

Judicial Dissent under Externalities and Incomplete Information

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Received 31 January 2012; Accepted 30 September 2012

Abstract The issue of the stability and change of legal rules occupies a central place in the discussions of alternative ways of organizing justice and the provision of legal rules. There nonetheless remains a theoretical aspect that has never been raised in the literature on judicial decision making and legal change. Judges that are not bound by precedent and can change the law directly by overruling previous decisions have to make a particular decision about the direction the new precedent will take. We show that under incomplete information about judges' eagerness to choose according to their ideal points, there are two candidates for the particular legal rule that is to become the new precedent: (i) judge's private optimum; and (ii) some other legal rule that can differ from (i) and corresponds to the empirical and normative expectations of a large subset of judges within the judicial population. The individual judge that has decided not to stick to the precedent faces therefore a trade-off, he has to choose among alternative legal rules that yield alternative levels of public and private satisfaction of preferences.

Keywords Judicial decision-making, reputation, legal change, evolution of judge-made law

JEL classification D79, K00, K40

1. Introduction

Do judge-made legal rules tend to converge to an efficient equilibrium that is Pareto superior to the alternative outcomes? Or are there some mechanisms that can “trap” a legal system in an obsolete or inferior rule when there is a better alternative available? This question has been largely discussed in the Law and Economics literature since Posner's first edition of his seminal book, an *Economic Analysis of Law* (1973). Posner suggested that “when judges are the makers of the substantive law the rules of law will tend to be consistent with the dictates of efficiency” (Posner 1973, p. 569). In addition, Posner's argument entailed that a model of judicial behaviour in which judges are assumed to behave *as if* they were maximizing wealth in the economist's sense, provides the best “fit” with the actual pattern of the common law. His hypothesis, as stated by Rubin (2000), is that judges gain utility from efficient¹ decisions and are constraint so that other decision criteria are limited. That is, judges are insulated from outside pressure, they lack any redistributive power² and therefore can nothing but pursue ef-

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¹ By “efficient” it is meant the maximization of the social willingness-to-pay. For more details on efficiency in Law and Economics, see Zerbo (2001) and Kornhauser (2008).

² On why redistribution is not a goal pursued by judiciary, see Kaplow and Shavell (1994).

iciency in their decisions—not necessarily consciously. To put it in other words, for the early³ Posner, judges are either efficiency-seeking agents, or constrained to behave *as if* they were so, and “no other motivational assumption is plausible” (Cooter and Kornhauser 1980, p. 139).

Posner’s argument, however, has been found unpersuasive by the majority of scholars (Rubin 2000). First, as Rubin observed, Judge Posner’s explanation relies on “judicial tastes for efficiency and economists prefer not to explain behaviour on this basis” (Rubin 2000, p. 545). Second, Posner’s intuition is a consequence of his behavioural postulate. That is, judges are assumed to have no choice—i.e. they are programmed phenotypes. To put it in game theoretic terms, according to the early Posner, judges as actors of the game do not choose a strategy of lawmaking; the judge himself is assumed to be a strategy (see Basu 2000, pp. 93–101). And finally, it does not provide Law and Economics scholarship with an explanation of the mechanisms at work—i.e. the mechanisms that motivate (common law) judges to direct legal rules toward a particular stable equilibrium (see Cooter and Ulen 2003, pp. 389–444; Parisi and Fon 2009, pp. 71–125). Having focused so much on the *as if* hypothesis that takes goals as inputs and choices as outputs, the process that link the two has been neglected.

According to Whitman (2000), Miceli (2009,2010) and De Mot (2011), further literature investigating the evolution of legal rules can be classified into demand side and supply side approaches. The demand-side models explain the evolution of judge-made law in terms of a competitive process where plaintiffs and defendants compete with each other within the legal system to advance their own ends (see Priest 1977; Rubin 1977). Notwithstanding this literature’s contribution to our understanding of the evolution of judge-made law issue, these “invisible hand” explanations relegate judges to the background. That is, the behaviour of the judge is taken as exogenously determined. As Miceli and Cosgel (1994, p. 31) have correctly observed, “[t]his neglect of judicial motivation in models of the law is like explaining equilibrium in ordinary markets by modelling only the demand side and treating the supply side as exogenous”. Therefore, in order to have a complete picture of the economic structure of the legal process, we need to take an explicit account of judicial decision-making and the production of legal rules that emerge out of the individual interactions between judges and their audiences.

