad*, first regulated in the Criminal procedure law of 1882 (Varona et al., 2022), which remained in force

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<sup>5</sup> The practice of plea bargaining was already common in the U.S. urban courts at the end of the 19<sup>th</sup> century, but the public and higher courts became aware of its pervasiveness only during the 1920s. However, the constitutionality of the practice was not declared until 1970, when the Supreme Court also started to regulate it, by establishing certain rules for both the negotiation phase and the subsequent judicial review of the agreement; see *Brady v. United States* (1970). For classic accounts of the history of plea bargaining in the U.S. see Alschuler (1979) and Langbein (1979).

<sup>6</sup> The emerging of informal plea-bargaining practices is not exclusive of the accusatorial tradition, as shown by the case of Germany. In some German courts during the 1970s, the practice of *Absprachen*, or agreements, became an important way for dealing with complex cases, especially those involving white-collar crimes or the violation of environmental laws. Upon explicit call by the Federal High Court of Justice, the German Parliament regulated the practice by reforming the Code of Criminal Procedure in 2009. However, the emergence of informal plea-bargaining practices in Germany constitutes an exception within the inquisitorial tradition. For the story of plea agreements in Germany, see Rauxloh (2011).

<sup>7</sup> Such reforms are sometimes directed at introducing typical adversarial principles in criminal procedures, as in the case of Italy with the 1988 reform (Pizzi and Marafioti, 1992; Pizzi and Montagna, 2004; Illuminati, 2005), or Russia in 2001 (Solomon, 2012). Such principles typically include the parity of arms between defense and prosecution, immediacy and orality in the formation of evidence at trial, cross-examination of witnesses etc.

<sup>8</sup> The influential legal origins literature has already tested the consequences of belonging to a certain legal family on a wide array of outcomes, from economic growth (Mahoney, 2001), to military conscription (Mulligan and Shleifer, 2005), incarceration rates (D’Amico and Williamson, 2015), and even transmission rates of HIV (Anderson, 2018).

<sup>9</sup> The classification adopted by La Porta et al. (2008) is, in turn, descendant of the one proposed by comparatists Zweigert and Kötz. However, comparativists and economists use and understand such classifications in a different way, see Garoupa and Pargendler (2014).

in many former Spanish colonies years after their independence.<sup>10</sup> Hence, Spain and its former colonies are likely to display a different approach towards criminal procedure, and plea bargaining in particular, compared to the other members of the French legal origin. Second, the Socialist legal origin is modified, in order to include a different set of jurisdictions compared to the homonym family presented in La Porta et al. (2008). In our classification, the Socialist legal origin comprises three categories of jurisdictions: those that are still one-party autocracies ruled by a Communist Party; those who gained independence from the Soviet Union; the members and observers of the Warsaw Pact who were not previously part of the Austro-Hungarian or German empires.<sup>11</sup> Our different classification is motivated by the peculiarities of the Soviet criminal procedure, its persistent legacy, and its influence on the legal systems of other Socialist countries outside of the USSR.<sup>12</sup> Indeed, the Soviet system has been defined a “distorted neo-inquisitorialism”, characterized by far-reaching powers of investigators and weakness of judges (Solomon, 2015). Such weakness is still persistent in post-Socialist countries, and it is common to defense lawyers, whose career often depends upon maintaining a good working relationship with investigators and judges. In turn, the latter still consider an acquittal as a defeat that can be easily avoided by recurring to confession agreements (Moiseeva, 2017). Members of the Socialist legal origins can thus retrieve, through plea bargaining, the centrality of confessions of Soviet-era trials (Solomon, 2012), in addition to many other informal practices, whose survival is well-documented for Russia and China (Solomon, 2010).

In addition, legal origins can influence not only the likelihood of formalization of plea bargaining, but also its subsequent use in practice. This can happen through two channels, an indirect and a direct one. Concerning the indirect one, as a style of regulation of criminal procedure, different legal origins influence the legal design of plea bargaining. In turn, different legal design choices will affect the use in practice of the procedure itself, thus resulting in different plea-bargaining rates. Concerning the direct effect, different legal traditions result not only in different ways of structuring criminal proceedings, but also in “different structures of interpretation and meaning, through which the actors of a given criminal justice system understand both criminal procedure and their role within the system” (Langer, 2004, p.10). For example, common law judges are less active during the interrogation of witnesses, not only because of differences in procedural rules, but also because they understand differently the proper role of the judge (Langer, 2004; Ogg, 2013). Similarly, law enforcers can recur more often to plea bargaining in jurisdictions that consider plea bargaining as an ordinary way for disposing criminal cases, independently from the legal design of such procedure. Thus, different legal origins can shape not only the legal design of a certain procedure, but also the disposition of the individual agents towards the use of the procedure itself. Hence, legal origins associated with higher probabilities of formalizing plea bargaining should also be associated with higher plea-bargaining rates.

### 2.3. Muslim population

In many Muslim-majority countries, belonging to different legal origins, Sharia is considered as a source of law. If the relative majority of the population is Muslim, then Sharia will likely influence

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<sup>10</sup> It is still the law governing criminal procedure in both Spain and Equatorial Guinea.

<sup>11</sup> These jurisdictions are not included in the Socialist legal origin because of the likely relevant and persistent influence of Germanic legal doctrine on their system of criminal procedure. For example, the long-lasting and different influence of the Prussian, Austrian, and Russian dominations in Poland has been demonstrated in relation to the organization and efficiency of bureaucratic institutions (Vogler, 2019) and the size of property tax rates (Kantorowicz, 2022).

<sup>12</sup> Based on the three groups described above, the following 21 jurisdictions are included in the Socialist legal origin: Cuba, China, Laos, Vietnam; Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan; Bulgaria, Mongolia.

the public perception about the proper role and the principles of criminal procedure in a way not captured by legal origins alone.

Sharia divides crimes into three categories: *Huddud*, *Qisas*, and *Taazir* (Hakeem, 2003). *Huddud* constitutes a *numerus clausus* of crimes,<sup>13</sup> whose punishment is prescribed directly by the Quran or the Sunna. The punishment prescribed for *Huddud* is considered a right of God (Reza, 2013), thus it cannot be adjusted in any manner, nor waived by anyone (Hakeem, 2003). Hence, the most serious crimes would be excluded from the applicability of plea bargaining. The second category, *Qisas*, constitutes another *numerus clausus*,<sup>14</sup> encompassing the main crimes against bodily integrity. The two punishments provided for this category of crimes are alternatively the principle of talion or the payment of compensation, called *diyya* (Bassiouni, 1997). By providing for compensation, the Islamic tradition seems to promote the disposition of criminal cases through agreements between the offender and the victim. Such consensual elements recall mediation procedures adopted by some Western jurisdictions, but they differ from plea bargaining in two ways. First, the negotiations are not between the defendant and the prosecutor, or another public authority; instead, they take place between the offender and the victim, or the victim's family, with the possible participation of a mediator. Second, the entire process is not directed at imposing a criminal conviction upon the defendant, but just at seeking compensation for the victim, thus solving the interpersonal conflict originated by the wrongdoing.<sup>15</sup> After the *diyya* has been agreed upon and paid, there is no further room for the imposition of a criminal punishment. Hence, plea bargaining seems alien also to this second category of crimes. The third category, *Taazir*, is a residual one, which includes offenses from the *Huddud* and *Qisas* categories which were not sufficiently proven, but that the judge deemed worth of punishment in a reduced form (Bassiouni, 1997). However, since confession is a means of proof for both *Huddud* and *Qisas*, only a crime that the defendant has not confessed could be punished with a reduced sanction in the form of *Taazir*. Indeed, confession is always treated just as a means of proof by Sharia, and it is never connected to the imposition of a reduced sentence. Furthermore, in the case of *Taazir* the task of determining both whether an act is a crime and the consequent punishment is traditionally left to the discretion of the judge (Hakeem, 2003), which cannot be constrained by agreements between the defendant and a prosecuting authority. Finally, the punishment of *Taazir* is directed at achieving deterrence,<sup>16</sup> thus the entity of the punishment cannot be justified in the light of a different objective, including that of achieving greater procedural efficiency through plea agreements. Thus, plea bargaining seems also alien to the domain of *Taazir*.

With reference to all three categories of crimes, Shariah principles do not promote the adoption of plea-bargaining procedures. Thus, we expect a negative probability of formalization of plea bargaining in Muslim-majority countries. Similarly to legal origins, Sharia may be considered as a "structure of interpretation and meaning" (Langer, 2004, p.9) that guides individual choices in the domain of criminal procedures. Thus, if Sharia principles do not promote the disposition of criminal cases in the form of plea agreements, Muslim citizens may recur to plea bargaining only to a limited extent, even in jurisdictions that allow such kind of procedure. Hence, a higher share of Muslims in the population should be also associated with lower plea-bargaining rates.

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<sup>13</sup> There is no consensus about the list of crimes included in the *Huddud* category. The following four crimes are considered *Huddud* by all Islamic jurists (El Awa, 1982): *Shariba* (theft), *Hiraba* (armed robbery), *Zina* (illicit sexual intercourse), *Qadhif* (false accusation of unchastity). The following two crimes are not always included in the list of *Huddud*, since their punishment is not established directly by the Quran or the Sunna: *Shurb al-Khamr* (drinking alcohol) and *Ridda* (apostasy). For a detailed discussion of the single *Huddud* crimes and related punishments, see Hakeem (2003).

<sup>14</sup> The following five crimes are generally included in the *Qisas* category (Bassiouni, 1997): murder, voluntary and involuntary killing, intentional and unintentional physical injury.

<sup>15</sup> Indeed, many plea-bargaining procedures exclude the possibility of considering compensation matters as part of the agreement, while only in some cases the victim has the right to participate in the negotiation between the defendant and the authority, or even to veto the conclusion of a plea agreement.

<sup>16</sup> The word *Taazir* itself derives from the verb *azar*, which means "to prevent, respect, and reform" (Hakeem, 2003).



### 2.3. Age of the procedure

One of the critics raised by comparatists against the legal origins literature is that economists seemed to take legal taxonomies as something given once and forever (Garoupa and Pargendler, 2014). Instead, lawyers expressly warned that “the attribution of a system to a particular family is susceptible to alteration” (Zweigert and Kötz, 1987, p.66) and should be therefore considered as only temporary. The introduction of plea bargaining itself can induce legal actors to “internalize a different structure of meaning” (Langer 2004, p.13), thus potentially diverting a jurisdiction from its original legal tradition and towards another. Furthermore, with time, legal actors can learn how to better use a newly established procedure (Langer, 2021), thus increasingly recurring to that over the years.<sup>17</sup>

As time passes, the modification of the traditional structures of interpretation and meaning can be coupled with a learning effect. Thus, higher plea-bargaining rates should be observed in jurisdictions in which a plea-bargaining procedure has been formalized earlier.

### 2.4. Penal orders

Penal orders are an institution of criminal procedure, first introduced in the Prussian criminal law of 1846, and today adopted by around 40 jurisdictions worldwide (Paolini, 2023). In its basic form, a penal order consists in the imposition of a criminal conviction by a prosecutor or judge, typically for less serious crimes. The conviction is then communicated to the defendant, who can oppose it and ask for trial within a limited period of time; in the absence of opposition, the conviction becomes final.

From the perspective of law enforcers, plea bargaining allows for the disposition of criminal cases by saving the costs and uncertainties associated with ordinary trials. Hence, law enforcers can quickly dispose of evidentiary simple cases, thus concentrating resources upon the investigation of more complex ones (Easterbrook, 1983), or prosecute a larger number of petty cases, which would have been otherwise discontinued, under binding resource constraints (Dušek and Montag, 2017). Penal orders, like plea bargaining, make it possible to impose criminal convictions without any trial activity. Hence, both can be understood as trial-avoiding conviction mechanisms (Langer, 2021), with plea bargaining constituting a more bilateral or horizontal model, and penal orders providing a more unilateral or vertical one.

If penal orders can be considered a functional equivalent of plea bargaining, then jurisdictions that already adopted penal orders should exhibit lower probabilities of formalizing plea bargaining.<sup>18</sup> The existence of penal orders should influence not only the probability of formalizing plea bargaining, but also the subsequent extent of its use in practice. Indeed, penal orders can be considered not only functional equivalents, but even cheaper trial-avoiding conviction mechanisms compared to plea bargaining since, unlike the latter, they do not require any negotiation between law enforcers and defendants.<sup>19</sup> Hence, the possibility of recurring to penal orders should be associated with lower plea-bargaining rates.

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<sup>17</sup> However, it is possible that such process, before being complete, would require a consistent generational turnover in the hierarchies of law enforcement agencies. In Italy, a higher seniority of the heads of prosecutor’s offices and of tribunals was shown to be associated with lower plea-bargaining rates even thirty years after the introduction of plea bargaining (Boari and Fiorentini, 2001).

<sup>18</sup> For the concept of functional equivalence see Michaels (2006).

<sup>19</sup> Sometimes they do not even require a prior contact between the issuing authority and the defendant, as in Italy, or the involvement of a judge, since the penal order can be issued directly by a prosecutor, as in Switzerland, or by a police officer, as in Finland.

## 2.5. Jury trials

The larger the costs of trials, the more resources may be saved through plea bargaining. Indeed, the historical literature about plea bargaining in the U.S. usually links the origin and rise of such institution with the increased costs and complexity of criminal trials (Alschuler 1979; Feeley 1997). Since the end of the 19<sup>th</sup> century, the progressive expansion of procedural guarantees rendered the criminal jury trial “absolutely unworkable as an ordinary dispositive procedure” (Langbein 1978, p.9), thus making plea bargaining a necessary substitute.

Jury trials are not only especially costly in terms of the time and effort required from the jurors. They are also associated with greater outcome uncertainties compared to bench trials, thus providing additional incentives towards the use of plea bargaining (Ortman, 2020). Hence, jurisdictions with institutionalized jury trials should exhibit higher probabilities of formalizing plea bargaining, as well as higher plea-bargaining rates.<sup>20</sup>

## 2.6. Legal design of the procedure

The legal design of plea-bargaining procedures varies across jurisdictions. First, some jurisdictions allow plea agreements for every kind of criminal case, while others prohibit them from being applied in certain instances, e.g. when a sentence above a certain threshold should be imposed at trial, or in cases involving certain categories of crimes, or if the defendant is a repeat offender. Second, in some jurisdictions the parties can negotiate over the type and number of charges pushed, or over the size and type of sentence to be imposed; in other jurisdictions, instead, charges cannot be object of negotiation, or automatic and fixed sentence discounts are mandated in case of plea agreements. Third, the involvement of judges, defense lawyers, and victims can vary across jurisdictions, both during the negotiation phase and during the subsequent judicial scrutiny of the agreement. A greater involvement of agents different from the defendant and the prosecutor will likely increase transaction costs, thus reducing the attractiveness of plea bargaining.

All the legal design differences discussed above are likely to influence plea-bargaining rates. In particular, a looser regulation should be associated with a greater use of plea bargaining in practice, while the opposite should hold true for more strictly regulated plea-bargaining procedures.

