The Selection Hypothesis, Judicial Path-Dependence and the Battle for Precedents

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The paper builds upon existing models on the evolution of the common law. I consider a model of legal evolution in which judges have varying ideologies and propensities to extend the domain of legal remedies and causes of action and parties could have symmetric or asymmetric stakes. The model integrates the models of legal evolution with endogenous litigation cost and endogenous probability of prevailing. The paper advances the short-run evolutionary analysis and suggests the convergence of legal standards but with the constant “battle for precedents” around closely contested cases. In the long-run however we should search for other explanations, like the change of the judges’ ideology reflecting a change of societal preferences.

JEL: K0, K40, K13, K41

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Case decisions in a system of judge-made law fulfil two purposes: they resolve disputes between the litigants; and they lay down a precedent on which the future can rely. Thus, they look backward at disputes already existent and look forward to potential controversies not yet in being. As recently noted by Hylton (Hylton, 2006. pp. 1-2), one apparent difficulty in the theory of litigation is explaining how long-term trends in judicial decisions favouring one litigant, and biasing the legal standard could occur. Are they primarily a result of the litigants’ driven process of case selection, or are they largely driven by the judicial bias, or both? The causes for tendency of legal systems to grant ever-increasing levels of relief for plaintiff's claims are not that easy to determine (Fon, Parisi and Depoorter, 2005. p. 54). These questions have led to an extensive research in law and economics and the emergence of several competing theories that offer possible explanation. These theories can be divided into two general groups: demand-side theories and supply-side theories. The former theories focus on the behaviour of litigants, while the latter focus on the behaviour of judges (Whitman, 2000. pp. 775-76). None of these theories is a satisfactory explanation by itself, but all offer some insights about the evolution of the common law.

Drawing on the existing literature, the present paper offers a model of legal evolution. Similar to Fon and Parisi (2003) and Fon, Parisi and Depoorter (2005) I present a simple model in which the net expected value of the case, depends not only on the objective merits of the case and the ideological propensity of the judge but also on the asymmetry of stakes and litigation costs. While Fon, Parisi and Depoorter (2005) assume an exogenous probability of winning and a fixed litigation costs that are irrelevant to the judicial decision, following Hirshleifer and Osborne (2001), I model a trial as a contest, where two litigants choose their effort levels to “compete” for a precedent. I model judicial bias by introducing a suitable asymmetry into the litigation (contest) success function. The probability of winning is a function of their effort entries, judicial bias and the objective merit.

The remainder of this paper is organized as follows. Section 1 presents theoretical contributions of the process of legal change and compares the models that evaluate the process of selection of disputes. It also briefly discusses the model of precedent change. Section 2 presents a model that evaluates the impact of case selection and judicial bias on legal evolution. The model integrates the models of legal evolution with endogenous litigation cost and endogenous probability of prevailing. It also highlights the interaction among selection of disputes, judicial bias, and litigation stakes in the

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1 Several surveys examine a variety of models to study the creation of precedents and evolution of the common law. For the most recent survey see Rubin (2005). For general treatise see Cooter and Rubinfeld (1989) and Daughety (1999).
case and litigation costs. Finally, I examine the model’s implications on confirmation, contraction and extension in the scope of remedies and legal protection. Section 3 concludes with a few summary considerations and suggestions for future extensions.