Supply-side explanations, on the other hand, have sought to re-introduce the role of judges into the lawmaking process by examining the nature of judicial preferences (see Miceli and Cosgel 1994; Posner 1994; Rasmusen 1994; Whitman 2000; Harnay and Marciano 2003; Gennaioli and Shleifer 2007; Baum 2008; Miceli 2009,2010; and De Mot 2011 for a survey of the relevant literature). The supply-side models are at the centre of this paper. That is, instead of treating judges as “good guys” who adopt “uncontentiously social norms” (Zerbe 2001), or decide by chance, the strategy adopted here is to model judges as self-interested agents⁴ that have personal preferences for certain outcomes but also care about the acceptance of their decisions within the judicial profession.⁵ The need for approval may come from different sources such as the

³ Later, in 1994, Posner argued that judges derive positive utility from good reputation, popularity and prestige.

⁴ For a public choice approach to judicial behaviour, see Wangenheim (1993) and (2000).

⁵ As stated in E. Ostrom’s presidential address to The American Political Science Association in 1997,

fear of ostracism, judges may feel some sort of benevolence for the group, recognize the group's expectations as reasonable or simply because they value future rewards for present restraint. It is not our scope here to investigate the sources of judicial motivations (for a literature review on judicial motivation, see Baum 2010). Regardless of motivation, once we recognize that the judge in the selection of alternative legal rules chooses for others—that is when the judge innovates he hopes his successors will follow his rule—it forces attention on the interdependences among the decision makers—judges; as contrasted with market choices where individuals choose independently of others (see Buchanan and Yoon 2012).

This work is based on an earlier idea proposed by Harnay and Marciano (2003), which we develop and extend to the decision making problem when judges need to choose new precedents. Our model examines, in effect, the judicial decision making problem and the nature of legal rules that emerge out of the individual interactions between judges situated at the same hierarchical level. Judges are not bound by precedent, there is not a cost per se of not following a previous decision, and they can change the law directly by overruling previous decisions. This is the most typical approach taken in the Law and Economics literature on judicial behaviour and because this article's purpose is to combine that literature with the literature on judicial reputation, it is the approach that will be taken here.

We model judicial interdependences in a two periods sequential game with private information about the “eagerness” of each judge to choose a new legal rule that is congruent with his private optimum, when the decision to depart from the precedent has already been taken. This is a crucial point since we do not analyze the decision of the judge to depart from precedent or alternatively stick to it. That has already been done by other scholars (see e.g. Miceli and Cosgel 1994; Rasmusen 1994; Harnay and Marciano 2003). We restrict our attention to the extent to which judges' decision on a case is congruent with their personal preferences for the final outcome. That is, we contend that the particular legal rule that will be chosen by the dissenting judge from his set of alternatives will obviously correspond to his private optimum, i.e. the legal rule that he privately favours. In effect, for judges' decisions to be congruent with their personal preferences one needs to assume common knowledge about each judge's private optimum and identical preferences for the legal change. Then if all judges would benefit from a given rule they would all consent to change from the previous decision to the new rule that acquires the status of precedent. However, when we abandon the assumption of complete information about each judge's private optimum, the equilibria that arise resemble “bandwagons” (for the general model, see Farrell and Saloner 1985; for an application to legal precedents, see Harnay and Marciano 2003). That is those judges that are very sensitive to judicial collective reputation that can suffer from radical legal changes, they will always choose the new legal rule so as to favour judicial profession's image and hence will only slightly change from the previous precedent. Those that only moderately favour the legal change they choose the legal rule that is their private optimum only when a large subset of judges adopted it

human choices are a combination of *self-interest* with *reciprocity, trust and reputational concerns*. The latter is of particular interest for our analysis of judicial behaviour. For more details on a behavioural approach to human action, see E. Ostrom (1998).

previously. And judges that strongly favour change, the particular decision they make is always congruent with their private optimum. When and if this happens, some who moderately favour the change in a manner conforming with their private optimum, will ultimately oppose it, although all judges would have to gain from following their most preferred option.

At the social level, this article points to the possible persistence of “excess inertia” in decentralized legal systems when there is incomplete information about judges’ privately preferred outcomes. And unlike Landes and Posner (1976) who emphasize judge’s fear of being overturned by a higher court, we argue that the mere existence of a judicial community and private information about the preferences of judges for legal change make it possible for excess inertia to emerge and persist over time.

The remainder of the paper is organized as follows. In Section 2, we investigate the previous theoretical contributions to the literature on the influence of conformity-based norms in the process of judicial law-making. Section 3 emphasizes the particular, collective, nature of choices among alternative legal rules and expands on the mechanisms that can “trap” a legal system in an obsolete or inferior rule when there is a better alternative available. In Section 4, we use a game theoretic model to show how judges take into account their peers’ normative and empirical expectations, thereby not “obviously” choosing according to what their private preferences are. Section 5 concludes and summarizes our main theoretical findings.