## 2.7. Resources

Plea bargaining allows the imposition of criminal convictions without the need of holding ordinary criminal trials. This allows to save time and resources but at the cost of lower accuracy in the adjudication of cases, especially in the form of wrongful convictions (Bibas, 2004; Givati, 2014; Dušek and Montag, 2017; Beenstock et al., 2021). Hence, the social benefits from plea bargaining will most likely outweigh the costs in jurisdictions where resources are scarcer, but not where more resources can be allocated for the prosecution and adjudication of criminal cases. Consequently, jurisdictions that can afford to invest more resources in criminal law enforcement, and especially in the court system, should exhibit a lower probability of formalizing plea bargaining.

The extent to which a jurisdiction can invest into criminal law enforcement should influence not only the likelihood of formalizing a plea-bargaining procedure, but also the extent of its use in practice. Indeed, jurisdictions that can invest more in the prosecution and adjudication of criminal cases should be able to rely less on plea bargaining as an ordinary mean of disposition of caseloads. Furthermore, even assuming that all jurisdictions attach the same importance to values different from efficiency,

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<sup>20</sup> In a simple bivariate regression, Langer (2021) finds some correlation between the existence of jury trials and higher plea-bargaining rates.

such as guaranteeing an adversarial trial to the greatest possible number of defendants, the realization of such value will be afforded more easily by richer jurisdictions. At the same time, poorer jurisdictions might not possess the required capacity for monitoring the flow of criminal cases in courts, thus making less salient the need for more efficient procedures. In addition, poorer jurisdictions cannot invest enough resources in the criminal justice system, thus leading to the overburdening of prosecutors and courts, and hindering their ability to successfully prosecute enough cases. The threat of punishment at trial then becomes hardly credible for many criminals, especially in petty cases, thus lowering the incentives of the offenders to engage in plea bargaining. Hence, we should observe lower plea-bargaining rates both in very rich and very poor jurisdictions.

## 2.8. Crime rates

Higher crime rates should prompt the lawmakers towards the adoption of more effective ways for dealing with criminal cases. One such way is relying more on guilty pleas, which allow the imposition of criminal convictions while avoiding the costs of trial. Hence, jurisdictions with higher past crime rates should exhibit a higher probability of formalizing plea bargaining.

Regarding the use of plea bargaining, jurisdictions with lower crime rates might need to rely less on this mechanism as an ordinary way of disposing of the criminal caseload, since their courts are not overburdened. At the same time, jurisdictions with extremely high crime rates might decide to concentrate their resources upon the prosecution of the most serious crimes, thus lowering the probability of punishment for crimes of medium and lower gravity. Additionally, in such jurisdictions both the public and the law enforcers might be less prone to offer benefits to defendants through plea agreements, in an attempt to appear tougher on crime and impose exemplary punishments. Hence, we should observe lower plea-bargaining rates both in jurisdictions with extremely high and extremely low crime rates.

In this section, we have presented seven hypotheses regarding both the probability of formally introducing plea bargaining and its actual use. We now move on to describe the data that will be used for testing these hypotheses.

## 3. Data

### 3.1. Data collection and jurisdictions

We developed a survey instrument in order to gather information on whether a plea-bargaining procedure was formalized in a given jurisdiction, its legal design, and other aspects of the criminal justice system.<sup>21</sup> The survey was sent to legal experts worldwide. Survey answers were collected for 84 jurisdictions<sup>22</sup> and later verified by ourselves to ensure that the respondents properly understood the questions and completed the whole questionnaire. If some questions were not answered, or if no survey answers were collected for a certain jurisdiction, we conducted personal research, by

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<sup>21</sup> The text of the survey is reported in Appendix A.1.2.

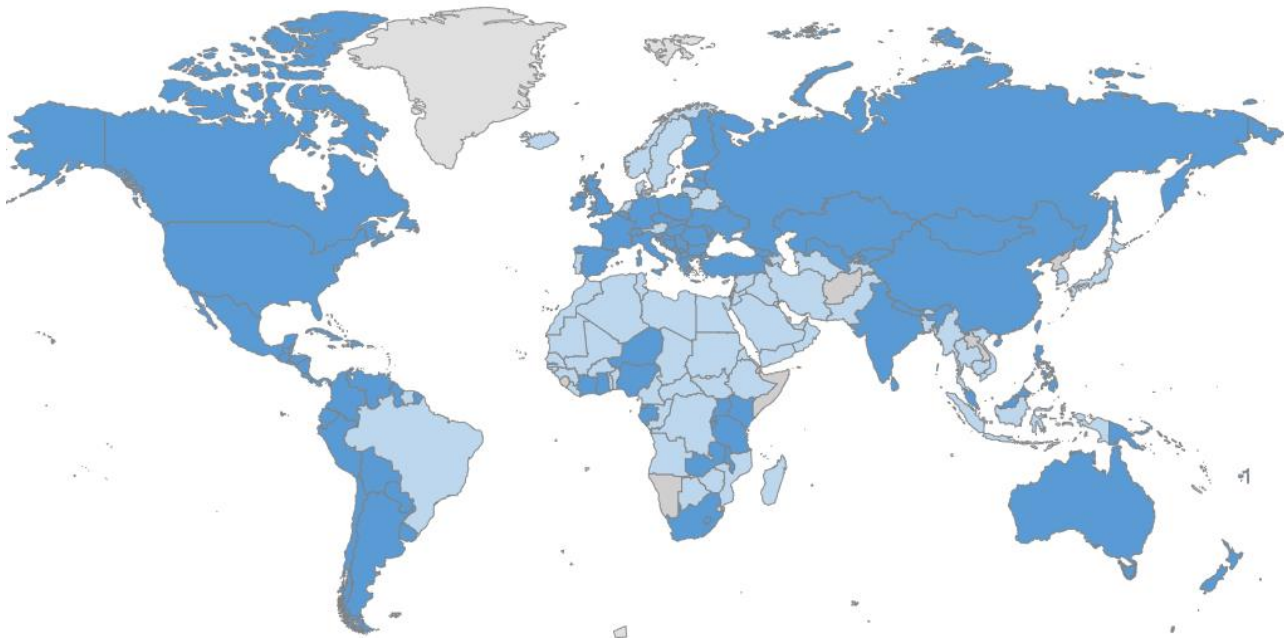
<sup>22</sup> Such jurisdictions are: Albania, Argentina, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belgium, Bolivia, Brazil, Cameroon, Chile, China, Colombia, Croatia, Cyprus, Czech Republic, Ecuador, Egypt, El Salvador, Eritrea, Estonia, Ethiopia, Fiji, France, Georgia, Germany, Ghana, Greece, Haiti, Hong Kong, Hungary, India, Indonesia, Iran, Iraq, Japan, Jordan, Kazakhstan, Kosovo, Kuwait, Kyrgyzstan, Maldives, Malta, Mauritius, Mexico, Moldova, Morocco, Myanmar, Nepal, Nicaragua, North Macedonia, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Romania, Russia, Scotland, Serbia, Singapore, Slovenia, Slovakia, South Africa, South Korea, Spain, Switzerland, Taiwan, Thailand, Tunisia, Turkey, Uganda, Vietnam, Yemen, Zimbabwe.

consulting legislative acts, repositories of jurisprudence, and academic publications. In total, we have collected data for 174 jurisdictions, which are listed in Appendix A.1.<sup>23</sup>

The resulting dataset is the most comprehensive one regarding the diffusion, legal design, and use in practice of plea bargaining. In the present paper, we focus on the empirical test of the theoretical expectations described in Section 2. The patterns of adoption of plea bargaining worldwide, the observed variance in its legal design, and its different use in practice are described in more detail in a related paper (Paolini, 2023).

Figure 1 shows the countries we have surveyed as for the year 2022. The jurisdictions with a formalized plea-bargaining procedure (101 out of 174) are indicated in dark blue. Countries without a plea-bargaining procedure are in light blue, while countries for which we do not have data are indicated in gray.

*Figure 1 Jurisdictions with a formalized plea-bargaining procedure in 2022.*



We were able to compute the plea-bargaining rate for 52 of the surveyed jurisdictions, focusing on the year 2019. The plea-bargaining rate is defined as the percentage of convictions imposed through plea bargaining over the total number of convictions imposed in a given jurisdiction and year. The year 2019 was chosen because it is the most recent year not affected by the Covid-19 pandemic for which the relevant data are available. Later years were not considered as they are unlikely to be representative of the normal functioning of a criminal justice system, considering the effects of lockdowns on both crime rates and the work of criminal law enforcers. Figure 2 reports the plea-bargaining rates of 52 jurisdictions in 2019, while Figure 3 shows the geographical distribution of those jurisdictions.

*Figure 2 Plea-bargaining rates in 52 jurisdictions in 2019.*

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<sup>23</sup> For jurisdictions with a formalized plea-bargaining procedure, additional information is included, such as the original name and English translation of the procedure, the year of formalization, and the sources used for computing the plea-bargaining rate.

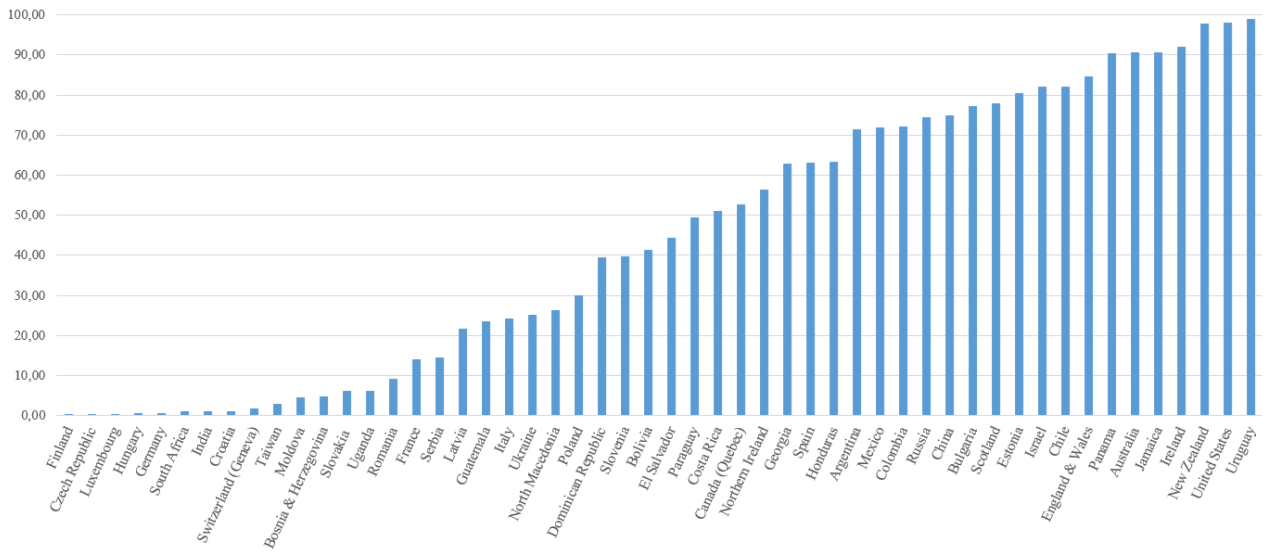
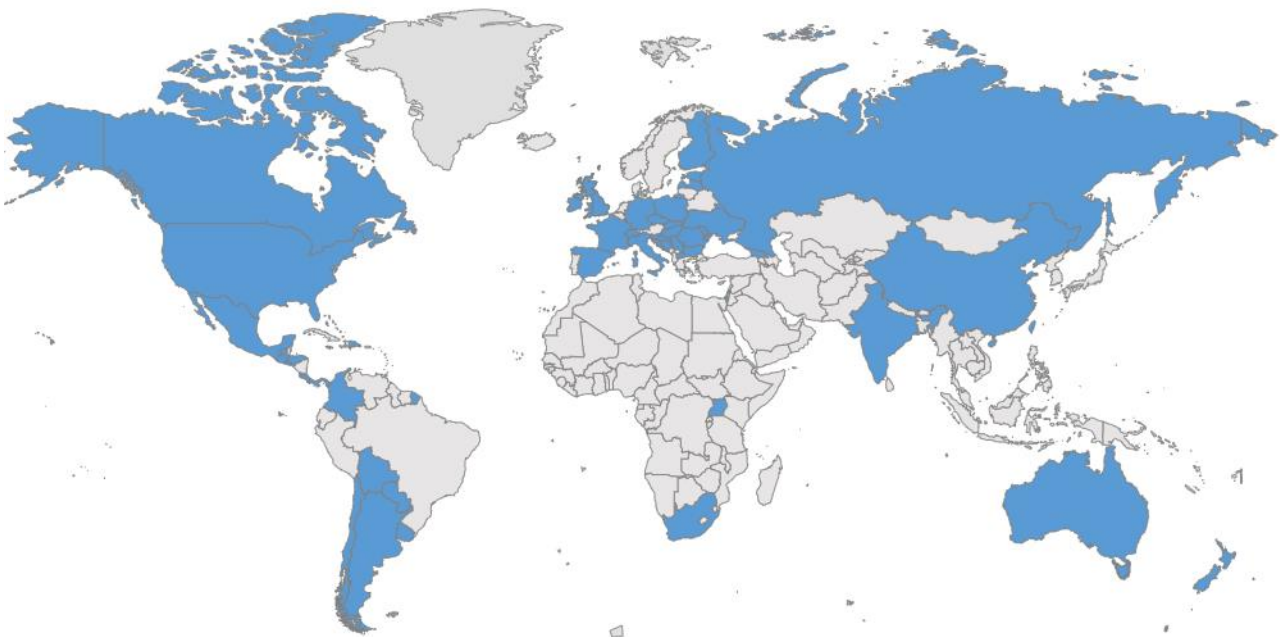


Figure 3 Jurisdictions for which the plea-bargaining rate in 2019 is known.



Some words of caution are needed with regard to the plea-bargaining rates computed. First, as it is usual in the literature (Fair Trials, 2017; Langer, 2021), for common law jurisdictions the number of guilty pleas has been used as a proxy for the number of plea bargaining, since no official statistics report the number of plea agreements.<sup>24</sup> Second, for some jurisdictions it was possible to collect the

<sup>24</sup> The assumption is that guilty pleas exclusively based on repentance are minimal in number compared to those motivated by the advantages of plea agreements. This assumption seems plausible, considering that more than 80% of all convictions are the result of guilty pleas in 7 of the 13 common law jurisdictions included in our sample. Hence, it seems unlikely that such a high proportion of guilty pleas is motivated by repentance alone and not by some sort of incentives.

relevant data with reference to only certain types of courts,<sup>25</sup> certain territories,<sup>26</sup> or periods of time shorter than one year.<sup>27</sup> Third, in certain jurisdictions the unity of reference is the number of cases, while in others it is the number of people. Fourth, in the case of South Africa, data are available only with reference to the formalized plea-bargaining procedure regulated by Sec. 105A of the Criminal Procedure Act. Yet, defendants can still plead guilty according to the older and informal procedure governed by Sec. 112. According to the Law and Economics literature (Adelstein, 2019), there are reasons to believe that the informal plea bargaining is far more popular in practice than the more regulated one.<sup>28</sup>

### 3.2. The variables

The two dependent variables used in the empirical analysis are `pb_legal` and `pb_rate`. The variable `pb_legal` is a dummy assuming value 1 if a given jurisdiction has a formalized plea-bargaining procedure, and 0 otherwise. The variable `pb_rate` is instead a continuous one, corresponding to the plea-bargaining rate in 52 jurisdictions with reference to the year 2019.