1. Introduction

Evolutionary models, first proposed by Rubin (1977) and Priest (1977), have stressed the “demand-side” of the evolution of common law legal rules. These models treat the evolution of the judicially created law as a result of the litigants’ incentives. While Rubin’s model is based on the desire of parties to create precedent, Priest argues that parties litigate inefficient rules more because they produce more costly outcomes, and efficient rules survive and dominate this evolutionary process because they are litigated less. Nevertheless, these two articles have initiated subsequent voluminous literature on the efficiency of the common law. In their seminal work, Priest and Klein (1984) developed the divergent-expectations theory of selection according to which each party estimates case quality with certain error. Cases proceed to trial when the plaintiff is “more optimistic” than the defendant. Because this is likely to occur for cases with true quality near the decision standard, cases far above and below the decision standard generally settle. The selection of cases is two-sided, and it moves the plaintiff win rate at trial toward 50 percent. However, the results of the divergent-expectations models (the increase in the probability of trial) are commonly influenced by: (a) the extent of uncertainty i.e. with the increase in the parties’ errors in estimating case quality; (b) the stakes – the higher is the stake, the trial is more likely i.e. the smaller is the margin by which the plaintiff must be overoptimistic; (c) trial costs – the lower the trial costs (relative to settlement costs), the higher is the probability that the plaintiff is sufficiently overoptimistic (Waldfogel, 1998. pp. 454.). Finally, as Rubin (2006) pointed, these models are attempts to explain the evolution of the common law without resort to judicial preferences or utility functions (Rubin, 2006. p. 3.).

The second “demand” side approach is the asymmetric information theory developed by Bebchuk (1984). In the asymmetric information theory informed parties proceed to trial only when they expect to win. In a case, when one party (say defendant) is better informed i.e. knows the probability that

2 According to Rubin, the common law will evolve toward economic efficiency only when both parties have an ongoing interest in legal cases as precedent. When only one party has an ongoing interest, then legal precedent will tend to evolve in favour of the party that has a stake in future cases. However, the outcome may not be efficient.

she will win at trial, the other party (plaintiff) makes a settlement offer. That is accepted by informed party (defendant) as she face a relatively high expected liability. The defendants proceeding to trial are only those who correctly expect to win. The selection of cases for trial is one-sided, and the plaintiff win rate at trial is systematically below the fraction of plaintiff winners in the filed pool. 4

Several papers modelled the evolution of the common law in a direction that favours the interest groups that are able to devote resources to litigate (or to lobby) to have their preferred rules. A number of papers like Osborne (2002) or Rubin, Curan and Curan (2001), demonstrate that the common law is vulnerable to rent seeking pressures, and will evolve to favour powerful interest groups instead of evolving toward efficiency. In explaining common law evolutions, rent-seeking models use standard assumptions of public choice models. In rent-seeking models of the common law evolution, the common law is a subject to pressures from interest groups that are best able to organize and mobilize resources for litigation of unfavourable precedents. In somewhat similar vein, Fon and Parisi (2003) modelled plaintiffs choosing courts in which to file (forum-shopping). As a consequence judges who are in favour of expansive law will see more cases and have more influence than more conservative judges.

In contrast to the evolutionary models of litigation where judges passively respond to the litigants’ actions, many legal scholars describe trends in judicial decisions leading to precedents as the result of judicial bias. Unlike Posner’s narrow (common law efficiency) view, judges may care about a number of issues other than efficiency - judges may have preferences over the outcomes of disputes favouring plaintiffs, the government, accident victims, etc. In general, judicial-effort models relate judicial bias to the idea that judges may be influenced by bribes, political pressures or threats. Obviously, these models resort to judicial utility functions. The most recent model in this spirit is the one of Gennaioli and Schleifer (2006), in which deciding judges face opportunities to either overrule the precedent or distinguish it from the case before them, but may be both biased and averse to changing the law.

Finally, I will assess two recent contributions. Fon, Parisi and Depoorter (2005) note that: “Current theories of legal evolution are unable to explain these changes, let alone predict conditions that may induce changes to legal rules and to the scope of remedies.” (p. 43). They also fail to integrate several explanations that could lead to a general framework explaining different outcomes to litigation that