2. Literature review

In their article, *Reputation and judicial decision-making*, Miceli and Cosgel (1994) propose that judicial incentives are best understood as a function of constraints that a particular legal system puts on their judges and the interdependences among judges that act as an additional factor influencing judges’ behaviour. Judges are not only concerned with the satisfaction of their own preferences but take also into account the reputational effects of their decisions. They thus analyze how additional constraints, such as the existence of a judicial community and precedents, seriously affect the incentives within which judges work. More precisely, Miceli and Cosgel show that individual reputation can both restrain judicial discretion, but also inspire it if a decision is expected to enhance judge’s individual authority. The article’s main focus is, however, on the reasons for a judge to follow a precedent or to deviate from it and ignores the nature of the choice among the available legal alternatives when the judge decides to deviate from a previous decision. They assume, in effect, judges who depart from precedent to obviously choose a new rule that is equal to their private optimum. In this context, the probability that the next period judge (for simplicity they assume that only the next judge’s reaction matters for the reputation of the first period judge) will coordinate or not with the first period judge does not depend on the particular legal rule the latter sets as the new precedent.

The main argument in Miceli and Cosgel (1994) is further developed into a more general theory of human behaviour in Miceli and Minkler (1997). The latter model examines the relationship between social institutions and individual propensity to co-

operate. According to the authors, human decisions is a compromise between internal (private) preferences and external pressure (public preferences), via social norms.⁶ This distinction is of particular value for a theory of collective action in general and judicial decision making in particular since it forces attention on the interdependences among decision makers and hence on the distribution of benefits and costs among others in the sharing community—that is within the judicial profession.

Miceli (2009,2010), however in a recent series of articles on legal evolution, argues that the direction of legal change is determined by the interaction between selective litigation and judicial bias, thus leaving the social norms and reputation argument to the background.

Another important reference is Rasmusen's (1994) *Judicial Legitimacy as a Repeated Game* which analyzes judges motivated by the desire for influence. The author argues that under certain conditions—if judges do not dislike too much following precedent, if they do not discount the future too much and if they enjoy future influence enough—the judge shows restraint in most areas of law in the hopes that where he does innovate, the innovation will be permanent (Rasmusen 1994). Rasmusen cites the influent Judge Easterbrook who argues that “each judge may find it advantageous to follow rules announced by his predecessors, so that successors will follow his rules in turn.” (Easterbrook 1982, p. 817) Furthermore, Rasmusen's model allows for the possibility of individual variation in the eagerness of each judge to incur present costs from following precedents in the hope of future benefits from putting permanently his own mark on the law. His analysis is nonetheless exclusively focused on judicial restraint in deviating from precedent and do not deal with the trade-off among alternative legal rules after the judge decides to dissent.

Finally, Harnay and Marciano (2003) have greatly contributed to the study of the nature of judicial preferences. Following the literature on social norms (and in particular Kahan's [2000] paper on the “sticky norms” problem), they claim “that judicial behaviours cannot be fully understood as resulting from a strictly individual calculus, based upon personal tastes about the case at hand, but the interdependence between judges in their decision-making process and conformity with the profession also have to be taken into account” (Harnay and Marciano 2003, p. 406). Hence, besides personal preferences, the decision of rational judges is also influenced by the expected response from the judicial community. Judge's individual decision is, therefore, put into its social-institutional context.⁷ Nevertheless, as the previously mentioned scholars, Harnay and Marciano have developed a model for the analysis of legal precedent stickiness and did not examine the decision problem when judges need to select a new precedent among alternative legal rules. Their work merits, however, a particular at-

⁶ It is worth-noting that their argument is based on North (1990). On another point, it is crucial here to distinguish between two kinds of social constraints that could motivate human and therefore judges' behaviour. Unlike Miceli and Minkler (1997) who take others' influence as *internalized beliefs*, in this paper the attitude of judge's peers is considered as choice-influencing cost (Buchanan 1969), or to put it in Greif's (2006) terms as *behavioural beliefs* (in contrast to *structural beliefs*). That is, the “social interpretation” of one's decision can affect the behaviour of the decision maker without changing his internal preferences. It allows us to emphasize the conditional nature of judges' preferences and beliefs (see also Bicchieri 2006).

⁷ Although insulated from outside pressure, judges are not completely autonomous since how other judges are expected to behave and react to one's choice matters in the latter's individual decision-making process.

tention here for two major reasons. First, they emphasize the particular nature of the market for legal rules, “characterised by adoption externalities”. This is congruent with Buchanan’s argument (2011) about the nature of the market for rules, where no single entrepreneur believes it is in his self-interest to incur individual costs and share the benefits. Second, in order to emphasize the stickiness of precedents in decentralized legal systems, Harnay and Marciano apply the game theoretic model of coordination under incomplete information developed by Farrell and Saloner (1985). Given its emphasis on the adoption externalities associated with the choice of legal rules, this is the model that will be applied here to the analysis of judicial decision making problem after the judge decides to depart from the precedent.