Regarding the explanatory variables, we coded several aspects of the legal design of plea-bargaining for the 101 jurisdictions that formalized this kind of procedure. Those legal design features can be grouped into three different dimensions: the applicability of the procedure; the extent to which parties can negotiate an agreement, taking into account the role of defense lawyers and victims; the role of judges during the negotiation phase and later during the review of the agreement.<sup>29</sup> The coding of these aspects allow us to describe the variation in the legal design of plea-bargaining procedures worldwide.<sup>30</sup> Following Voigt (2021), we employed the legal design variables in a cluster analysis in order to group the jurisdictions, based on the intensity of regulation of the respective plea-bargaining procedure.<sup>31</sup> In order to ensure the robustness of the results, and to avoid placing an excessive weight on some aspects at the expense of others, several clustering options were tested.<sup>32</sup> The clustering

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<sup>25</sup> For Bolivia, data are only available for *Tribunales de Sentencia Penal, Anticorrupción y de Violencia Contra la Mujer*, which deal with corruption crimes and ordinary crimes punished with 4 or more years of imprisonment; for England and Wales, data are only available with reference to Crown Courts, which deal with more serious cases, while the bulk of criminal cases is processed by Magistrates Courts; in Ireland, data are available for Circuit Courts, which deal with more serious offences, while District Courts process the majority of cases; for Israel, data are only available for cases prosecuted by prosecutors, and not also for those prosecuted by police prosecution, which mainly deals with petty crimes; for Scotland, data are available only for summary cases, which are decided in Justice of the Peace Courts or Sheriff Courts Summary, and that constitute the great majority of criminal offences.

<sup>26</sup> For Argentina, Australia, Mexico, and the U.S., only the federal jurisdiction was considered; for Canada, data are only available for the Province of Québec; for Switzerland, only for Canton Geneva; in the case of Paraguay, data are missing for 7 districts out of more than 20.

<sup>27</sup> For Argentina, data are available only for the first semester of 2019; for Honduras, they are only available for the period between January and October 2019.

<sup>28</sup> Indeed, considering the procedure regulated by Sec. 105A, South Africa is an outlier within the English legal origin, with a plea-bargaining rate of 0,98%. Hence, South Africa is dropped from the sample in robustness tests reported in Appendix B.6. The main results are robust to the exclusion of South Africa.

<sup>29</sup> Appendix A.2. reports in detail which variables were coded and used for the subsequent cluster analysis, and what aspects they consider.

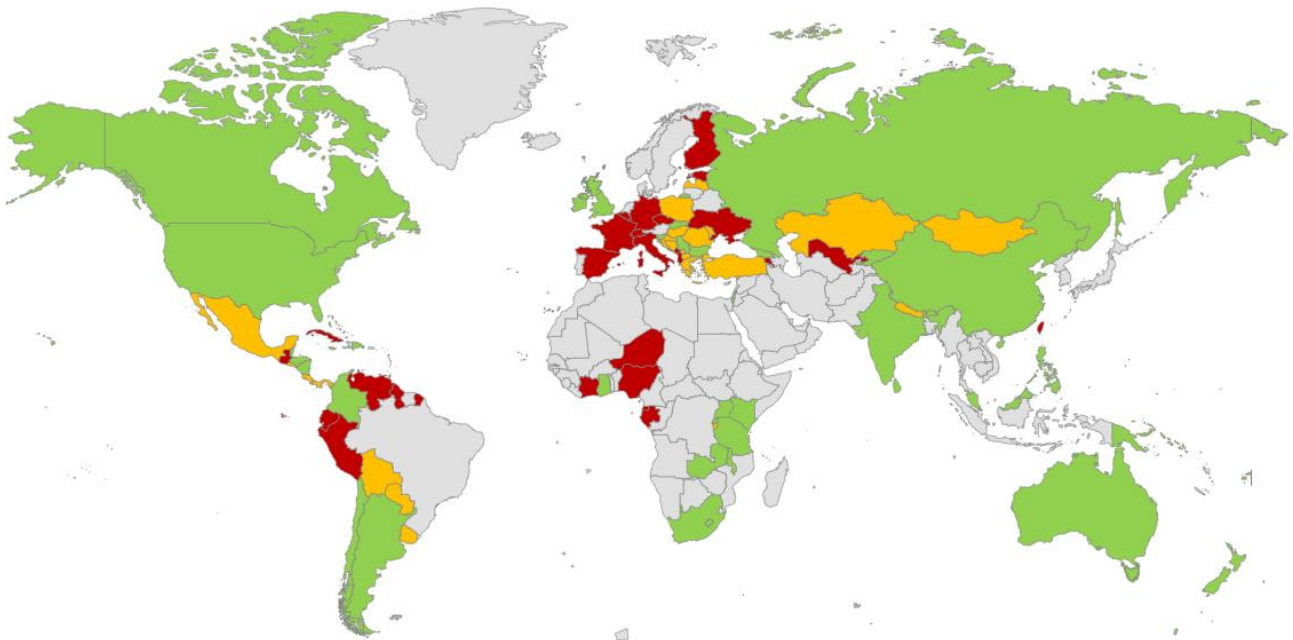
<sup>30</sup> The only legal design variation not considered in the empirical analysis is the timing of the procedure, for two reasons. First, there is not much variation across jurisdictions, with most allowing plea agreements to be signed before the beginning of the first instance trial. Second, the timing of the negotiations should not significantly impact the overall number of plea agreements, but just influence the moment in which the agreements are concluded. For example, jurisdictions that allow the conclusion of plea agreements during trial still reward earlier pleas with larger sentence discounts.

<sup>31</sup> Since the variables considered are both continuous and categorical, the standard k-means technique was adopted, with random centroids. According to this technique, clusters are obtained by a k-means algorithm which optimizes the Euclidean distance within and between clusters (Hair et al., 1998).

<sup>32</sup> Such options comprised: a. considering only the possibility of charge bargaining, because it is a more defining feature of plea-bargaining regimes compared to the other bargaining possibilities; b. not considering the role of the defense lawyer and of the victim; c. transforming the variables describing the role of defense lawyer and victim from continuous into binary; d. creating 4 and 5 clusters instead of 3, in order to better understand the position of a given jurisdiction in the

algorithm thus placed each of the 101 jurisdictions with formalized plea bargaining procedure in one of three clusters, corresponding to a minimal, medium, or maximal level of regulation of the procedure, as depicted in Figure 4.<sup>33</sup> Jurisdictions in the maximal regulation cluster typically limit the applicability of plea bargaining to crimes of moderate gravity, and mandate a more thorough judicial scrutiny over the agreement. Conversely, jurisdictions in the minimal regulation cluster allow the use of plea bargaining for all crimes, do not require the involvement of defense lawyers or victims, and prescribe a more passive role of the judge. The results of the clustering analysis allowed us to build an index of the intensity of plea bargaining regulation for 101 jurisdictions.<sup>34</sup>

*Figure 4 Regulation level of the plea-bargaining procedure.*



Continuing with the variables coded on our own, `pen_ord` is a dummy assuming value 1 if a penal order procedure existed in a given jurisdiction in 2019 and 0 otherwise. In penal order procedures, a criminal conviction precedes any trial activity, and the holding of an ordinary trial depends on the choice of the defendant. The variable `pen_ord_5` considers instead the existence of a penal order procedure in a given jurisdiction 5 years before the formalization of plea bargaining, or in 2017 for jurisdictions that did not have a formalized plea-bargaining procedure in 2022.

The variable `jury_trial` is a dummy assuming value 1 if jury trial existed in a given jurisdiction in 2019 and 0 otherwise. For coding this variable, only jury trials in the stricter term were considered, hence those in which “jury members decide, without a professional judge having the right to vote” (Voigt 2009, p.328). Lay assessors are then excluded, since it has been observed that they almost never outvote the professional judges and are less active in courts than jurors, thus not significantly

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spectrum from minimal to maximal regulation of the procedure (this latter option was tested since certain jurisdictions switched position across clusters based on whether certain variables were considered or excluded).

<sup>33</sup> Appendix A.1.1. also reports in which cluster each jurisdiction is placed.

<sup>34</sup> Aggregating variables to create indices is a standard method when studying cross-country legal variations. For example, La Porta et al. (1997,1998) adopt an index describing the level of legal protection provided to investors in different jurisdictions, while Botero et al. (2004) build a similar index regarding workers’ legal protection.

impacting the costs and uncertainty of trial for the parties (Munday 1993; Thaman 1999; Voigt 2009).<sup>35</sup>

The variable `pen_ord_overlap` is a continuous one, with values 0-4, considering in how many cases in which plea bargaining is possible, a penal order can be alternatively applied.<sup>36</sup> Similarly, the variable `jury_trial_overlap` considers in how many cases in which plea bargaining is possible, the trial would be held in front of a jury.<sup>37</sup> These variables are used as robustness tests, since they better capture the incentive structure of defendants and other parties towards plea bargaining when penal orders and jury trials are possible alternatives.<sup>38</sup>

The age of the procedure is captured by the continuous variable `year_pb`, whose value equals the number of years passed between the formalization of the plea-bargaining procedure and 2019, the year to which plea-bargaining rates refer. The year of formalization can be given either by the date of a judicial decision establishing the rules governing the plea-bargaining procedure, or by the date of promulgation of a statute establishing those rules.

The variable `legal_orig` reports legal origins according to La Porta et al. (2008), while `legal_orig_alt` is our alternative classification, in which our new Spanish and Socialist legal origins are coded.<sup>39</sup> The dummy variable `muslim_maj` assumes value 1 if the relative majority of the population of a jurisdiction was Muslim in 2009. The variable `muslim` is instead a continuous variable, corresponding to the share of Muslims in the population of a jurisdiction in 2010.<sup>40</sup> Both variables are coded based on the estimates by the Pew Research Center (2011) in the “The Future Global Muslim Population” report.<sup>41</sup>

Reliable measures of crime rates are difficult to obtain because many crimes are not reported, especially where the chances of a given crime being prosecuted are perceived as low. In order to circumvent this problem, homicide rates are commonly employed as proxies for crime rates. This choice is based on the consideration that homicides are likely to be reported, and on the assumption that homicide rates correlate with the overall crime levels.<sup>42</sup> The continuous variable `hom_rate` measures the rate of death per 100.000 inhabitants as consequence of interpersonal violence in 2018, while `hom_rate_5` measures the same rate 5 years before the formalization of plea bargaining, or in

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<sup>35</sup> We did not code a separate `jury_trial_5` variable on the model of `pen_ord_5`, since it would not be different from the variable `jury_trial`.

<sup>36</sup> The options are: 0 never; 1 in few cases; 2 in some cases; 3 in most cases; 4 in all cases.

<sup>37</sup> This variable assumes the same values of the variable `pen_ord_overlap`.

<sup>38</sup> However, such variables are used as robustness test and not as main explanatory variables, since their coding is more prone to subjective evaluation compared to a simple dummy. Furthermore, in the absence of detailed empirical data for each jurisdiction, they risk of being misleading. Indeed, if the plea-bargaining procedure is applied to crimes punished up to 5 years and the penal order to crimes up to 3 years, the coding of the overlapping factor would be “some cases”. However, if 90% of all crimes committed in a given jurisdiction are punished up to 3 years, then a more appropriate measure would be “most cases”. However, in the absence of enough statistical data, it is not possible to precisely code such variable, outside of the “no cases” option.

<sup>39</sup> The legal origin of each jurisdiction is reported in Appendix A.1.1.

<sup>40</sup> For reasons of data availability, in this case we cannot take as reference the period 5 years before the introduction of plea-bargaining, or the years 2017 and 2018, but just the years 2009 and 2010. However, the share of Muslims in the population can be considered a rather stable variable over time.

<sup>41</sup> For Kosovo and South Sudan, the measures are based on the 2021 Report on International Religious Freedom by the U.S. Department of State. Data for Kosovo are referred to the year 2011, while for South Sudan the reference year is 2020.

<sup>42</sup> Since 1981 the World Value Survey asks whether the respondents or a member of their family were victims of crimes during the previous year. We used this information in a simple OLS analysis, in order to verify whether homicide rates can be indeed considered as good proxies for the general level of criminality in a country. Over a sample of 119 observations, covering 80 jurisdictions in different years between 1981 and 2021, we find a positive correlation, significant at the 1% level (coefficient 0.330) between homicide rates and the percentage of respondents who were reportedly victims of crimes during the previous year. The correlation is positive and significant at the 1% level (coefficient 0.678) also when considering the percentage of respondents whose family members were reportedly victims of crimes during the previous year.



2017 for jurisdictions without a plea-bargaining procedure. The source of both variables is the Global Burden of Disease Study 2019, by the Institute for Health Metrics and Evaluation (2020).<sup>43</sup> The variables `hom_rate_sq` and `hom_rate_5_sq` are the squared values of the corresponding variables described above.

Coming to the material resources of criminal justice systems, these are proxied by GDP per capita. The variable `gdp_2018` reports nominal GDP per capita levels in U.S. dollars in 2018, while the variable `gdp_5` reports nominal GDP per capita levels in US dollars 5 years before the introduction of plea bargaining, or in 2017 for jurisdictions without a plea-bargaining procedure. In order to improve the comparability of GDP levels, all values of `gdp_5` were converted into U.S. dollars of 2017. Both variables are based on estimates by the World Bank.<sup>44</sup> The variables `gdp_2018_sq` and `gdp_5_sq` are the squared values of the corresponding variables described above. More precise measures of the resources invested in a criminal justice system, such as the number of judges, prosecutors, or police officers, are not available for a high enough number of jurisdictions worldwide.<sup>45</sup>

Figure 5 reports descriptive statistics for the binary and continuous variables used in the analysis.<sup>46</sup>

*Figure 5 Summary statistics - Binary and continuous variables.*

	N	Sum	Mean	SD	Min	Median	Max
<code>pb legal</code>	174	101	0.580	.495	0	1	1
<code>pb rate</code>	52	2287.598	43.992	34.599	.024	42.786	98.928
<code>hom rate</code>	52	406.78	7.823	11.366	.45	2.46	50.43
<code>hom rate 5</code>	170	1198.748	7.051	9.416	.32	3.755	55.14
<code>gdp 2018</code>	52	1260631.7	24242.918	24251.569	793.128	15546.459	116786.51
<code>gdp 5</code>	172	2402052.2	13965.420	22749.376	143.345	4141.013	173612.86
<code>muslim maj</code>	174	41	0.236	.426	0	0	1
<code>muslim</code>	174	4428.36	25.450	36.621	0	4.95	100
<code>pen ord</code>	174	42	0.241	.429	0	0	1
<code>pen ord 5</code>	174	33	0.190	.393	0	0	1
<code>jury trial</code>	174	43	0.247	.433	0	0	1

## 4. Results

The present section is divided into two subsections. The first identifies which factors influence the probability of a jurisdiction formalizing plea bargaining; the second, which factors correlate with a greater use of plea bargaining in practice.