4 Both asymmetric information and divergent expectations theories have been extensively discussed by Waldfogel (1998) and Hylton (2006).
change the direction of legal evolution. Their model considers the effect of judicial path dependence in the case of asymmetric stake litigation and exogenous litigation costs. Litigation is exclusively driven by the attempt to maximize returns from the case, rather than by the desire for precedent. Plaintiffs are rational and decide to bring a case to court whenever the expected net return from the case is positive. Increases in asymmetry imply that cases can be rationally filed also when the probability of success is fairly small. As a consequence a large number of negative precedents may be produced. When the percentage of positive judgments falls below the level of support that the legal system in question considers necessary before widespread judicial recognition occurs, an initial wave of filing may be followed by a gradual implosion. Thus, judicial path dependence may lead to gradual consolidation or contraction of legal remedies. (Fon, Parisi and Depoorter, 2005. pp. 53-54)

In the second paper, Fon and Parisi (2003) set-up a model of legal evolution in which judges have varying ideologies and propensities to extend the domain of legal remedies and causes of action. However, parties have symmetric stakes and costs play no role. The combined presence of differences in judges’ ideology and plaintiff’s case selection (forum-shopping) generates a monotonic upward trend in the evolution of legal rules and remedies, leading to increasing levels of remedial protection and recognition of plaintiffs’ actions. “In explaining these recent trends, Priest has abandoned his demand-side model of common law evolution, instead turning to a supply-side model grounded in an intellectual and ideological revolution among common law judges. Priest also implicitly concludes that existing institutional constraints are inadequate to constrain judges from reading their personal ideological preferences into the law.”5 While offering new explanations, these papers still treat several sources of the legal evolution in isolation.

Finally, although this paper will not deal with the various doctrines of precedent (stare decisis and jurisprudence constante), it is useful to see how the literature approached the issue of the model of precedent.6 As noted by Gennaioli and Schleifer (2006), early evolutionary models of Rubin (1977) and Priest (1977) relied on the assumption of the presence of strong precedent (stare decisis). The doctrine of stare decisis (to adhere to past legal precedent on issues of law when deciding pending cases) represents a essential feature of common law. It is usually said that stare decisis by binding later courts through time, promotes certainty, consistency, and stability in the legal system reducing the

5 Citation needed

6 The doctrines of precedent of stare decisis and jurisprudence constante have been extensively discussed by Fon and Parisi (2004).
costs in the administration of justice. However, scarcely ever considered in the literature, but arguably an important issue is the one of the model of precedent change (Gennaioli and Schleifer, 2006. pp.3). Discarding and replacement of a prevailing legal rule by a new one represents the overruling model of precedent change and is the most radical outcome that can occur in the common law. The important assumption of both authors was that most often litigated precedents have the greatest probability of being overturned. Landes and Posner state that evolutionary models made a mistake by modelling precedent as an all or nothing issue, suggesting that the proper question was whether a precedent was stronger or weaker (Landes and Posner, 1979. pp.262-263). 

Thus, the other path is to focus on distinguishing precedents, i.e. the endorsement of the existing precedent that adds a new material dimension to adjudication. Because overruling precedent disturbs the stability of the common law, judges often employ the tactic of distinguishing precedent rather than overturning it. This is plausibly the central mechanism through which the common law evolves despite binding precedents. Unlike the early models, Fon and Parisi (2004) assume that no single decision binds and that in some cases the judge cannot use the current stock of precedents to decide his case. To illustrate this point I will borrow the example by Horty (2004):

“…consider a precedent case with facts A, B, and C, where A and B favour the plaintiff and C favours the defendant, and in which the precedent court held for the plaintiff, stating as its rule: “If facts A and B are present, then decide for the plaintiff.” Now imagine that a new case arises with facts A, B, and D. If we suppose, first, that D favours the defendant less strongly than C or else actually favours the plaintiff, the new case is then an a fortiori case for the plaintiff, a stronger case for the plaintiff than the precedent case itself. The new case is therefore controlled by the precedent, and so must be decided for the plaintiff—in accord with the rule of the precedent, as it happens. On the other hand, if we suppose that D favours the defendant more strongly than C, the new case is no longer a fortiori: it is now a weaker case for the plaintiff than the precedent case and is no longer controlled by the precedent. In such a situation, according to the result model, the court is free to decide the new case however it sees fit, regardless of the fact that the rule of the precedent, applied to the new case, would dictate a result for the plaintiff.” (Horty, 2004 p.xx)