We thus intend to supplement the existing literature on judicial behaviour by addressing the decision problem judges face when they depart from precedent and need to choose among alternative legal rules that yield alternative levels of public and private satisfaction of preferences. We show that when along with personal preferences for the legal change, judges also care about the acceptance of their decisions within the judicial profession, judge-made laws are likely to be locked-in what is publicly favoured within judiciary. The individual decision made by the judge is not necessarily consistent with his private optimum. As long as there is specific human capital investment in the production of legal rules, the total benefits derived from it will depend, in part, on the number of judges that will adopt that rule in the future.⁸

3. The trade-off in law-making

As noted by Miceli and Cosgel (1994, p. 40), if a judge “chooses to depart from the precedent, his utility depends on the particular decision he makes”. At the same time, it is generally assumed that when a judge can and has decided to overrule a previous decision his attitude toward the direction the new precedent will take depends solely on judge’s personal preferences that define his private optimum (Miceli and Cosgel 1994). As noted by Harnay and Marciano (2003), judge’s personal or private preferences are determined by his political, ideological and legal views. Judges are thus characterized by different private preferences for a case and have divergent opinions with regard to the direction toward which the new legal rule should tend (Miceli 2010; Gennaioli and Shleifer 2007). Notwithstanding the effect of judge’s personal identity on legal outcomes, this bias in the evolution of judge-made law tends to disappear when one aggregates judicial preferences and decisions.

However, within judiciary group behaviour, in many cases, dominates individualization. And, according to Bicchieri and Muldoon (2011), “group behaviour as opposed to individual behaviour is characterized, by distinctive features such as perceived similarity between group members, cohesiveness, the tendency to cooperate to achieve

⁸ Garoupa and Ginsburg (2010) distinguish between collective and individual reputation. We focus here only on one type of norm within the judiciary that is conformity with the judicial profession’s collectively preferred outcome—i.e. do not undermine judiciary’s collective legitimacy. However, conformist members deprive themselves from the benefits of pursuing their individual reputation within the judicial profession. Adding this feature would imply a different model that we will develop in another article.

common goals, shared attitudes and beliefs and conformity to group norms.”⁹ Within this perspective, an individual decision made by a judge about the direction the new precedent will take will reflect more than simply judge’s personal preferences or his desire to make the right decision.

In this section we examine the trade-off a judge faces when he has to choose among alternative legal rules that yield alternative levels of public and private satisfaction of preferences. Indeed, in many cases the judge faces a trade-off between advancing his own preferences (following his private optimum) or behaving in conformity with the prevailing public¹⁰ preferences within the judicial profession, i.e. favouring consensus within the judicial community. The preference for a given rule is in this sense conditional upon how the judicial profession expects an individual judge to choose given its concern for not undermining judiciary’s collective legitimacy. As Garoupa and Ginsburg (2010) noted, judiciary as an organization cares about its collective reputation. To be more precise, the stock of collective reputation determines the ability of the judiciary to compete for Governmental resources, and the ability of judges to influence social interactions since judicial legitimacy greatly affects the degree of compliance with legal rules (Drobak 2012; Levi et al. 2012). In this sense, “concurring opinions weaken the force of the [judiciary]” (Garoupa and Ginsburg 2010). Conformity appears to be an important feature of judicial behaviour. Judicial decisions need to be considered as consistent and legitimate in order to be abide by.

An illustrative example is the American judicial system where judges that are not bound by precedent (e.g. a federal court judge that is not bound to follow a previous decision of another federal court judge) can differentiate themselves from other judges. They may gain utility from following their own political, ideological or legal views that is from satisfying their private preferences. Landes and Posner (1976), for instance, argue that judges derive utility from bestowing their own ideology to the law through the precedents they create. The individual judge, therefore gains also utility from knowing that his fellow judges approve and perpetuate a decision based on his private preferences. That would moreover mean that the judge can structure the society according to his personal tastes.

Excessive differentiation can however undermine the collective reputation of judiciary. Therefore, although an individual judge can gain utility from differentiating himself from his fellow judges, the fear of ostracism from other judges¹¹—but also from other members of the audience¹²—can prevent him from going for his private optimum. It is then clear that when judiciary as a group benefit from only marginal legal changes and its legitimacy may greatly suffer from radical interventions, in a

⁹ There is no reference to page number since the entry “Social Norms” by Bicchieri and Muldoon (2011) was accessed online through *The Stanford Encyclopedia of Philosophy*.