<sup>43</sup> Since the Global Burden of Disease (GBD) dataset starts from 1990, for the following jurisdictions it was necessary to use national statistics to compute homicide rates, since `hom_rate_5` refers to years prior to 1990: Colombia; Israel; Italy. For the following jurisdictions, the homicide rate from GBD in 1990 was used as a proxy for the true value of `hom_rate_5`, since the reference year was placed in the second half of the 1980s and homicide rates do not change dramatically in few years: Cuba; Guatemala; Lesotho. For Hong Kong and Kosovo, homicide rate per 100.000 inhabitants reported by the World Bank was used, since these jurisdictions are not considered in the GBD. For Spain, Philippines, and Sri Lanka, it was not possible to compute the value of `hom_rate_5`.

<sup>44</sup> For Eritrea, Taiwan, and South Sudan, estimates of the International Monetary Fund were used. GDP estimates for the United Kingdom are used with reference to England and Wales, Northern Ireland, and Scotland.

<sup>45</sup> For example, the UN Office on Drugs and Crime reports the number of professional judges per 100.000 in just 28 jurisdictions.

<sup>46</sup> Summary statistics describing the categorical variables related to the legal origins and the level of regulation of the plea-bargaining procedure are reported in Appendix A.3.

#### 4.1. Factors influencing the probability of formalization of plea bargaining

Since the dependent variable considered in this section, *pb\_legal*, is a dummy, the estimates are obtained by employing a probit model. In all the regressions of this subsection, the values of the following factors are referred to 5 years before the formalization of plea bargaining, or to 2017 for jurisdictions without a plea-bargaining procedure in 2022: homicide rates; GDP per capita; penal orders; jury trials.

When considering the influence of legal origins, the English one is used as baseline, given the comparative influence of the U.S. model of plea bargaining, and the traditional opinion that considers common law and the accusatorial tradition as naturally conducive to the use of plea-bargaining procedures (Langer, 2004; Garoupa and Stephen, 2008; Givati, 2014). Homicide rates and GDP per capita are used as controls throughout all the tables and specifications.

Table 1 reports the marginal effects of 4 different specifications, using the legal origins classification by La Porta et al. (2008).

**Table 1.** Probit: Marginal effects, LaPorta et al. (2008).

VARIABLES	(1) pb_legal	(2) pb_legal	(3) pb_legal	(4) pb_legal	(5) pb_legal
hom_rate_5	0.011** (0.014)	0.005 (0.296)	0.009* (0.053)	0.011** (0.028)	0.005 (0.265)
gdp_5	0.000 (0.904)	-0.000 (0.270)	-0.000 (0.882)	-0.000 (0.813)	-0.000 (0.600)
French	-0.211*** (0.009)				-0.154* (0.062)
German	0.166 (0.109)				0.121 (0.345)
Scandinavian	-0.430** (0.047)				-0.423** (0.038)
Socialist	-				-
muslim_maj		-0.394*** (0.000)			-0.341*** (0.000)
jury_trial			0.125 (0.158)		0.056 (0.496)
pen_ord_5				0.060 (0.566)	-0.040 (0.711)
N	169	170	170	170	169

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Specification (1) considers the influence of legal origins alone. In this specification, the homicide rate is positively correlated with the probability of formalizing plea bargaining, and it is significant at the 5% level. Both the French and the Scandinavian legal origins are negatively correlated, and respectively significant at the 1% and 5% level. The Socialist legal origin is empty because it includes only one jurisdiction of our sample, hence its influence on the probability of formalizing plea bargaining cannot be estimated by using a probit model. Consequently, Myanmar is excluded from the analysis.

Specification (2) considers the influence of having a relative majority of Muslims in a country's population, finding a strong negative effect, significant at the 1% level. In this specification, the

homicide rate is no more significant. Specifications (3) and (4) consider respectively the influence of the presence of penal orders and jury trials, finding no effect. As in specification (1), homicide rates are positively correlated at the 5% level.

In specification (5), all factors are considered together. In this specification, the Scandinavian legal origin is again negatively associated with the probability of introducing plea bargaining, remaining statistically significant at the 5% level, while the French one is now significant just at the 10% level. The Muslim relative majority of population remains statistically significant at the 1% level, but with a small decrease in magnitude.

Table 2 reports the same specifications of Table 1 but using our alternative classification of legal origins.

**Table 2.** Probit: Marginal effects, Alternative classification.

VARIABLES	(1) pb_legal	(2) pb_legal	(3) pb_legal	(4) pb_legal	(5) pb_legal
hom_rate_5	0.004 (0.434)	0.005 (0.296)	0.009* (0.053)	0.011** (0.028)	-0.001 (0.908)
gdp_5	0.000 (0.530)	-0.000 (0.270)	-0.000 (0.882)	-0.000 (0.813)	-0.000 (0.740)
French	-0.368*** (0.000)				-0.328*** (0.000)
German	0.093 (0.489)				-0.053 (0.767)
Scandinavian	-0.500*** (0.008)				-0.524*** (0.002)
Socialist	0.021 (0.864)				0.019 (0.865)
Spanish	-				-
muslim_maj		-0.394*** (0.000)			-0.285*** (0.000)
jury_trial			0.125 (0.158)		0.054 (0.536)
pen_ord_5				0.060 (0.566)	0.090 (0.419)
N	153	170	170	170	153

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

In specification (1) we again find a strong and negative effect of the French and Scandinavian legal origins, both significant at the 1% level. All the 18 jurisdictions belonging to the Spanish legal origin have a formalized plea-bargaining procedure, hence they are all dropped from the analysis.<sup>47</sup> In this specification, no other factor is statistically significant.

Columns 2, 3, and 4 report the same specifications of the corresponding columns of Table 1, hence the results are not different.

<sup>47</sup> The probit model can produce an estimate only if the outcome variable assumes different values with reference to a certain explanatory variable. Since for all Spanish jurisdictions the value of pb\_legal is 1, the probit model cannot estimate any coefficient.

Specification (5) instead seems to support the argument that, in the domain of criminal procedure, our classification is superior to the one adopted by La Porta et al. (2008). Indeed, now both the French and Scandinavian legal origins remain statistically significant at the 1% level, maintaining also the same direction and approximately the same magnitude. Hence, with reference to criminal procedure traditions, the French legal origin does not constitute a monolithic entity, especially because the Spanish tradition appears to be a peculiar one. Indeed, all the 18 jurisdictions belonging to the Spanish legal origins have a formalized plea-bargaining procedure, and the first jurisdiction in the world to formally adopt such institution was precisely the Kingdom of Spain in 1882 (Varona et al., 2022).

The relative Muslim majority is again negatively correlated and statistically significant at the 1% level, but with a decrease in the coefficient's magnitude. When adopting both the classification by La Porta et al. (2008) and our modified version, a Muslim relative majority in the population is associated with a reduction of around 30 percentage points in the chances of formalizing plea bargaining. In line with our theoretical expectations, this finding seems to suggest that Sharia principles are not particularly favorable to the settlement of criminal cases through formal agreements between public authorities and defendants.

In both tables, differently from what expected in theory, the presence of neither penal orders nor jury trials plays a significant role.

Regarding penal orders, this finding can be explained in three ways. First, even if penal orders perform a similar function, lawmakers can still decide to formalize also a plea-bargaining procedure, in order to provide the relevant actors with a wider range of alternatives to an ordinary trial. Second, many jurisdictions in the recent decades introduced reforms aimed at establishing adversarial principles in criminal procedure, such as the parity of arms between prosecution and defense, the cross-examination of witnesses, and orality and immediacy in the formation of evidence during a public trial.<sup>48</sup> Penal orders appear to be the adaptation to modern criminal procedure of typically inquisitorial methods (Nicolucci, 2008), since a criminal conviction results from the sole decision of the prosecuting authority, in a written procedure, often without the necessity of informing the defendant that some investigation is being carried out against them. Conversely, plea bargaining makes the parties responsible of choosing the procedural method for disposing of their case, even allowing them to negotiate an agreement on punishment, typically in front of a judge who acts as a passive umpire. Hence, plea bargaining is often considered as more coherent with the adversarial ideal of criminal procedure.<sup>49</sup> Thus, even jurisdictions that already allow for the application of penal orders might introduce plea bargaining as an alternative to ordinary trials more coherent with the implementation of adversarial values.<sup>50</sup> Third, and most importantly, penal orders are not perfect functional equivalents of plea bargaining, even if both institutions constitute less costly alternatives to ordinary criminal trials. Indeed, the use of penal orders is always limited to criminal cases of minor or medium gravity, and it generally allows only the imposition of non-custodial sentences.<sup>51</sup> Conversely, plea bargaining, even when its applicability is restricted, can be used to deal with more

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<sup>48</sup> This was the case for Italy (1988), Russia (2001), and Mexico (2014) among many others.

<sup>49</sup> The Italian legislator in 1988 introduced a plea-bargaining procedure as part of a more general transition from the inquisitorial tradition towards the adversarial model, by taking the U.S. as explicit reference. It is interesting to note that the lawmaker, when justifying the introduction of a plea-bargaining procedure, affirmed that “The choice of the adversarial system [...] necessarily entails the attribution of greater powers to the parties and the possibility for them – on a parity level – of deciding upon the modes of continuation of procedure” (own translation, *Relazione al progetto preliminare e al testo definitivo del codice di procedura penale*, in G.U. n.250 del 24 ottobre 1988, Suppl. Ordinario n.93, p.104). Hence, plea bargaining was widely perceived as a necessary component of an adversarial system of criminal procedure, despite the contrary opinion of some legal historians; see Schulhofer (1984) and Van Cleave (1997).

<sup>50</sup> In some cases, both penal orders and plea bargaining are introduced with the same reform, as in the case of Greece and Turkey.

<sup>51</sup> Among the 41 jurisdictions with a penal order procedure, only 7 of them allow for the imposition of non-suspended custodial sentences: Andorra (1 and a half year), Mozambique (1 year), San Marino (3 months), Serbia (2 years), Slovakia (3 years), Switzerland (6 months), Turkey (2 years).

serious crimes, and it always allows the imposition of prison sentences. Hence, although sharing the same economic rationale, penal orders and plea-bargaining have partially different scopes of applicability, thus constituting non-perfect functional equivalents.

Regarding jury trials, the lack of significance can be explained if the presence of a jury is not the only factor that renders a criminal trial particularly expensive in terms of time and resources. Indeed, since the second half of the last century, and in nearly all jurisdictions, procedural rules have become increasingly complex, in conjunction with the expansion of procedural rights and guarantees accorded to defendants (Thaman, 2010). Hence, the sole presence of a jury is not sufficient for distinguishing between more and less complex criminal trials, as it could be in the past. Unfortunately, in the absence of a specific cross-country index, it is not possible to further test the impact of trials' complexity upon the probability of formalization of plea bargaining.

The material resources of a criminal justice system, proxied by GDP per capita, are not significant in any specification. Crime levels, proxied by homicide rates per 100.000 inhabitants, are in turn not significant when controlling for majoritarian Muslim populations. Hence, at least according to the present analysis, material resources and crime levels do not play a significant role in the formalization of plea bargaining, differently from the criminal procedural culture of a jurisdiction, as determined by both legal origins and the influence of Sharia.<sup>52</sup>

All the results discussed above hold when applying a logit model, besides some minor changes in the magnitude of the coefficients, as reported in Appendix B.1.

Appendix B.2. estimates the same specifications of Table 1 and 2 by adopting an OLS model. The main results are unaffected, but both the Socialist legal origins by La Porta at al. (2008) and the Spanish one are included in the results, and not dropped as it happens with the probit and logit models.

#### 4.2. Factors associated with the use of plea bargaining.

The dependent variable considered in this subsection is *pb\_rate*, corresponding to the percentage of criminal convictions imposed through plea bargaining over the total number of convictions imposed in a jurisdiction in 2019. All the estimates are the result of an OLS model. Throughout all specifications we control for homicide rates and GDP per capita in 2018, both in the simple and squared forms. To enable interpretability of the results, the coefficients referring to GDP per capita, in both forms, are multiplied by 1000.

Specification (1) of Table 5 considers only legal factors related to criminal procedure, namely: the level of regulation of plea bargaining<sup>53</sup> and the presence of jury trials and penal orders. Specification (2) considers instead factors external to the narrow domain of criminal procedure, namely: legal origins; the share of Muslims in the population; the year in which the plea-bargaining procedure was formalized. Specification (3) considers both legal and external factors at the same time.

**Table 5.** OLS: Legal and external factors – Alternative legal origins.

VARIABLES	(1) pb_rate	(2) pb_rate	(3) pb_rate
hom_rate	2.304* (0.052)	-0.014 (0.991)	0.542 (0.622)
hom_rate_sq	-0.047* (0.074)	-0.005 (0.834)	-0.016 (0.482)

<sup>52</sup> All the results discussed in this section are robust to the use of logit and OLS as alternative estimation strategies.

<sup>53</sup> The regulation level is captured by an index that considers the following legal design features of plea bargaining: the applicability of the procedure; the extent to which parties can negotiate an agreement, considering the role of defense lawyers and victims; the role of judges during the negotiation phase and later during the review of the agreement. According to such index, the regulation level can be maximal, medium, or minimal.

gdp_2018	1.397*** (0.005)	1.923*** (0.001)	1.920*** (0.000)
gdp_2018_sq	-0.011** (0.013)	-0.016*** (0.002)	-0.015*** (0.001)
French		-40.389*** (0.002)	-9.006 (0.559)
German		-53.047*** (0.000)	-18.635 (0.220)
Scandinavian		-83.580*** (0.001)	-36.750 (0.155)
Socialist		8.811 (0.453)	26.485** (0.029)
Spanish		25.138** (0.035)	40.451*** (0.001)
muslim		0.372 (0.416)	0.330 (0.418)
year_pb		-0.231 (0.239)	-0.107 (0.577)
Regulation level: Min	6.630 (0.441)		13.520* (0.098)
Regulation level: Max	-17.938 (0.113)		-17.759* (0.080)
pen_ord	-22.046** (0.024)		-4.098 (0.689)
jury_trial	19.258** (0.032)		15.230* (0.054)
N	52	52	52
R-squared	0.590	0.662	0.765

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The level of criminality, proxied by homicide rates per 100.000 inhabitants, is only significant when considering factors internal to the criminal justice system, and only at the 10% level. The relationship between crime levels and plea-bargaining rates is shaped as a reverse U, with lower use of plea bargaining observed both in jurisdictions with extremely high and extremely low criminality levels. However, such relationship is not significant when considering factors external to the criminal justice system and in the full specification.

Throughout all specifications, GDP per capita is positively associated with plea-bargaining rates in the normal form, while negatively in the squared form, and statistically significant at the 1% level. Hence, in line with our expectations, the relationship between GDP per capita and plea-bargaining rates is shaped as a reverse U. Our explanation is that the poorest countries of the sample cannot invest enough resources in the criminal justice system, thus leading to the overburdening of prosecutors and courts. The probability of a criminal conviction, especially in petty cases, is then lowered for many criminals, who can reasonably expect to escape punishment at trial; this in turns renders the certain punishment following plea bargaining a rather unattractive option. Conversely, richer jurisdiction might afford to trade off higher resource savings with higher accuracy in adjudication, thus promoting the implementation of full trials for larger proportions of defendants. Such choice is probably motivated by the consideration that plea bargaining is likely associated with higher chances of wrongful convictions compared to ordinary trials (Bibas, 2004; Givati, 2014; Dušek and Montag, 2017).