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7 See Zywicki (2003) for a similar comment on Rubin (1977) model and on interesting discussion how the adoption of a system of strict *stare decisis* turned to be a necessary condition for the common law to become a vehicle for rent-seeking. Zywicki further argues the institutional environment during the common law’s development was less prone to rent-seeking pressures and that weak precedent and competition between judges reduced the returns to efforts toward establishing an advantageous precedent.

8 One may say that early evolutionary models were not completely convincing by claiming that the evolution of the judicially created law is a result of the litigants’ incentives. For example Rubin (1977) asserts that the party that is interested in creating a precedent will go again and again to court. “At some point, some court will find in favour of A; at this point the law has been changed and is now efficient.” (Rubin, 1977. pp.56-57.) This claim certainly does not take into account how litigation might strengthen the existing precedent.
2. Model

2.1 Basic assumptions

I define a dispute as any occasion in which a plaintiff asserts a claim for some injury against a defendant. Dispute will be regarded as litigated only if a verdict is rendered. In case plaintiff wins, the resolution of the dispute results in precedent that is favourable to the plaintiff, and unfavourable to the defendant. Litigants are risk neutral and are faced with a dispute where the probability of success is $p_i$ ($i = D$ - defendant and $P$ - plaintiff).\(^9\) Plaintiff has no information different from defendant i.e. no player has no player ever has an informational advantage. I adopt the static simultaneous-decision protocol and examine simultaneous choices in a one-shot game.\(^10\)

I assume plaintiff and defendant have identical cost functions (since the same lawyers and other inputs to litigation are available for hire by both sides). Each party is assumed responsible for its own legal costs regardless of the outcome (the American rule assumption). I assume that the litigants’ activity (effort) incurs unit marginal cost. The most important assumption of the model is that potential litigants form rational estimates of the likely decision based on the objective legal merits of the case according to existing stock of precedents, the legal expenditures and the observed judicial bias. The true merit of the case is not perfectly observable. Finally, plaintiffs are rational in deciding whether to pursue litigation. Thus, the litigation costs are endogenous and related to judicial finding.

The judge weighs the case and renders the verdict in favour of the plaintiff or the defendant. I assume that the judge chooses the winner partly on the basis of the arguments made by litigants, partly upon the relative merits of the case, and partly the decision depends upon a judge’s bias.

The probability the case ($p$) is determined by: (i) the legal efforts of the litigants (i.e. by the activity of lawyers), where $f_p$ and $f_d$ stand for plaintiff’s and defendant litigation efforts respectively (an index of real inputs such as attorney hours, pages of documentation, etc. – translated into dollars by a cost function); (ii) by the objective legal merits of the case – $\Pi$ according to existing stock of precedents –

\(^9\) Failure to settle might also be due to attitudes toward risk. While normal risk-aversion makes settlement more likely, conceivably one or the other contender might actually be characterized by risk-preference. We rule out this element postulating that both sides are risk-neutral.

\(^10\) As noted by Hirshleifer and Osborne (2001), despite an obvious asymmetry, most of the related analyses have employed the symmetrical Nash-Cournot protocol. The intention of the author is to incorporate analysis with the sequential nature of litigation where one party exerts efforts after the other.
S\(^{11}\), where \(0 \leq \Pi_i \leq 1\); and (iii) the ideological inclination of a court/judge – I. Following Hirshleifer and Osborne (2001) I use an asymmetric litigation success function, to be used for the simultaneous-move game. Precedent at stake makes litigation more akin to warfare. Equation shows the outcome of the legal battle as a success ratio:

\[
\frac{p_p}{p_D} = \frac{f_p \Pi_p \Pi_p}{f_D \Pi_D \Pi_D}
\]