¹⁰ By public preferences we mean choices an individual agent reveals to others, i.e. in public. For more details on private versus public preferences, see Kuran (1990) and Basu (2000, pp. 65–101). For an application to ethnic norms, see Kuran (1998), and to risk regulation see Sunstein and Kuran (1999).

¹¹ Besides the fear of ostracism, that is potential punishment, there might be other factors influencing judge’s decision. The judge may feel some sort of benevolence for the group, or recognize others’ normative expectations as reasonable.

¹² For instance, legal scholars and law students may criticize the particular decision made by the judge, thereby weakening the probability that he will be followed by his peers.

majority of cases it will be in judge's self-interest to follow the crowd and ignore his personal preferences and private signals. The existing literature on preference falsification (Kuran 1990) and informational cascades points out to "herding" behaviour in social, political and market interactions (Bikhchandani et al. 1998). Judicial attitudes and behaviour can also be understood as a product of adaptation specifically because dissent is costly and judges may have an incentive to sublimate their original preferences for a meta-preference of conformity (Klick and Parisi 2007).

Within this theoretical perspective, the claim made by Miceli and Cosgel (1994, p. 40) that "when judge t departs from precedent, he will always choose his private optimum" does not represent the genuine choice context an individual judge faces.

In fact, what allows Miceli and Cosgel (1994) to argue that no other legal rule can enter judge's choice spectrum than his private optimum, is their explicit assumption that the probability the $t + 1$ judge will defect or cooperate with t 's decision does not depend on what alternative is chosen when the judge departs from the precedent. However, the very existence of publicly available written and signed opinions by judges contradicts this assumption. Indeed, there are no clear explanations for the practice of written opinions available to any interested party, other than the need for justification of one's decision to deviate from or conform with the judiciary norm of precedent and create a common practice that reduces legal uncertainty. One could argue that the information contained in judge's written opinions has to be made public to inform for instance higher courts, litigants and lawyers, that is the present and future parties involved in a dispute, about the decision made by the individual judge. There is usually a requirement—by law or even the constitution—that decisions are motivated and made public. The motivation requirement is to prevent arbitrariness and to allow parties to appeal in a justified manner. This is the standard legal-scholarship view. However, in this case judges could simply provide the interested parties with the relevant information about their decision without making it public. And make public only the implied legal rule for the benefit of future litigants.

As noted by Bicchieri (2006), "If I recognize your expectations as reasonable, I have a reason to fulfil them". If the judge does something different from the normative expectations of judiciary as an organization, then he needs to justify his decision. All in all, the justification—that is the written opinion—by the judge has a very precise purpose, namely to reduce the individual risk from legal change. To put it in other words, judges write publicly available opinions because they take into account the expected reaction of the judicial community to the particular decision they make about the legal change.

4. The model

Miceli and Cosgel's (1994) assertion about judges choosing strictly according to their private optima when departing from precedent relies heavily on the assumption of identical preferences among judges for deciding according to their private optima and complete information about their respective preferences/eagerness to switch to one's ideal point. In reality, judges differ in their eagerness to risk the legal change that satisfies

their preferences and a judge will generally be uncertain whether he would be followed by his peers if he switches to a new precedent that is congruent with his private optimum. At the same time, as noted in the literature on judicial motivations, the role of reputation, prestige and popularity—that is setting precedents that are actually followed by one’s peers—seems to enter judge’s utility function and is moreover decisive in the process of decision making.

In this section we apply the simple non cooperative game theoretic model, developed by Farrell and Saloner (1985), of two players, characterized by a certain personal preference for deciding according to their private optimum, choosing under incomplete information about each other’s payoff functions. The model assumes a legal system of judge-made law with two unitary courts, each court consisting of a single judge. There are n periods to the game and since one judge decides at one period, the number of periods is equal to the number of judges playing the game. The first period judge decides whether to choose a new legal rule that completely satisfies his private preferences or set the new precedent more in line with what is publicly favoured within judiciary; whereas the second period judge chooses to coordinate or not with the first mover’s choice. Furthermore, following Harnay and Marciano’s article on judicial interdependences, we introduce a categorization of judges. It merely indicates that the eagerness to respect the norm of conformity with judicial profession’s collective preferences varies across judges. The decision maker’s privately preferred outcome is denoted X_t^* and the outcome other judges from the judicial profession expect (empirical expectations) and/or prefer (normative expectations) the dissident judge to choose is denoted P_t . Hence, the first period judge can strategically choose the direction of the given legal rule—denoted X_t —so as to increase the chances that the next judge¹³ will approve and adopt X_t . At the same time, the second period judge’s decision is heavily influenced by the first mover’s choice of legal rule.¹⁴