Coming to legal origins, they turn out to be significant not only for the formalization of plea bargaining, but also for its subsequent use in practice. When considering only factors external to the narrow domain of criminal procedure, the French, German, and Scandinavian legal origins are all strongly and negatively associated with plea-bargaining rates, with 1% significance. The Spanish one is instead associated with higher plea-bargaining rates, and significant at the 5% level. However, in the full specification none of the French, German, or Scandinavian legal origins is significantly different from the omitted common law category. Instead, both the Socialist and the Spanish ones are significant and display a positive coefficient. In particular, the Socialist legal origin is associated with an increase of 25 percentage points in the use of plea bargaining, with 5% significance. The Spanish legal origin is in turn associated with an increase of 41 percentage points in the use of plea bargaining, with 1% significance. The significance of both legal origins, even when controlling for the regulation level of the procedure, seems to confirm the existence of “structures of interpretation and meaning” (Langer, 2004, p.10) proper of certain legal traditions. Thus, even if plea-bargaining procedures are regulated in a similar way, and when controlling for the presence of jury trials and penal orders, jurisdictions belonging to the Spanish and Socialist legal origins witness a greater use of plea bargaining compared to the English tradition. Such result is especially interesting, since it disproves the common opinion (Langer, 2004, 2021; Garoupa and Stephen, 2008; Givati, 2014) according to which common law and the adversarial tradition are naturally conducive towards a greater use of plea bargaining in comparison to jurisdictions of inquisitorial tradition.

While a majoritarian Muslim population plays a significant role in the formalization of plea bargaining, the share of Muslims in the population is never significantly associated with different plea-bargaining rates. A possible explanation is that, where Islam is not the majoritarian religion, Shariah values cannot significantly influence the behavior of Muslim citizens towards criminal procedural choices. An alternative explanation is that the share of Muslims in the population of the jurisdictions analyzed is too low to influence the overall plea-bargaining rate, even though Muslim citizens avoid the use of plea bargaining.

The year of formalization of the procedure is not significant in any specification. Such result can be explained in two ways. First, having a plea-bargaining procedure for a longer period of time does not modify the structures of interpretation and meaning of the relevant actors, neither it is associated with a significant learning effect. However, if this is the main explanation, it is possible that our results are contingent on the characteristics of our sample. Thus, in some years from now we may observe that the introduction of plea bargaining has indeed modified the structure of interpretation and meaning proper of certain legal traditions. Second, in many jurisdictions the formalization of a plea-bargaining procedure has taken place only years or even decades after the emergence of a related informal practice.<sup>54</sup> Hence, the year of formalization of the procedure might not constitute a good indicator of the age of the procedure itself. However, it is also the only reliable data point regarding for how many years the procedure has been in place, given the many difficulties in pinpointing the origin of informal practices, or the moment in which they truly became relevant in the everyday disposition of criminal cases, especially in a cross-county setting.

In the full specification, the regulation level of the plea-bargaining procedure turns out to be a marginally significant factor as well. In particular, a minimal regulation of the procedure is associated with an increase of 13 percentage points in the use of plea bargaining compared to a medium level of regulation. Conversely, a maximal level of regulation is associated with a decrease of nearly 18 percentage points in plea-bargaining rates. Both results are statistically significant at the 10% level and in line with our theoretical expectations. Indeed, a minimal level of regulation allows the use of

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<sup>54</sup> For example, in the U.S. plea bargaining was the usual way for disposing of criminal cases in certain courts already at the beginning of the 20<sup>th</sup> century, but the procedure was not formalized until 1970; see Alschuler (1979) and Langbein (1979). Similarly, the practice of *Absprachen* originated in Germany in the late 1970s, but a formal regulation was only approved in 2009; see Rauxloh (2011).

plea bargaining in a larger number of cases and reduces the size of transaction costs. The effect on transaction costs is produced by the possibility for the parties of negotiating more aspects of the agreement, and by the limited involvement of actors different from prosecutors and defendants, such as victims and judges.

When controlling for legal origins and other factors external to the narrow domain of criminal procedure, the presence of both penal orders and jury trials drops in significance. In particular, penal orders are not significant in the full specification, in contrast with the regressions that only considered factors internal to the criminal justice system. Such result seems to confirm that plea bargaining and penal orders are not perfect functional equivalents, despite the shared objective of reducing the number of fully contested criminal trials. Regarding the presence of jury trials, in the full specification it is only statistically significant at the 10% level, and it is associated with an increase of nearly 20 percentage points in the use of plea bargaining. Despite the lower statistical significance, such result is in line with our theoretical expectations, and with the common opinion that links jury trials with an increased demand for plea bargaining (Ortman, 2020).

As reported in Appendix B.5, all the results of Table 5 are robust to the use of overlapping factors of both jury trials and penal orders, instead of the dummy variables `pen_ord` and `jury_trial`. The results are also robust to the exclusion of South Africa from the sample.<sup>55</sup>

## 5. Limitations

The limitations of the present paper can be grouped into four categories. First, the results discussed above cannot directly support any causal claim, being the outcome of correlational analyses. However, our results can be considered as exploratory ones, setting the direction of future research (Engel, 2021), and “narrowing down the set of plausible theories” (Spamann, 2015, p.138).

Second, data availability constitutes a major source of limitations, and probably the main reason why “the empirical study of plea bargaining [...] around the globe is still in its infancy” (Langer, 2021, p.385). Indeed, we were able to compute plea-bargaining rates only for 52 jurisdictions out of the 101 that formalized a plea-bargaining procedure, with reference only to 2019, and with the limitations already discussed in Section 3. Furthermore, plea-bargaining rates are mainly available for Europe and rather rich countries, but not for poorer countries and especially African ones. Hence, the results discussed above could differ when considering a different sample of jurisdictions. However, it does not seem possible to build a much different dataset to date, and ours constitute the most comprehensive one so far, and the only useful one for cross-country comparisons, being referred to one single year.<sup>56</sup> Limitations in data availability affect also other variables employed in the analysis. For criminality levels, given the problem of underreporting, we relied on the proxy constituted by homicide rates, which provides a good reference only insofar the homicide rate of a jurisdiction is sufficiently correlated with its general level of criminality.<sup>57</sup> Similarly, the level of material resources

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<sup>55</sup> As discussed in Section 3 the plea-bargaining rate in South Africa is referred to the formalized plea-bargaining procedure regulated by Sec. 105A of the Criminal Procedure Act, although there are reasons to believe that the older and informal procedure governed by Sec. 112 is still the most used in practice (Adelstein, 2019). Hence, the rate used in the present paper might not reflect the actual use of plea bargaining in the jurisdiction, as it seems suggested by the fact that South Africa is an outlier within the English legal origin, having a plea-bargaining rate of just 0,98%.

<sup>56</sup> As mentioned above, only two other studies report plea-bargaining rates for different countries, to the best of our knowledge. Fair Trials (2017), which also considers cooperation agreements, reports plea-bargaining rates for 20 jurisdictions, without considering them all in a single year, but spanning from 2005 to 2014. Langer (2021) compute plea-bargaining rates for 26 jurisdictions, but without considering a single year for all and spanning from 2013 to 2017.

<sup>57</sup> The World Value Survey contains some questions directed at measuring the criminality level in a certain country, such as how many times the respondent or a member of the respondent’s family were victims of crimes in the last year. However, those variables are not only available for many countries included in our sample. Similarly, the World Victimization Survey is in total limited to 31 countries, and the most recent observations are referred to 2005, hence being hardly usable with reference to plea-bargaining rates in 2019.



of a criminal justice system has been proxied by GDP per capita, which constitutes a good substitute only insofar it sufficiently correlates with the underlying variable of interest.<sup>58</sup> As discussed in subsection 5.2., also the year of formalization of plea bargaining constitutes an imprecise measure of the age of the procedure itself, for those jurisdictions in which an informal plea bargaining system already developed in practice.

Third, the present research adopts a cross-country perspective, necessarily overlooking country-specific factors. However, such factors can play an important role in influencing both the probability of formalizing plea bargaining and its subsequent use in practice.

Fourth, some factors identified as relevant in the literature have not been tested in the present paper with reference to plea-bargaining rates. One reason is that there is not enough variation in our sample in the variables of interest, as in the case of the election of prosecutors or the legality of death penalty. Another reason is that a cross-country setting does not fit the test of certain hypotheses, such as the impact of pretrial detention and of psychological biases on the likelihood of concluding a plea agreement. A final reason is again the scarcity of available data, as for the share of defendants represented by publicly appointed lawyers, the density of lawyers, or the complexity of criminal trials.

## 6. Conclusion

Over the last few decades, the adoption of plea-bargaining procedures in a large number of jurisdictions worldwide has been described as one of the most important trends in contemporary criminal procedure (Langer, 2004, 2021; Garoupa and Stephen, 2008; Fair Trials, 2017; Voigt, 2021). However, little is known to date about the number of jurisdictions that have adopted plea bargaining, the variations in the legal design of such procedures, and the importance of their use in practice.

The present paper aimed at filling this research gap in a twofold way. First, we surveyed 174 jurisdictions worldwide, finding that 101 of them formalized plea bargaining, and coding several aspects characterizing the legal design of each procedure of this kind. The resulting dataset is, to the best of our knowledge, the most adjourned and comprehensive one regarding the legal design of plea bargaining, and it can constitute the basis for further research about the adoption and use of such procedure. Second, we documented the importance of plea bargaining in practice, by computing the plea-bargaining rate of 52 jurisdictions in 2019. On the model of Langer (2021), such rate is defined as the percentage of convictions imposed through plea bargaining over the total number of convictions imposed in a given jurisdiction and year. This second dataset is, to the best of our knowledge, the most comprehensive one regarding plea-bargaining rates, and the only one considering different jurisdictions with reference to one single year.

By employing our novel dataset, we explored the relationship between certain factors and differing probabilities of formalizing a plea-bargaining procedure. By adopting a probit model on a sample of 170 jurisdictions we find that both legal origins and the influence of Sharia play a significant role. In particular, when considering common law as the baseline category, the French and Scandinavian legal origins are associated with a decrease of respectively 32 and 52 percentage points in the probability of formalizing plea bargaining. The influence of Sharia, proxied by having a majoritarian Muslim population, is instead associated with a drop of 30 percentage points in the probability of formalizing plea bargaining. All the results are significant at the 1% level, and robust to the adoption of logit and OLS estimations.

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<sup>58</sup> Similar studies (Givati, 2014) adopted as alternative measure of the resources of a system, but just in robustness checks, the number of court personnel per 100.000 inhabitants. However, the UN Office on Drugs and Crime only reports such variable for little more than 30 jurisdictions.

In addition, by adopting a simple OLS model on a sample of 52 jurisdictions, we explored which factors are associated with different rates of use of plea bargaining. First, we find that both extremely high and extremely low levels of GDP per capita are associated with lower plea-bargaining rates. Second, in line with the legal historic literature about the emergence and diffusion of plea bargaining in the U.S. (Alschuler, 1979; Langbein, 1979; Ortman, 2020) we find that the presence of jury trials is associated with an increase of 15 percentage points in the use of plea bargaining. Finally, we find that legal origins are also associated with different plea-bargaining rates, considering common law as the baseline category. Indeed, the Socialist legal origin is associated with an increase of 26 percentage points in plea-bargaining rates, while the Spanish one with an increase of 40 percentage points. These results seem to confirm the existence of “structures of interpretation and meaning” (Langer, 2004, p.10) typical of different legal traditions, which shape the procedural choices of individuals, even in presence of similar regulatory frameworks. Furthermore, both results seem to disprove the dominant opinion which considers common law and the accusatorial tradition as associated with a greater use of plea bargaining (Langer, 2004, 2021; Garoupa and Stephen, 2008; Givati, 2014) compared with jurisdictions of inquisitorial tradition.

Since our results cannot be used to directly support causal claims, one possible direction of future research is the identification of appropriate settings for inferring causality. Such settings can also be found at within-country level, considering the documented variation in the use of plea bargaining across different regions (Boari and Fiorentini, 2001; Altenhaim et al., 2013; Soubise, 2018). A further line of inquiry can test the effect of different plea-bargaining rates upon several outcome variables, such as crime rates, criminal courts’ caseloads, clearance rates, or expenditures in the criminal justice system. Finally, future research might aim at improving the quality and coverage of our datasets, by exploring the use of plea bargaining in a larger number of jurisdictions and across different periods of time.

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## Appendix A

### A.1. Jurisdictions covered (N = 174)

Albania, Algeria, Andorra, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Belize, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Central African Republic, Chad, Chile, China, Colombia, Congo, Costa Rica, Cote d'Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Democratic Republic of the Congo, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, England and Wales, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Fiji, Finland, France, French Guyana, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Guatemala, Guinea, Guinea Bissau, Guyana, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kosovo, Kuwait, Kyrgyzstan, Latvia, Lebanon, Lesotho, Liberia, Libya, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Maldives, Mali, Macao, Malta, Mauritania, Mauritius, Mexico, Moldova, Monaco, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, North Macedonia, Northern Ireland, Norway, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Rwanda, San Marino, Saudi Arabia, Scotland, Senegal, Serbia, Sierra Leone, Singapore, Slovakia, Slovenia, Solomon Islands, South Africa, South Korea, South Sudan, Spain, Sri Lanka, Sudan, Suriname, Sweden, Switzerland, Syria, Taiwan, Tajikistan, Tanzania, Thailand, Timor-Leste, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, United Arab Emirates, United States, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Zambia, Zimbabwe.