Solving for the respective probabilities

\[
p_p = \frac{f_p \Pi_p \Pi_p}{f_p \Pi_p \Pi_p + f_D \Pi_D \Pi_D}
\quad \text{and} \quad
p_D = \frac{f_D \Pi_D \Pi_D}{f_p \Pi_p \Pi_p + f_D \Pi_D \Pi_D}
\]

As mentioned the parameter \(\Pi_i\) represents the weight the court assigns the objective legal merits of the case according to existing stock of precedents influencing the judicial finding. In the event that \(\Pi_p > \Pi_D\), plaintiff is more likely to prevail. I normalize \(\Pi_D\) to be one, and \(\Pi_p\) to be \(\Pi_p = \frac{\Pi_p}{\Pi_D} \in (0, \infty)\). \(\Pi\) measures the asymmetry in the weight of the precedents that support defendant’s and plaintiff’s case.

The second source of the asymmetry is the ratio of liberal to conservative judges. Parameter I is a representation index - the higher the index I, the more liberal jurisdiction (for I=0 the jurisdiction is extremely “conservative” or pro-defendant and for I=1 extremely “liberal” or pro-plaintiff). Again, I normalize \(I_D\) to be one, and \(I_P\) to be \(I_P = \frac{I_p}{I_D} \in (0, \infty)\), where I measures the asymmetry of the judicial ideological inclinations. The other way to look at \(\Pi\) is to treat it as a merit factor i.e. \(\Pi = \frac{\Pi_p}{1 - \Pi_p} \in (0, \infty)\). Similarly we can treat I as a bias factor \(I = \frac{I_p}{1 - I_p} \in (0, \infty)\) Thus, the respective probabilities now become:

\[
p_p = \frac{f_p \Pi}{f_p \Pi + f_D}
\quad \text{and} \quad
p_D = \frac{f_D \Pi}{f_p \Pi + f_D}
\]

2.2 Litigants’ net expected values

If a verdict is rendered in favour of the plaintiff, the defendant is required to pay the plaintiff the judicial award \(W\). In the case of a verdict in favour of defendant, the plaintiff pays an amount \(1 = W\) to the defendant. Following Rubin (1977) and Fon, Parisi and Depoorter (2005) this can be interpreted as the net present value of the loss from litigation in future similar cases or the immediate cost imposed on plaintiffs or any other liability imposed by the court in case of unsuccessful action by court sanctions or defendant’s counterclaims. However, in our model it is realistic to assume that

\(^{11}\) Following Fon and Parisi (2003), S represents the ruling variable - an index of the legal system’s willingness to recognize plaintiffs’ claims. Such ruling variable is a representation of the existing stock of precedents.
when the intention of the parties is some favourable precedent, the stakes are likely to differ systematically. I denote $\theta$ as a degree of asymmetry between the stakes of the two litigants, namely $\theta \in (0,1)$ and $L = \theta W$. I assume that there is a common knowledge about $\theta$. Higher efforts by a litigant increase her probability of prevailing at trial, but also increase costs. The net expected value to the plaintiff ($R^p$) and the defendant ($R^D$) are:

$$R^p = pW - (1 - p)\theta W - f_p - c_p$$
$$R^D = -pW + (1 - p)\theta W - f_d - c_d$$

For convenience and to avoid possible complications fixed costs will be ruled out ($c_p = c_D = 0$). If parties are expected value maximizers, both will choose the optimal litigation effort given the weight they attach and total stakes.