The expected utility from choosing X_t^* depends therefore, for the first mover, on the expected reaction of the next period judge. The latter’s decision is in turn influenced by the first mover’s choice. The expected utility from a legal rule is also affected by judge’s relative dissatisfaction with the norm of conformity with the judicial profession and the eagerness to push his own agenda. Some judges may feel more respect for the norm than other judges do. In reality the American judiciary is populated by conservative, liberal, radical and some other types of judges. Hence, the eagerness to respect the norm of conformity with judicial profession’s collective preferences varies across judges. Consequently, as Harnay and Marciano (2003, p. 410) have emphasized, “several categories of judges can be distinguished within the judicial population”. For simplicity, we distinguish between three types of judges. A first category of judges—the innovators—have a high preference for legal change. One could think of Ellickson’s (2001) self-motivated agents who have more technical information about the effects of alternative legal rules and more knowledge about the economic needs of society. Hence, the dissatisfaction with the norm will be higher for this group of judges

¹³ Since we follow the same assumptions and abstractions as in Miceli and Cosgel (1994), we also assume that “judge t cares only what judge $t + 1$ does” (Miceli and Cosgel 1994, p. 39).

¹⁴ We do not analyze, however, where P_t comes from and the conditions under which it may shift.

than for the other members of judiciary (when there is a distance between P_t and X_t^*). The other end of the spectrum is populated by judges who in the quasi-totality of the cases will choose the professionally preferred outcome and will be indifferent whether it serves society's goals or not. They either have much to gain from collective reputation, or greatly fear the negative reactions and the eventual non monetary sanctions from their fellow judges (they do not want to be ignored by the others). And finally, somewhere in between, there are judges willing to incur some costs from weakening collective reputation to support a decision that greatly deviates from judiciary's empirical and normative expectations only when a sufficiently large number of judges have previously adopted the decision produced by the "dissenter" judge.

An important feature of non cooperative strategic interactions is its bandwagon quality. When reputation, prestige and most important, acceptance within the judicial profession are important considerations for a judge deciding about the extent of the dissent, an early mover judge can influence the later mover's decision. We further analyze the case when the first mover can choose between X_t^* and P_t . After the first move of the first period judge, the second judge can coordinate or not.

4.1 The assumptions

Assumption 1. Let θ denote judge's private preference for legal change X_t^* , which represents the shift from the empirical and normative expectations of judge t 's audience (i.e. judicial profession) to t 's private optimum. Each judge is characterized by his personal θ . All judicial types θ are a priori equally probable, and distributed uniformly on the interval $[0,1]$. Judges with a higher level of θ have a stronger preference for legal change X_t^* than judges with a lower level of θ .

Assumption 2. Besides his private preference for X_t^* , the judge takes also into account the expected response from his fellow judges. Hence, $U_\theta(X_t, k)$ illustrates the utility a judge characterized by θ derives from deciding X_t . $U_\theta(X_t, k)$ is assumed to be continuous and strictly increasing in θ , which means that judges with higher θ are more likely to go for X_t^* , both unilaterally and by following the dissenter judge. Accordingly, X_t can either represent the legal rule P_t closer on the spectrum to the normative expectations of the judiciary (that favours consensus within judiciary), or the privately preferred outcome X_t^* . And k is the response of the next period judge to the first mover's choice. The former can cooperate or defect. When $k = 1$, the judge is not followed (non-coordination) and when $k = 2$, the judge is followed (coordination). Therefore, $U_\theta(X_t^*, 1)$ represents the utility a judge characterized by a given θ gains from deciding in accordance with his private preferences when other judges do not coordinate; $U_\theta(X_t, 2)$ is the utility for the first mover judge when the second period judge coordinates; finally, $U_\theta(P_t, 2)$ is normalized to zero since this is considered to be the status quo option.

Assumption 3. $U_\theta(X_t, 2) > U_\theta(X_t, 1)$ indicates that the market for legal rules is characterized by the presence of adoption externalities. The value for the judge t of X_t is a function of k . If a judge characterized by a given level of θ prefers to follow other judges in X_t^* , then any other judge with a higher level of θ will do the same.

4.2 The strategies

Within the two periods game, each judge can set the new precedent strictly in accordance with his preferences in the first or second period, or alternatively decide according to the consensus norm within the judicial profession. A strategy for the first mover judge can be thus described as $\theta_1 : [0, 1] \rightarrow \{X_1^*, P_1\}$; and for the second period judge, his decision is conditioned on his own type and the first mover's decision: $\theta_{t+1} : [0, 1] \times \{X_t^*, P_t\} \rightarrow \{X_t^*, P_t\}$.