#### A.1.1. Jurisdictions with plea bargaining (N = 101)

Jurisdiction	Year	Name	Sources of data for p.b. rates	Regulation level	Legal origin
Albania	2017	Judgement upon agreement (Gjykimi me marrëveshje)	NA	Maximal	French
Argentina	1997	Abbreviated judgement (Juicio abreviado)	E-mail on 01.06.2022 from Oficina de Estadísticas - Dirección General de Planificación - Consejo de la Magistratura	Minimal	Spanish
Armenia	2022	Consent procedure (Համաձայնեցման վարույթը)	NA	Maximal	Socialist
Australia	1996	Plea negotiations Or Plea bargaining	Annual Report 2019-2020 – Australia's Federal Prosecution Service	Minimal	English



Bahamas	2008	Plea Agreements	NA	Minimal	English
Belgium	2016	Prior admission of guilt (Reconnaissance préalable de culpabilité)	NA	Maximal	French
Belize	1998	Plea of guilty to different charge	NA	Minimal	English
Bhutan	2001	Plea bargain	NA	Minimal	English
Bolivia	2000	Abbreviated procedure (Procedimiento abreviado)	Anuario Estadístico Judicial 2019 – Consejo de la Magistratura	Medium	French
Bosnia and Herzegovina	2003	Plea bargaining (Pregovaranje o krivnji)	Justice statistics 2019 – Institute for Statistics of FBiH	Medium	French
Bulgaria	2000	Settlement of the case by agreement (Решаване На Делото Със Споразумение)	Email from National Statistical Institute on 24.06.2022	Minimal	Socialist
Burundi	2018	Guilty plea procedure (Procédure d’aveu et de plaider de culpabilité)	NA	Medium	French
Canada	1995	Guilty plea procedure / Pladoyer de culpabilité	Email from Ministère de la Justice du Québec – Direction du Bureau du sous-ministre et du Secrétariat general on 17.11.2022	Minimal	English
Chile	2000	Simplified procedure and Abbreviated procedure (Procedimiento abreviado and Procedimiento simplificado)	Email from Fiscalía Nacional on 29.06.2022	Minimal	Spanish
China	2018	Leniency System for Pleas of Guilty and Punishment 认罪认罚从宽制度	For plea agreements: Data provided by Xiaoge Dong, retrieved from the Annual Report of	Minimal	Socialist

			the Supreme Court 2020. For criminal convictions: “China’s criminal justice system in the Age of Covid” Report, by Safeguard Defenders (2022).		
Colombia	1989	Pre-trial agreements and negotiations (Preacuerdos y negociaciones)	Informe De Estadísticas Del Sistema Penal Oral Acusatorio SPOA 2020, by Corporación Excelencia en la Justicia	Minimal	Spanish
Costa Rica	1996	Abbreviated procedure (Procedimiento abreviado)	Email from Poder Judicial – Subproceso de Estadísticas, on 05.07.2022	Medium	Spanish
Cote d’Ivoire	2018	Appearance upon prior admission of guilt (Comparution sur reconnaissance préalable de culpabilité)	NA	Maximal	French
Croatia	2008	Judgment based on agreement of the parties (Presuda na temelju sporazuma stranaka)	Adult Perpetrators of Criminal Offences, Reports, Accusations and Convictions, 2019 by Croatian Bureau of Statistics	Medium	German
Cuba	1994	Abbreviated procedure (Procedimiento abreviado)	NA	Maximal	Socialist
Czech Republic	2012	Agreement on guilt and punishment (Dohoda o vině a trestu)	Email from Ministry of Justice of the Czech Republic - Judicial Analysis and Statistics	Maximal	German

			Unit, on 03.01.2023		
Dominican Republic	2007	Abbreviated criminal trial (Procedimiento penal abreviado)	Email from Oficina de Acceso a la Información Pública - Consejo del Poder Judicial, on 01.11.2022	Minimal	Spanish
Ecuador	1994	Abbreviated trial (Procedimiento abreviado)	NA	Maximal	Spanish
El Salvador	1998	Abbreviated criminal trial (Procedimiento penal abreviado)	Movimiento Ocurrido en las Instancias con Competencia Penal Adulto - Enero a Diciembre 2019 by Dirección de Planificación Institucional unida d de Información y Estadística	Medium	Spanish
England and Wales	2004	Guilty plea agreements	Criminal Justice System Statistics publication: Prosecutions and Convictions, by Ministry of Justice	Minimal	English
Equatorial Guinea	1967	Conformity [with the prosecutor's case] (Conformidad)	NA	Maximal	Spanish
Estonia	2003	Arrangement procedure (Kokkuleppemenetus)	For plea agreements: Summary of Procedure Statistics of First and Second Instance Courts 2019 (Esimese ja Teise Astme Kohtute Menetusstatistika 2019. A Koondandmed).	Maximal	Socialist

			For criminal convictions: UNECE Statistical Database - Convictions by age category and sex of offender		
Fiji	2009	Plea agreement	NA	Minimal	English
Finland	2015	Confession proceeding (Tunnustamisoikeudenkäynti)	For plea agreements: Email from Institute of Criminology and Legal Policy  Faculty of Political Science  University of Helsinki, on 06.09.2022.  For criminal convictions:  Statistics Finland, Prosecutions, sentences and punishments - Persons sentenced in court, summary penal fines and petty fines, total (number)	Maximal	Scandinavian
France	2004	Appearance on prior admission of guilt (Comparution sur reconnaissance préalable de culpabilité, CRPC)	“Les condamnations - Années 2019 et 2020”, by Ministère de la Justice	Maximal	French
French Guyana	2004	Appearance on prior admission of guilt (Comparution sur reconnaissance préalable de culpabilité, CRPC)	“Les condamnations - Années 2019 et 2020”, by Ministère de la Justice	Maximal	French
Gabon	2019	Appearance upon prior admission of guilt (Comparution sur reconnaissance préalable de culpabilité)	NA	Maximal	French

Georgia	2004	Plea agreement (საპროცესო შეთანხმება)	Dynamic of hearing criminal cases at the Common Courts of Georgia, by National Statistics Office of Georgia	Minimal	Socialist
Germany	2009	Negotiated agreement (Verständigung)	Rechtspflege – Strafgerichte, 2019, by Statistisches Bundesamt	Maximal	German
Ghana	2022	Plea bargaining	NA	Minimal	English
Greece	2019	Criminal bargaining (Ποινική διαπραγμάτευση)	NA	Medium	French
Guatemala	1992	Abbreviated trial (Procedimiento abreviado)	Informe Annual 2019-2020, by Ministerio Público	Maximal	Spanish
Guyana	2009	Plea agreement	NA	Maximal	English
Honduras	1999	Abbreviated trial (Procedimiento abreviado)	Boletín Estadístico 2019, by Poder Judicial de Honduras	Minimal	Spanish
Hong Kong	2013	Plea Negotiation and Agreement	NA	Minimal	English
Hungary	2000	Settlement (egyezség) and Measured proposal (mértékes indítvány)	For plea agreements: Prosecutor's Office Statistics Information (Criminal Law Branch) - The 2019. Annual Activity.  For criminal convictions: Criminality and Criminal Justice 2020, published by the Office of the Prosecutor General	Medium	German

India	2005	Plea bargaining	Crime in India 2019, by National Crime Records Bureau (Ministry of Home Affairs)	Minimal	English
Ireland	2001	Sentence discount in case of guilty plea	Courts Service's Annual Report 2019	Minimal	English
Israel	1972	Plea bargain (הסדר טיעון)	Email from Department of Justice, following FOIA request, on 18.10.2022	Minimal	English
Italy	1988	Plea bargaining (Patteggiamento), formally Application of sentence upon parties' request (Applicazione della pena su richiesta delle parti)	Email from Ministero della Giustizia – Direzione Generale Statistiche, on 22.12.2022	Maximal	French
Jamaica	2006	Plea Negotiations and Agreements	Parish Courts of Jamaica - The Chief Justice's Annual Statistics Report for 2019	Minimal	English
Kazakhstan	2014	Procedural agreement in the form of a plea bargaining (Кінәні мойындау туралы мәміле нысанында процестік келісімді )	NA	Medium	Socialist
Kenya	2008	Plea agreement	NA	Minimal	English
Kosovo	2013	Plea agreement (Negocimi i marrëveshjes mbi pranimin e fajësisë)	NA	Medium	French
Kyrgyzstan	2019	Plea agreement (Күнөөнү мойнуна алуу жөнүндө процессуалдык макулдашуу)	NA	Minimal	Socialist
Latvia	2004	Pretrial agreement (Vienošanās piemērošana pirmstiesas kriminālprocesā) and Agreement during court	Email from The Court Administration of Latvia, on 17.11.2022	Medium	Socialist

		proceedings (Vienošanos iztiesāšanas procesā)			
Lesotho	1989	Plea bargaining	NA	Minimal	English
Luxembourg	2015	Judgement upon agreement (Jugement sur accord)	La Justice en Chiffres 2019	Maximal	French
Malawi	2010	Plea bargaining	NA	Minimal	English
Malaysia	2010	Plea bargaining	NA	Minimal	English
Maldives	2014	(އިއަދި ތަފާހާ ފޯމުލާ ލިބިގެންނަވާ) Confession agreement	NA	Minimal	English
Malta	2002	Sentence at the request of the parties	NA	Medium	English
Mexico	2009	Abbreviated trial (Procedimiento abreviado)	E-mail from Instituto Nacional de Estadística y Geografía (INEGI), on 01.08.2022	Medium	Spanish
Moldova	2003	Acknowledgement of guilt (Recunoasterea vinovatiei)	E-mail from National Bureau of Statistics of the Republic of Moldova, on 21.07.2022	Medium	Socialist
Mongolia	2015	Simplified procedure (Хялбаршуулсан Журмаар)	NA	Medium	German
Montenegro	2009	Plea agreement (Sporazum o priznanju krivice)	NA	Maximal	French
Nepal	2017	Plea agreement	NA	Medium	English
New Zealand	2011	Sentence indications	E-mail from Ministry of Justice   Tāhū o te Ture, on 12.09.2022	Minimal	English
Nicaragua	2001	Agreements (Acuerdos)	NA	Minimal	Spanish
Niger	2007	Appearance upon prior admission of guilt (Comparution sur	NA	Maximal	French

		reconnaissance préalable de culpabilité)			
Nigeria	2015	Plea agreement	NA	Maximal	English
North Macedonia	2010	Entering judgement based on settlement (Донесување на пресуда врз основа на спогодба)	State Statistical Office of the Republic of Macedonia	Medium	French
Northern Ireland	1994	Reduction in sentence for guilty pleas	Judicial Statistics 2019, by Northern Ireland Courts and Tribunals Service	Minimal	English
Panama	2008	Sentence agreements (Acuerdos de Pena)	Estadísticas Judiciales, by Procuraduría General de la Nación	Medium	Spanish
Papua New Guinea	2006	Plea bargaining	NA	Minimal	English
Paraguay	1998	Abbreviated trial (Procedimiento abreviado)	E-mail from Dirección de Transparencia y Acceso a la Información Pública - Corte Suprema de Justicia, on 07.02.2023	Medium	Spanish
Peru	2006	Early termination process (Proceso de terminación anticipada)	NA	Maximal	Spanish
Philippines	1940	Plea to a lesser offense or Plea bargaining	NA	Minimal	English
Poland	1997	Sentence without trial (Skazanie bez rozprawy) and Voluntary surrender of sentence (Dobrowolne poddanie się karze)	E-mail from Wydział Statystycznej Informacji Zarządczej Departament Strategii i Funduszy Europejskich, on 15.07.2022	Medium	German



Romania	2010	Agreement upon acknowledgement of guilt (Acord de recunoaștere a vinovăției)	E-mail from Ministerul Public, on 22.06.2022	Medium	French
Russia	2001	Special order of court proceeding (Особый порядок судебного разбирательства)	Report on the Work of the Courts of General Jurisdiction in Reviewing Criminal Cases in the First Instance, 2019	Minimal	Socialist
Rwanda	2022	Plea bargaining	NA	Minimal	German
San Marino	2022	Plea bargaining (Patteggiamento)	NA	Maximal	French
Scotland	1995	Sentence discounting	For guilty pleas: Email from Scottish Courts and Tribunals Service Headquarters upon FOI request, on 09.08.2022. For criminal convictions: Criminal Proceedings in Scotland, 2019-20, available at <a href="https://www.gov.scot/publications/criminal-proceedings-scotland-2019-20/pages/9/">https://www.gov.scot/publications/criminal-proceedings-scotland-2019-20/pages/9/</a>	Minimal	English
Serbia	2009	Plea agreement (Sporazum o priznanju krivičnog dela)	Republic PPO, the Official Report published on rjt.gov.rs	Minimal	French
Singapore	2011	Plea agreement	NA	Minimal	English
Slovakia	2012	Plea agreement (Dohoda o vine a treste)	E-mail from Analytické centrum	Minimal	German

			Ministerstvo spravodljivosti SR, on 22.12.2022		
Slovenia	2011	Plea agreement (Sporazum o priznanju krivde)	Email from Office for Court Management Development – Supreme Court of Slovenia, on 31.01.2023	Minimal	German
Solomon Islands	1996	Plea to a lesser offense or Plea bargaining	NA	Minimal	English
South Africa	2001	Plea and sentence agreements	Annual Report by National Prosecution Authority 2019- 2020	Minimal	English
Spain	1882	Acceptance of charges (Conformidad)	Estadística Judicial by Poder Judicial de España	Maximal	Spanish
Sri Lanka	1979	Plea to a lesser offense or Plea deal	NA	Minimal	English
Switzerland	2007	Abbreviated procedure (Procédure simplifiée Procedura abbreviata Abgekürztes Verfahren)	Compte rendu de l'activité du Pouvoir judiciaire en 2019, by Commission de gestion du Pouvoir judiciaire	Maximal	German
Taiwan	2004	The bargaining process (協商程序)	For number of plea agreements: Results of Judgments and Rulings of Criminal First Instance Plea Bargaining Procedure Cases by the District Courts by Year.  For criminal convictions:	Maximal	German

			Number of Persons Sentenced in Criminal First Instance Cases Terminated by the District Courts by Year.		
Tanzania	2021	Plea bargaining	NA	Minimal	English
Tonga	2001	Plea to a lesser offense or Plea bargaining	NA	Minimal	English
Trinidad and Tobago	1999	Plea agreement	NA	Minimal	English
Turkey	2020	Expedited procedure (Seri muhakeme usulü)	NA	Medium	French
Uganda	2016	Plea bargaining	For number of plea agreements: Judiciary of The Republic of Uganda - Rapid Institutional and Economic Assessment 2020.  For criminal convictions: Uganda Police Annual Crime Report 2019.	Minimal	English
Ukraine	2012	Plea agreement between the prosecutor and the suspect or accused (угода між прокурором та підозрюваним чи обвинуваченим про визнання винуватості)	For number of plea agreements: General indicators of court proceedings by the court of first instance.  For number of criminal convictions: Analysis of the state of implementation justice in criminal proceedings and cases on administrative offenses	Maximal	Socialist

			in 2019		
United States of America	1970	Plea bargaining	Federal Justice Statistics, 2019	Minimal	English
Uruguay	2017	Abbreviated trial (Procedimiento abreviado)	Procesos penales 2019, CPP 2017 - Estudio sobre procesos concluidos en los Juzgados Letrados con competencia en materia CPP 2017	Medium	Spanish
Uzbekistan	2021	Plea agreement (Aybga iqrорlik to'g'risidagi kelishuv)	NA	Maximal	Socialist
Vanuatu	2018	Charge negotiation	NA	Minimal	English
Venezuela	1999	Guilty plea procedure (Procedimiento por admisión de los hechos)	NA	Maximal	Spanish
Zambia	2010	Plea agreement	NA	Minimal	English

### A.1.2. Text of the survey circulated among legal experts

Please note that not all the information gathered through the survey were used for the analysis presented in this paper.

#### I. Introductory text

Dear Reader,

The present questionnaire aims at gathering information about:

- (a) the legal design of plea-bargaining procedures in different jurisdictions;
- (b) institutional features of the criminal justice systems they belong to.

Since many different procedures can be considered plea bargaining, please apply the following definition when answering the questions: "Plea bargaining is an institution of criminal procedure, which allows the criminal conviction of a defendant, who explicitly accepts to plead guilty or to otherwise waive his right to trial, in exchange for some benefits from the prosecutor or the judge".

Thus, even if they have some traits in common with plea bargaining, the following mechanisms are excluded from the relevant definition: a) simplified trials; b) penal orders; c) diversion mechanisms.

The maximum estimated time for completing the questionnaire is between 40 minutes and 1 hour.

If you want to be adjourned about the progress of the present research, please contact [gabriele.paolini@edle-phd.eu](mailto:gabriele.paolini@edle-phd.eu)

Thank you very much for your help.