### 2.3 The interaction of effort, bias and merit

The product of the merit and the bias determine the degree of asymmetry. Note that, the probability that the plaintiff prevails at trial is positively related to the merit of the case according to the existing precedents. The greater the level of the objective legal merit of the case, the more the plaintiff can expect the court to find in his favour, given the ideological inclination of the judge, i.e. if $\Pi = 0$, $p_p = 0$, and if $\Pi \to \infty$, $p_p = 1$. Similarly, if $I = 0$, $p_p = 0$, and if $I \to \infty$, $p_p = 1$. Finally, plaintiff’s and defendant’s efforts have positive and diminishing marginal rate on the probability to win and satisfy the following first- and second-order conditions:

$$\frac{\partial p_p}{\partial f_p} = \frac{\Pi f_0}{(\Pi f_p + f_d)^2} > 0 \quad \text{and} \quad \frac{\partial^2 p_p}{\partial f_p^2} < 0$$
Figure 1 illustrates the effect of parametrically changing the judiciary bias, holding $\Pi$ fixed, on the plaintiff's success. Plaintiff's litigation effort ranges upward from 0 to 2 with defendant's effort held fixed at 0.5. Figure 1(a) pictures a relatively low level of plaintiff's merit and Figure 1(b) an equal merit ($\Pi = 1$). As expected, plaintiff effort has a positive influence upon his success, as revealed by the positive slopes of all the curves. Notice that for higher 1 there is a general upward shift of the whole set of curves: more liberal judges always raise plaintiff's prospect of success. Identical figures we would obtain if we allow $\Pi$ to vary while holding I fixed.

In Figure 2, the two panels show how plaintiff's marginal product varies as a function of her effort, showing the effect of parametrically changing the degree of merit and judicial bias and $\theta$.

![Figure 2: Plaintiff’s marginal product](image)

For a relatively low merit and conservative judge ($\Pi=0.8$ and $I=0.8$) the marginal product of fighting is low to begin with and thereafter declines slowly as effort increases. In contrast, for a relatively high merit and liberal judge, the marginal product is initially extremely high but falls off rapidly.

### 2.4 Optimization and equilibrium – Nash-Cournot solution

As stated, I use Nash-Cournot protocol as the most typical in the litigation literature.\(^{12}\) Litigant makes a best response to the opponent’s chosen level of litigation effort. The unique Nash equilibrium level of legal expenditure at trial is:

\(^{12}\) See Hirshleifer and Osborne (2001) for questioning the validity of this protocol. In literature it is common to compare between a Cournot-Nash simultaneous move contest and a Stackelberg leadership contest. The intention of the author is to incorporate and analyse Stackelberg protocol, as a protocol that is closer to the normal sequence of events, in the next revision of the paper.
Where \( W(1 + \theta) \) are the total stakes or \((W+L)\). Total spending at trial \( f_p + f_d \) never exceeds total stakes.

In equilibrium (at an interior solution) the respective litigation efforts \( f_p \) and \( f_d \) will always be equal, regardless of merits of the case or the judicial bias. The comparative-static effects of changes in the total stakes, fault and judicial bias are clear from the form of equation as the spending at trial is increasing in the total stakes and I illustrate this in Figure 3.

In Figure 3, panels show how plaintiff’s optimal effort varies as a function of judicial bias. In Figure 3(a), when holding the merit constant at \( \Pi = 1 \), the battle for precedents is toughest in front of unbiased judges as effort evidently peaks when \( I = 1 \). Upward shift of the whole set of curves is due to decrease in asymmetry (i.e. higher total stakes). Exactly the same picture would be obtained for parametrically changing the merit and holding judiciary bias constant at 1. In Figure 3(b), the whole set of curves is shifting due to parametric change of the merit. Intuitively, for lower merit, the plaintiff will invest more when facing conservative judge than facing liberal judge. The defendant exploits this fact and invests less as well. Similarly, when relative success is increasing (extremely liberal judge case) both parties will reduce their efforts, with total effort lower for high merit case.