More specifically, following Harnay and Marciano's analysis of legal precedent, we analyze the following four strategies:

- S_1 : When the judge always sets the new precedent according to his personal preferences, he is said to adopt what Harnay and Marciano call an "innovative strategy".
- S_2 : Judges can always—in the two periods—choose to stick to what is publicly favoured within the judicial profession (P_t) thereby adopting a conservative strategy.
- S_3 : In the first period stick to what is publicly favoured within the judicial profession and coordinate on X_t^* only when the first period judge started the bandwagon rolling – denoted as the "bandwagon strategy".
- S_4 : Wait for the second period and then put one's own mark on the law—that is the second mover chooses a legal rule that differs both from X_t^* and P_t .

Since the choice of one of these strategies depends on the level of judge's θ , we can assume a pair of θ , such as (θ^+, θ^-) , with $\theta^+ > \theta^-$. Then judges characterized by $\theta \geq \theta^+$ always choose a new precedent that is congruent with their personal preferences. If $\theta^+ > \theta \geq \theta^-$, the judge does not decide according to his preferences in the first period and chooses to coordinate on X_t^* only if the other judge started the bandwagon rolling. And if $\theta < \theta^-$ then the judge never deviates from the conformity based norm within the judicial profession.

We can therefore say that $U_\theta(P_t, 1)$ and $U_\theta(X_t^*, 2)$ define θ^- whereas $U_\theta(X_t^*, 1)$ and $U_\theta(P_t, 2)$ define θ^+ . Judges characterized by θ lower than θ^- will always prefer to stick to the normative expectations present within the judiciary, even when the first period judge switches to X_t^* . But judges characterized by θ higher than θ^+ will always choose S_1 from the first period.

Let us now define the payoffs associated with each of the aforementioned strategies. For the S_1 strategy, the innovator always switches to a new legal rule that is congruent with his ideal point, X_t^* . The judge thus derives $U_\theta(X_t^*, 1)$ with the probability θ^- that he meets a conservative judge, and $U_\theta(X_t^*, 2)$ with the probability of $(1 - \theta^-)$, that he will be followed in X_t^* . Hence:

$$EU_\theta(S_1) = \theta^- U_\theta(X_t^*, 1) + (1 - \theta^-) U_\theta(X_t^*, 2)$$

Let $EU_\theta(S_2)$ be the expected utility from the conservative strategy S_2 which consists in always conforming to the judicial profession's preferred outcome that is favour

consensus within the judiciary, even if the “opponent” switched at time 1. We can thus write:

$$EU_{\theta}(S_2) = (1 - \theta^+)U_{\theta}(P_t, 1) + \theta^+U_{\theta}(P_t, 2),$$

where $(1 - \theta^+)$ is the probability that a judge committed to a conservative strategy meets an opponent that is at the opposite side of judicial types’ spectrum and is thus committed to the innovative strategy. In this case the decision maker, following the S_2 strategy, gains $U_{\theta}(P_t, 1)$ and thereby deprives himself of adoption externalities. And with the probability of θ^+ the judge enjoys both, adoption externalities and satisfaction from his taste for conformity. Since $U_{\theta}(P_t, 2)$ corresponds to the status quo that has been normalized to zero, we can write:

$$EU_{\theta}(S_2) = (1 - \theta^+)U_{\theta}(P_t, 1)$$

The bandwagon strategy consists in sticking to what is publicly favoured within the judicial profession, that is P_t , and coordinate on X_t^* only if and when the first period judge started the bandwagon rolling. The second period judge’s decision is therefore heavily influenced by the first mover’s choice of legal rule. If with the probability θ^+ the first period judge is committed to conformism (through his type and since there is only incomplete information about judges types, meeting a certain type is probabilistic), then the new precedent will correspond to P_t and the decision maker derives a utility of $U_{\theta}(P_t, 2)$. Thus the payoffs from the bandwagon strategy S_3 are:

$$EU_{\theta}(S_3) = \theta^+U_{\theta}(P_t, 2) + (1 - \theta^+)U_{\theta}(X_t^*, 2) = (1 - \theta^+)U_{\theta}(X_t^*, 2)$$

Finally, the S_4 strategy is dominated by the innovative strategy, S_1 . An innovative judge will always choose to switch from the first period to a new legal rule that respects his personal preferences for by doing so he starts the bandwagon rolling and thus influences the second mover’s choice, when the latter’s level of θ is slightly higher than θ^- but lesser than θ^+ .