Best regards,

Gabriele Paolini  
Elena Kantorowicz-Reznichenko  
Stefan Voigt

## **II. Anonymity and credits options**

Do you want to be credited as contributor to the present research project?

- 1) Yes
- 0) No

If you want to be listed among contributors, please indicate your name and/or your affiliation.

### **1. Preliminary information**

Country for which information is provided:

What is your main occupation?

- 1. Professor/researcher
- 2. Prosecutor
- 3. Judge
- 4. Lawyer
- 5. Government official
- 6. Other

If you indicated "other", please specify your occupation:

Does a formalized plea-bargaining procedure exist in your country?

A plea-bargaining procedure is formalized when it is regulated by statute, or a court decision has upheld its constitutionality and/or provided some regulation.

- 1) Yes
- 0) No

*(Please, be aware that it is not possible to change the answer to this question later)*

## ***A. COUNTRIES WITHOUT FORMALIZED PLEA-BARGAINING PROCEDURES***

### **2. Practices and reforms**

Has a formalized plea-bargaining procedure ever existed in your country?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

In which year was it introduced?

In which year was it abolished?

What were the reasons for the abolition?

Is there an intention to introduce a plea-bargaining procedure?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

In which year is it expected to come into force?

Has there been any attempt to introduce a formalized plea-bargaining procedure?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

For which reasons did the attempt fail?

Do informal plea negotiations take place today?

1) Yes

0) No

Can you please indicate one or more sources for the description of such practices?

### **3. Alternatives to plea bargaining**

#### **3.1. Penal orders**

Can a prosecutor obtain a criminal conviction by recurring to a penal order?

*With the term "penal order" we refer to the submission, in writing, of a suggested charge and punishment from the prosecutor to the defendant. If the defendant rejects the proposal within a limited period of time, their case will be decided by a judge. If instead he explicitly accepts the proposal or fail in opposing it before a deadline, the penal order will result in a criminal conviction.*

1) Yes

0) No

What is the name of the penal order procedure in the legal language of your country?

What was the number of criminal proceedings dealt with the penal order procedure in 2019?

Can you please provide a link for the source of this information?

### **3.2. Simplified trials**

Can a prosecutor obtain a criminal conviction by recurring to a simplified trial?

*With the term “simplified trials” we refer to those procedures according to which a criminal case is adjudicated at the end of an abbreviated trial, resulting in a possible criminal conviction. During this kind of trials, the relevant evidence is only that gathered during the investigation phase, without the possibility of producing new evidence at trial.*

1) Yes

0) No

What is the name of such simplified trial procedure in the legal language of your country?

What was the number of criminal proceedings dealt with the simplified trial procedure in 2019?

Can you please provide a link for the source of this information?

### **3.3. Conditional dismissals**

Can a prosecutor terminate a criminal prosecution by recurring to a conditional dismissal?

*With the term “conditional dismissals” we refer to the termination of a criminal prosecution, conditioned on the fulfillment of certain actions by the suspect, such as restitution of the profits of the crime, restoration of the victim etc. The conditions are set by the prosecutor, according to the law, and their imposition on the suspect does not constitute a criminal conviction.*

1) Yes

0) No

What is the name of conditional dismissals in the legal language of your country?

What was the number of criminal proceedings dealt with conditional dismissals in 2019?

Can you please provide a link for the source of this information?

### **3.4. Other mechanisms**

Can a prosecutor obtain a criminal conviction by recurring to other mechanisms, different from ordinary trials, simplified trials, penal orders, and plea bargaining?

1) Yes

0) No

What is the name of such other mechanism in the legal language of your country?

What was the number of criminal proceedings dealt with such other mechanisms in 2019?

Can you please provide a link for the source of this information?

Can you briefly describe such mechanisms?

## **4. Criminal convictions and criminal proceedings**

What was the total number of criminal convictions imposed in 2019?

Can you please provide a link for the source of this information?

What was the total number of criminal proceedings concluded in 2019?

*A criminal proceeding is concluded when a conviction, an acquittal, or any other kind of judicial decision terminates the proceeding itself.*

Can you please provide a link for the source of this information?

### **5.1. Indication of other experts**

If you did not know the answer to some questions, but you know someone who is willing and able to provide answers, please let us know.

### **5.2. General comments and corrections**

You can correct previous answers or make any other comment down here.

## ***A. COUNTRIES WITH A FORMALIZED PLEA-BARGAINING PROCEDURE***

### **2. Year of formalization, source of regulation, and name**

In which year was the plea-bargaining procedure formalized?

Can you indicate the source of regulation of the plea-bargaining procedure in your country? (E.g. Art. 444 of code of criminal procedure, sentence n. xxxx of the Constitutional Court etc.).

What is the name of the plea-bargaining procedure in the legal language of your country?

### **3. Informal plea-bargaining practices**

Did informal plea negotiations take place in the years before the plea-bargaining procedure was regulated by law?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Can you please indicate one or more sources for the description of such practices?

Despite the formal regulation of plea bargaining, do informal plea negotiations still take place today?

*With "informal negotiations" we refer to plea negotiations which take place in contrast with or beyond the limits set by the law.*

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Can you please indicate one or more sources for the description of such practices?

### **4. Reasons for formalization**

Which of the following reasons were offered by the policy-makers to justify the formalization of the plea-bargaining procedure?

*It is possible to tick more than one option.*

1) Reducing judicial backlog

2) Saving judicial resources



- 3) Saving prosecutorial resources
- 4) Dealing more efficiently with minor crimes
- 5) Dealing more effectively with more complex cases (e.g. involving environmental crimes, white-collar crimes, organized crime etc.)
- 6) Enlarging the faculties of the defendant during the criminal process
- 7) Regulating a pre-existing informal practice
- 8) Other reasons

Can you please specify what other reasons were offered to justify the formalization of the plea-bargaining procedure?

### **5. Number of plea-bargaining procedures concluded**

What was the number of criminal proceedings dealt with the plea-bargaining procedure in 2019?

Can you please provide a link for the source of this information?

Over the last 5 years, the number of plea-bargaining procedures concluded:

- 7) Increased by 20% or more
- 6) Increased between 10 and 19%
- 5) Increased between 1 and 9%
- 4) Remained stable
- 3) Decreased between 1 and 9%
- 2) Decreased between 10 and 19%
- 1) Decreased by 20% or more

Can you please provide a link for the source of this information?

### **6.1. Number of criminal convictions imposed**

What was the total number of criminal convictions imposed in 2019?

Can you please provide a link for the source of this information?

### **6.2. Number of criminal proceedings concluded**

What was the total number of criminal proceedings concluded in 2019?

*A criminal proceeding is concluded when a conviction, an acquittal, or any other kind of judicial decision terminates the proceeding itself.*

Can you please provide a link for the source of this information?

### **7. Plea-bargaining reforms**

Was the plea-bargaining procedure reformed over the last 5 years?

*(Please, be aware that it is not possible to change the answer to this question later)*

- 1) Yes
- 0) No

Can you briefly describe the content of the reform(s)?

### **8. Limits to the applicability of plea bargaining**

Is the use of plea-bargaining excluded from cases involving crimes for which the law mandates a minimum punishment over a certain sentence severity threshold (e.g. crimes punishable with minimum 5 years imprisonment)?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Can you please indicate those thresholds?

Can you please indicate where in the law this exclusion is provided?

Is the use of plea bargaining excluded for certain categories of crimes (e.g. sex crimes, corruption, crimes against children, terrorism, organized crime etc.) ?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Can you please indicate those categories of crimes?

Can you please indicate where in the law this exclusion is provided?

Is the use of plea bargaining excluded for certain categories of criminals (e.g. recidivists or underage defendants)?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Can you please indicate those categories of criminals?

Can you please indicate where in the law this exclusion is provided?

## **9. Benefits attainable through plea bargaining**

During the plea-bargaining negotiations, are the parties allowed to bargain about:

An amendment of the charges?

1) Yes

0) No

A particular narration of the facts underlying the criminal prosecution?

1) Yes

0) No

A discount on the size of the sentence to be asked to the judge?

1) Yes

0) No

An amendment of the category (e.g. fine, prison sentence, suspended sentence etc.) of the sentence to be asked to the judge?

1) Yes

0) No

Is a minimum sentence discount statutorily provided in case of plea bargaining?

*E.g. A reduction of at least 1/4 of the sentence that would have been asked by the prosecutor in case of an ordinary trial.*

1) Yes

0) No

Can you please indicate the size of such minimum sentence discount?

Is a maximum sentence discount statutorily provided in case of plea bargaining?

*E.g. A reduction of at most 1/2 of the sentence that would have been asked by the prosecutor in case of an ordinary trial.*

1) Yes

0) No

Can you please indicate the size of such maximum sentence discount?

What is the average sentence discount received by defendants through plea bargaining in practice?

Can you please provide one or more sources of such information?

The conviction obtained through plea bargaining can be used as proof:

In civil proceedings?

1) Yes

0) No

In administrative proceedings?

1) Yes

0) No

In disciplinary proceedings?

1) Yes

0) No

## **10. Right to appeal**

Do defendants preserve their right to appeal the conviction that was concluded after plea bargaining?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Is the right to appeal waivable during the plea negotiations?

1) Yes

0) No

In which cases the parties can appeal against a conviction imposed as the result of the plea-bargaining procedure?

*(It is possible to tick more than one option)*

- 5) In the same cases of a conviction imposed as the result of an ordinary trial
- 4) For violations of procedural aspects
- 3) For discrepancies between the sentence agreed upon and the sentence imposed by the judge
- 2) For the emergence or discovery of new facts
- 1) In other cases

Can you please briefly describe those other cases?

### **11. Timing, information, and initiative**

Who may take the initiative for opening the plea-bargaining procedure?

*(It is possible to tick more than one option)*

- 1) The prosecutor
- 2) The Judge
- 3) The defendant
- 4) Others

Can you please specify which other subjects can initiate the plea-bargaining procedure?

At the outset of plea negotiations, have the defendants or their lawyer access to the prosecution file?

- 1) Yes
- 0) No
- 1.5) Partially

Can a plea agreement be concluded before the formal indictment is filed?

*(Please, be aware that it is not possible to change the answer to this question later)*

- 1) Yes
- 0) No

Can the defendants or their lawyer access the prosecutor's file before the formal indictment is filed?

- 1) Yes
- 0) No
- 1.5) Partially

What was the number of plea agreements concluded before the formal indictment was filed in 2019?

Can you please provide a source for this information?

Can a plea agreement be concluded after an ordinary trial has been initiated?

*(Please, be aware that it is not possible to change the answer to this question later)*

- 1) Yes
- 0) No

What was the number of plea agreements concluded after an ordinary trial had been initiated in 2019?  
Can you please provide a source for this information?

Can a plea agreement be concluded before a court of second instance?

- 1) Yes
- 0) No

What was the number of plea agreements concluded before courts of second instance in 2019?  
Can you please provide a source for this information?

## **12. Role of the judge**

Do judges take part in the plea negotiations, before a plea agreement is reached?

- 1) Yes, because required to do so by the law
- 2) Yes, in contrast with the law
- 3) Yes, in the absence of any legal provision regulating or prohibiting their participation
- 0) No

Is the plea agreement subject to judicial review before becoming effective?

*(Please, be aware that it is not possible to change the answer to this question later)*

- 1) Yes
- 0) No

What of the following aspects are object of judicial review:

*It is possible to tick more than one option.*

- 1) Voluntariness of the agreement
- 2) Comprehension of the criminal consequences of the plea agreement by the defendant
- 3) Comprehension of non-criminal consequences of the plea agreement by the defendant
- 4) Existence of a factual basis for the imposition of a criminal sentence
- 5) Proportionality between the sentence agreed upon and the severity of the crime
- 6) Proportionality between the sentence agreed upon and the culpability of the defendant
- 7) Others

Can you please specify what other aspects are object of judicial review?

Which of the following decisions can a judge take after reviewing the agreement:

*It is possible to tick more than one option.*

- 1) Rejecting the agreement
- 2) Asking the parties for negotiating a different agreement
- 3) Unilaterally modifying the content of the agreement
- 4) Convicting the defendant, but imposing a sentence that deviates from the content of the agreement

5) Others

Can you please specify what other decisions can a judge take?

What was the actual rejection rate in 2019?

Can you please provide a source for this information?

Is the judge required to motivate his decision regarding the agreement?

1) Yes

0) No

Is the decision taken during a public hearing?

1) Yes

0) No

**13. Legal counsel**

Is the presence of a lawyer mandatory when plea-bargaining negotiations are initiated?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Is this right waivable by the defendant?

1) Yes

0) No

Is the presence of a lawyer mandatory for concluding a plea agreement?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Is this right waivable by the defendant?

1) Yes

0) No

Is the presence of a lawyer mandatory at trial?

*It is possible to tick more than one option.*

*However, please do not tick both the "No" and one of the "Yes" options.*

5) Yes, in all cases

4) Yes, but only when the defendant is facing a possible prison sentence

3) Yes, but only when the defendant is facing a possible prison sentence over a certain threshold

2) Yes, but only when the defendant is facing a possible fine sentence over a certain threshold

1) Yes, in other cases

0) No

Can you please specify in which other cases is the presence of a lawyer mandatory at trial?

Is this right waivable by the defendant?

1) Yes

0) No

#### **14. Role of the victim**

Can the victim of the crime participate in the plea negotiations between the defendant and the prosecutor/judge?

1) Yes

0) No

0.5) Yes, but only in certain cases

Can you please specify in which cases?

Can the victim of the crime veto the conclusion of the plea agreement?

1) Yes

0) No

0.5) Yes, but only in certain cases

Can you please specify in which cases?

#### **15. Alternatives to plea bargaining**

##### **15.1. Simplified trials**

Can a prosecutor obtain a criminal conviction by recurring to a simplified trial?

*With the term “simplified trials” we refer to those procedures according to which a criminal case is adjudicated at the end of an abbreviated trial, resulting in a possible criminal conviction. During this kind of trials, the relevant evidence is only that gathered during the investigation phase, without the possibility of producing new evidence at trial.*

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Where in the law is the simplified trial procedure regulated?

What is the name of the simplified trial procedure in the legal language of your country?

Are simplified trials applicable to the same crimes for which plea bargaining can be used?

3) Yes, in all cases

2) Yes, in the majority of cases

1) Yes, but only in some cases

0) No

What was the number of criminal proceedings dealt with the simplified trial procedure in 2019?

Can you please provide a link for the source of this information?

### 15.2. Penal orders

Can a prosecutor obtain a criminal conviction by recurring to a penal order?

*With the term "penal order" we refer to the submission, in writing, of a suggested charge and punishment from the prosecutor to the defendant. If the defendant rejects the proposal within a limited period of time, their case will be decided by a judge. If instead he explicitly accepts the proposal or fail in opposing it before a deadline, the penal order will result in a criminal conviction.*

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Where in the law is the penal order procedure regulated?

What is the name of the penal order procedure in the legal language of your country?

Are penal orders applicable to the same crimes for which plea bargaining can be used?

3) Yes, in all cases

2) Yes, in the majority of cases

1) Yes, but only in some cases

0) No

What was the number of criminal proceedings dealt with the penal order procedure in 2019?

Can you please provide a link for the source of this information?

### 15.3. Conditional dismissals

Can a prosecutor terminate a criminal prosecution by recurring to conditional dismissals?