Analyzing the game backwards, starting from the second mover’s decision making problem, we can now see that the second period judge compares $EU_{\theta}(S_2)$ and $EU_{\theta}(S_3)$. We thus obtain the following equation:

$$EU_{\theta}(S_3) - EU_{\theta}(S_2) = (1 - \theta^+)(U_{\theta}(X_t^*, 2) - U_{\theta}(P_t, 1))$$

$$t + 1 \text{ adopts } \begin{cases} S_3 & \text{if } EU_{\theta}(S_3) - EU_{\theta}(S_2) > 0 \text{ which means } \theta > \theta^- \\ S_2 & \text{if } EU_{\theta}(S_3) - EU_{\theta}(S_2) < 0 \text{ which means } \theta < \theta^- \\ \text{indifferent between } S_2 \text{ and } S_3 & \text{if } \theta = \theta^- \end{cases}$$

The first moving judge compares the payoffs from choosing according to his personal preferences when departing from the precedent, that is $EU_{\theta}(S_1)$, to sticking to what is publicly favoured within the judicial profession and coordinate on X_t^* only when the first period judge started the bandwagon rolling, that is $EU_{\theta}(S_3)$. Thus, the judge t adopts S_1 when the level of θ which characterizes him is greater than θ^+ ; and S_3 when $\theta < \theta^+$. He is indifferent between S_1 and S_3 when $\theta = \theta^+$.

4.3 Interpretation of the results

The result of the game is a “bandwagon equilibrium” that is a perfect Bayesian Nash equilibrium where, those judges for whom $\theta < \theta^-$ always choose the new legal rule so as to please the other judges—an obvious candidate is P_i ; those for whom $\theta^- < \theta < \theta^+$ play the bandwagon strategy—they choose the legal rule that is their private optimum only when a large subset of judges within the judicial population adopted it previously; and finally, those for whom $\theta > \theta^+$, the particular decision they make will always be congruent with their private optimum $X_i = X_i^*$. Therefore, in the two periods, the bandwagon strategy (θ^+, θ^-) is the unique best response to the bandwagon strategy (θ^+, θ^-) .

From these results it follows that when two judges both characterized by a certain θ , such as $\theta^- < \theta < \theta^+$, play the game, none of them will find in his interest to choose a new legal rule that represents his genuine private optimum if this latter differs from the empirical and normative expectations of a large subset of judges within judiciary. It is worth noting that for some values of θ both judges may gain positive utility from going for their private optimum and could moreover benefit from adoption externalities. But, as it has been shown, the change in accordance to their private preferences will not occur because their θ is not sufficient so as one of them would risk the greater legal change. This is what Farrell and Saloner (1985) define as “symmetric inertia”, where there is no leader to start the bandwagon rolling. There is a second type of inertia. When two judges differ in their preferences, that is have different private optima, but the total benefits from switching to one’s private optimum would exceed total costs. This second effect is called “asymmetric inertia”. Hence, two types of excess inertia emerge out of the individual interactions among judges situated at the same hierarchical level in decentralized legal systems. The informal rule of favouring consensus within judiciary, beliefs about how others will behave and react to one’s choice and the existence of a judicial community conjointly generate a regularity and conformity in judicial behaviours that can be socially undesirable.

5. Concluding remarks

In this paper, we have examined judicial decision making when a judge having decided to depart from a precedent that is not binding, has to make a particular decision about the direction the new precedent will take. Most importantly, we have shown that there are two candidates for the latter: (i) judge’s private optimum X_i^* ; and (ii) some other legal rule that can differ from judge’s private optimum and be closer to the normative expectations of a large subset of judges within judiciary, P_i . Furthermore, our paper claims that decentralized legal systems are characterized by excessive inertia due to the presence of adoption externalities and incomplete information about the genuine value of judges’ eagerness to choose their most preferred outcome. Therefore, in many cases although the gains from going for their private optima may be positive, judges follow the crowd and the resulting legal change is less important than the one privately preferred. This takes us back to Posner’s (1973) claim that judge made-law evolves towards efficiency. In fact, we have shown that due to the specific nature of the mar-

ket for legal rules, the evolution of judge-made law is likely to be locked-in what is publicly favoured within the judiciary. The latter is very likely to differ from the maximization of the social willingness-to-pay criterion. Our results are congruent with a recent empirical investigation of the evolution of legal rules in a common law legal system which concluded in a lack of convergence toward an efficient stable equilibrium (see Niblett et al. 2010).

Acknowledgment This article was written as the thesis for the European Master in Law & Economics at the University of Hamburg. I gratefully acknowledge the supervision and guidance received from Prof. Stefan Voigt. I also thank Prof. Jef De Mot for his valuable comments, Bianca Mostacatto, Prof. John Nye and an anonymous referee for suggestions to improve the paper.

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