*With the term "conditional dismissals" we refer to the termination of a criminal prosecution, conditioned on the fulfillment of certain actions by the suspect, such as restitution of the profits of the crime, restoration of the victim etc. The conditions to be fulfilled are set by the prosecutor, according to the law, and their imposition on the suspect does not constitute a criminal conviction.*

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Where in the law are conditional dismissals regulated?

What is the name of conditional dismissals in the legal language of your country?

Are conditional dismissals applicable to the same crimes for which plea bargaining can be used?

3) Yes, in all cases

2) Yes, in the majority of cases

1) Yes, but only in some cases

0) No

What was the number of criminal proceedings dealt with conditional dismissals in 2019?

Can you please provide a link for the source of this information?



#### **15.4. Other mechanisms**

Can a prosecutor obtain a criminal conviction by recurring to other mechanisms, different from ordinary trials, simplified trials, penal orders, and plea bargaining?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Where in the law are those other mechanisms regulated?

What is the name of those other mechanisms in the legal language of your country?

Are those other mechanisms applicable to the same crimes for which plea bargaining can be used?

3) Yes, in all cases

2) Yes, in the majority of cases

1) Yes, but only in some cases

0) No

What was the number of criminal proceedings dealt with such other mechanisms in 2019?

Can you please provide a link for the source of this information?

#### **16. Prosecutorial discretion**

Is mandatory prosecution the legal principle regulating prosecutorial discretion in your country?

1) Yes

0) No

#### **17. Jury trials**

Does jury trial exist in your country?

*(Please, be aware that it is not possible to change the answer to this question later)*

1) Yes

0) No

Does jury trial apply to the same types of crimes that can be object of plea bargaining?

3) Yes, in all cases

2) Yes, in the majority of cases

1) Yes, but only in some cases

0) No

Is unanimity required for a conviction at a jury trial?

1) Yes

0) No

## 18. Pretrial detention

Is pretrial detention only available for crimes punishable with sentences above a certain severity threshold?

*(Please, be aware that it is not possible to change the answer to this question later)*

- 1) Yes
- 0) No

Can you please indicate this sentence severity threshold?

Is pretrial detention only available for certain categories of crimes?

*(Please, be aware that it is not possible to change the answer to this question later)*

- 1) Yes
- 0) No

Can you please indicate these categories of crimes?

Overall, can the crimes for which pre-trial detention is available be the object of plea bargaining?

- 3) Yes, in all cases
- 2) Yes, in the majority of cases
- 1) Yes, but only in some cases
- 0) No

Is pretrial detention only available for certain categories of criminals?

*(Please, be aware that it is not possible to change the answer to this question later)*

- 1) Yes
- 0) No

Is the plea-bargaining procedure available for these categories of criminals?

- 3) Yes, in all cases
- 2) Yes, in the majority of cases
- 1) Yes, but only in some cases
- 0) No

Who decides over the application of pre-trial detention?

*It is possible to tick more than one option.*

- 1) A Judge
- 2) The prosecutor
- 3) Others

Can you please specify what are those other authorities?

Is the duration of pretrial detention limited by law?

*(Please, be aware that it is not possible to change the answer to this question later)*

- 1) Yes

0) No

Can you please indicate this time limit?

### 19.1. Indication of other experts

If you did not know the answer to some questions, but you know someone who is willing and able to provide answers, please let us know.

### 19.2. General comments and corrections

You can correct previous answers or make any other comment down here.

## A.2. Variables used in the cluster analysis

Variable	Question answered	Type	Values	Coding
limit_sentence	Is PB excluded for crimes punished with sentences over a certain threshold?	dummy	0	No
			1	Yes
limit_crime	Is PB excluded for certain categories of crimes e.g. mafia, terrorism etc.?	dummy	0	No
			1	Yes
limit_criminal	Is PB excluded for certain categories of defendants e.g. recidivists, juveniles etc.?	dummy	0	No
			1	Yes
charge_pb	Is bargaining on charges admitted?	dummy	0	No
			1	Yes
fact_pb	Is bargaining on facts admitted?	dummy	0	No
			1	Yes
sent_size_pb	Is bargaining on sentence size admitted?	dummy	0	No
			1	Yes
sent_categ_pb	Is bargaining on sentence type admitted?	dummy	0	No
			1	Yes
min_sent_disc	Is a minimum sentence discount provided by law in case of PB?	dummy	0	No
			1	Yes
max_sent_disc	Is a maximum sentence discount provided by law in case of PB?	dummy	0	No
			1	Yes

jud_interv	Does the judge intervene during the bargaining phase?	continuous	0	No
			1	Yes
			0,5	Yes, but only in some cases
jud_review_aspects_sum	How many aspects are object of judicial review besides the standard ones (PB was voluntary, knowing, with understanding of consequences, within the limits established by law)? Possible considered aspects: Charges are appropriate; Sentence is appropriate; Trial would be preferable for reasons of public interest; Other aspects e.g. damages awarded are appropriate.	continuous	0-4	Number of additional aspects considered by the judge.
jud_decision_sum	How many decisions can the judge take, besides convicting the defendant and sentencing him according to the agreement or rejecting the agreement if conditions are not met? Possible decisions: Acquit the defendant; Ask the parties to negotiate a different agreement; Impose a sentence different from the one object of agreement; Modify some aspects of the agreement, with the consent of the parties.	continuous	0-4	Number of additional decisions that the judge can take.
lawyer_mand_pb	Is there a non-waivable right to a lawyer either at the beginning of the negotiations or for concluding a PB agreement?	continuous	0	No
			1	Yes
			0,5	Yes, but only in some cases
lawyer_mand_pb_binary	Is there a non-waivable right to a lawyer either at the beginning of the negotiations or for concluding a PB agreement?	dummy	0	No
			1	Yes
victim_veto	Do victims have the right to veto a PB agreement?	continuous	0	No
			1	Yes
			0,5	Yes, but only in some cases
victim_veto_binary	Do victims have the right to veto a PB agreement?	dummy	0	No
			1	Yes

### A.3. Summary statistics of categorical variables

#### A.3.1. Legal origins, complete sample (N = 174)

##### A.3.1.a. La Porta et al. (2008)

legal_orig	Freq.	Percent	Cum.
English	54	31.03	31.03
French	96	55.17	86.21
German	18	10.34	96.55
Scandinavian	5	2.87	99.43
Socialist	1	0.57	100.00
Total	174	100.00	

##### A.3.1.b. Alternative classification

legal_orig_alt	Freq.	Percent	Cum.
English	54	31.03	31.03
French	62	35.63	66.67
German	13	7.47	74.14
Scandinavian	5	2.87	77.01
Socialist	20	11.49	88.51
Spanish	20	11.49	100.00
Total	174	100.00	

#### A.3.2. Legal origins, jurisdictions for which pb\_rate is known (N = 52)

##### A.3.2.a. La Porta et al. (2008)

legal_orig	Freq.	Percent	Cum.
English	13	25.00	25.00
French	25	48.08	73.08
German	13	25.00	98.08
Scandinavian	1	1.92	100.00
Total	52	100.00	

##### A.3.2.b. Alternative classification

legal_orig_alt	Freq.	Percent	Cum.
English	13	25.00	25.00
French	7	13.46	38.46
German	9	17.31	55.77
Scandinavian	1	1.92	57.69
Socialist	8	15.38	73.08
Spanish	14	26.92	100.00
Total	52	100.00	

**A.3.3. Regulation level of the plea-bargaining procedure, complete sample (N = 100)**

Regulation_level	Freq.	Percent	Cum.
Min	49	48.51	48.51
Med	23	22.77	71.29
Max	29	28.71	100.00
Total	100	100.00	

**A.3.4. Regulation level of the plea-bargaining procedure, jurisdictions for which pb\_rate is known (N = 52)**

Regulation_level	Freq.	Percent	Cum.
Min	25	48.08	48.08
Med	15	28.85	76.92
Max	12	23.08	100.00
Total	52	100.00	

## Appendix B

### B.1. Probability of formalizing plea bargaining, logit model

#### B.1.1. Legal origins by La Porta et al. (2008)

**Table 6.** Logit: Marginal effects, LaPorta et al. (2008)

VARIABLES	(1) pb_legal	(2) pb_legal	(3) pb_legal	(4) pb_legal	(5) pb_legal
hom_rate_5	0.011** (0.019)	0.005 (0.314)	0.010* (0.062)	0.011** (0.036)	0.005 (0.278)
gdp_5	0.000 (0.865)	-0.000 (0.269)	-0.000 (0.887)	-0.000 (0.820)	-0.000 (0.614)
French	-0.211*** (0.009)				-0.155* (0.060)
German	0.162 (0.119)				0.115 (0.377)
Scandinavian	-0.434** (0.047)				-0.428** (0.038)
Socialist	-				-
muslim_maj		-0.386*** (0.000)			-0.332*** (0.000)
jury_trial			0.128 (0.151)		0.059 (0.473)
pen_ord_5				0.060 (0.564)	-0.034 (0.745)
N	169	170	170	170	169

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

#### B.1.2. Alternative legal origins

**Table 7.** Logit: Marginal effects, Alternative legal origins

VARIABLES	(1) pb_legal	(2) pb_legal	(3) pb_legal	(4) pb_legal	(5) pb_legal
hom_rate_5	0.004 (0.454)	0.005 (0.314)	0.010* (0.062)	0.011** (0.036)	-0.001 (0.842)
gdp_5	0.000 (0.525)	-0.000 (0.269)	-0.000 (0.887)	-0.000 (0.820)	-0.000 (0.744)
French	-0.369*** (0.000)				-0.332*** (0.000)
German	0.094 (0.485)				-0.062 (0.732)
Scandinavian	-0.500*** (0.007)				-0.520*** (0.001)
Socialist	0.020 (0.870)				0.027 (0.808)
Spanish	-				-

muslim_maj		-0.386*** (0.000)			-0.290*** (0.000)
jury_trial			0.128 (0.151)		0.056 (0.511)
pen_ord_5				0.060 (0.564)	0.098 (0.363)
N	153	170	170	170	153

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## B.2. Probability of formalizing plea bargaining, OLS model

### B.2.1. Legal origins by La Porta et al. (2008)

**Table 8.** OLS: Formalization of plea bargaining, LaPorta et al. (2008)

VARIABLES	(1) pb legal	(2) pb legal	(3) pb legal	(4) pb legal	(5) pb legal
hom_rate_5	0.010** (0.016)	0.004 (0.319)	0.008* (0.063)	0.009** (0.035)	0.005 (0.262)
gdp_5	0.000 (0.912)	-0.000 (0.232)	-0.000 (0.827)	-0.000 (0.777)	-0.000 (0.559)
French	-0.210** (0.011)				-0.154* (0.058)
German	0.175 (0.181)				0.122 (0.387)
Scandinavian	-0.434* (0.070)				-0.459** (0.046)
Socialist	-0.625 (0.195)				-0.735 (0.109)
muslim_maj		-0.431*** (0.000)			-0.393*** (0.000)
jury_trial			0.126 (0.159)		0.062 (0.467)
pen_ord_5				0.053 (0.613)	-0.037 (0.730)
N	170	170	170	170	170
R-squared	0.119	0.156	0.040	0.030	0.224

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### B.2.2. Alternative legal origins

**Table 9.** OLS: Formalization of plea bargaining, Alternative legal origins

VARIABLES	(1) pb legal	(2) pb legal	(3) pb legal	(4) pb legal	(5) pb legal
hom_rate_5	0.003 (0.518)	0.004 (0.319)	0.008* (0.063)	0.009** (0.035)	-0.001 (0.863)



gdp_5	0.000 (0.543)	-0.000 (0.232)	-0.000 (0.827)	-0.000 (0.777)	-0.000 (0.690)
French	-0.370*** (0.000)				-0.331*** (0.000)
German	0.089 (0.522)				-0.050 (0.760)
Scandinavian	-0.515** (0.022)				-0.568** (0.010)
Socialist	0.023 (0.844)				0.027 (0.813)
Spanish	0.300** (0.023)				0.264** (0.041)
muslim_maj		-0.431*** (0.000)			-0.312*** (0.000)
jury_trial			0.126 (0.159)		0.055 (0.496)
pen_ord_5				0.053 (0.613)	0.103 (0.358)
N	170	170	170	170	170
R-squared	0.234	0.156	0.040	0.030	0.307

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

### B.5. Plea bargaining rates, all factors: overlapping measure for penal orders and jury trials

Table 12. OLS: Legal and external factors - Overlapping measure

VARIABLES	(1) pb rate	(2) pb rate	(3) pb rate
hom_rate	2.245* (0.070)	-0.014 (0.991)	-0.011 (0.992)
hom_rate_sq	-0.044 (0.112)	-0.005 (0.834)	-0.003 (0.885)
gdp_2018	1.400** (0.011)	1.923*** (0.001)	1.846*** (0.001)
gdp_2018_sq	-0.011** (0.026)	-0.016*** (0.002)	-0.015*** (0.001)
French		-40.389*** (0.002)	-9.217 (0.542)
German		-53.047*** (0.000)	-21.775 (0.140)
Scandinavian		-83.580*** (0.001)	-41.768* (0.099)
Socialist		8.811 (0.453)	27.999** (0.023)
Spanish		25.138** (0.035)	45.545*** (0.000)
muslim		0.372 (0.416)	0.345 (0.402)
year_pb		-0.231	-0.185

Regulation level: Min	6.186 (0.505)	(0.239)	(0.325) 13.389 (0.102)
Regulation level: Max	-14.258 (0.233)		-12.014 (0.250)
pen_ord_overlap	-8.665** (0.022)		-0.929 (0.808)
jury_trial_overlap	5.780 (0.224)		8.053** (0.046)
N	52	52	52
R-squared	0.540	0.662	0.765

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## B.6. Plea bargaining rates, excluding South Africa

**Table 15.** OLS: Legal and external factors - Excluding South Africa

VARIABLES	(1) pb_rate	(2) pb_rate	(3) pb_rate
hom_rate	2.968** (0.016)	0.620 (0.625)	1.050 (0.365)
hom_rate_sq	-0.056** (0.035)	-0.014 (0.601)	-0.022 (0.338)
gdp_2018	1.458*** (0.003)	1.863*** (0.001)	1.874*** (0.000)
gdp_2018_sq	-0.012*** (0.009)	-0.015*** (0.002)	-0.001*** (0.002)
French		-41.603*** (0.002)	-16.489 (0.314)
German		-54.481*** (0.000)	-27.923* (0.096)
Scandinavian		-84.093*** (0.001)	-44.925* (0.090)
Socialist		3.991 (0.737)	20.739 (0.100)
Spanish		15.692 (0.226)	31.751** (0.020)
muslim		0.308 (0.494)	0.249 (0.540)
year_pb		-0.184 (0.345)	-0.105 (0.579)
Regulation level: Min	10.352 (0.233)		13.201 (0.103)
Regulation level: Max	-20.143* (0.071)		-19.230* (0.058)
pen_ord	-14.501 (0.157)		3.851 (0.744)
jury_trial	19.262** (0.028)		14.294* (0.068)

N	51	51	51
R-squared	0.607	0.673	0.770

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\*\*\* p<0.01, \*\* p<0.05, \* p<0.1