Combining the expected profit functions with the equilibrium trial expenditure predictions produces the following plaintiff’s equilibrium expected payoff function:

\[
R_p = \left( \frac{\Pi}{1 + \Pi} \right)^2 W(1 + \theta) \cdot 0W
\]

\[
R_d = -\frac{1 + 2\Pi}{(1 + \Pi)^2} W(1 + \theta) + 0W
\]
This first-order condition generates a pair of reaction curves, whose intersection is the Nash-Cournot solution.

\[
 f_p = \begin{cases} 
 \frac{\sqrt{f_D \Pi W(1+\theta)}}{\Pi} \cdot f_D & f_D < \Pi W(1+\theta) \\
 0 & f_D > \Pi W(1+\theta) 
\end{cases}
\]

Figure 3 shows litigant’s reaction curves, that is, their optimal level of effort in response to any given effort on opponent’s part. In Figure 3(a) \( f_D \) at first rises in response to increasing plaintiff effort \( f_P \) but then eventually falls off, owing to diminishing returns. Figure 3(a) shows the effect of varying judicial bias. For a liberal judge (\( I=2 \)) and equal merit case, \( f_D \) peaks when the plaintiff’s \( f_P \) is still quite low – whereas for a conservative judge (\( I=0.6 \)) her peak occurs much later. Same figure we would obtain for setting \( I=1 \) and letting merit to vary. For a low merit case and the median judge, \( f_P \) peaks when \( f_P \) is still quite low – whereas for a high merit case (\( \Pi > 1 \)) her peak occurs much later.

![Figure 3: Reaction Curves for various values of I and \( \Pi \)](image-url)

However, a necessary condition that needs to be satisfied before a legal claim is filed is that expected judicial award is greater than the non-recoverable portion of litigation fees. That is to say, the expected net judicial award should be positive. If the expected net recovery falls below the litigation costs, the expected net recovery is negative and no threat of litigation can be credibly made. The participation constraint for the plaintiff requires that

\[
 R^P = (\frac{\Pi}{1+\Pi})^2 W(1+\theta) - \theta W > 0
\]

This condition may be reduced and the plaintiff files suit if and only if

\[
 \Pi \geq \frac{\sqrt{L}}{(\sqrt{W+L} - \sqrt{L})/L} = \frac{\sqrt{\theta}}{(\sqrt{1+\theta} - \sqrt{\theta})/\theta}
\]
The participation constraint for the defendant requires that

\[ R^D = \frac{1 + 2\Pi}{(1 + \Pi)^2} W(1 + \theta) + \theta W > -W \]

Thus, from this condition and for \( I \neq 0 \) the defendant will litigate for

\[ \Pi > 0 \]

From these conditions we may infer that there exists an interior Nash equilibrium for which both plaintiff and defendant prefer to litigate rather than choose a corner solution with zero litigation effort.\(^{13}\) Figure 5 utilizes plaintiff’s participation constraint and pictures the zero-expected return curves (for various values of \( \theta \)). In other words it shows how the “positive expected net return condition” may create a bias in the evolution of case law. For any given asymmetry, all points to the north-east of the zero-expected return curve correspond to cases with positive expected returns. Given the judicial bias and sufficient asymmetry a case may be rationally filed even when the objective legal merits of the case – \( \Pi \) according to existing stock of precedents is less than 1. The interaction of the asymmetric stakes and the judicial bias provides additional incentives for the plaintiff to litigate.

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\(^{13}\) For discussion see Farmer and Pecorino (1999).
appear in front of the court is to have a sufficient level of asymmetry (i.e. low \( \theta \)) or a sufficient positive judicial bias. In other cases, when policy views of judges can affect the outcome, plaintiffs that are rational will decide whether to file suit based on the likelihood of success in the specific court. Like in Fon and Parisi (2003) plaintiffs’ decisions could create a strong bias toward filing cases in pro-plaintiff jurisdictions. In turn, this means that “liberal” judges have a better chance to create new precedents, rather than conservative judges. Implicit forum-shopping in this model could lead (but not necessarily so) to adverse selection mechanism that shapes the entire process of precedent evolution and “generates a potential monotonic increase of remedial protection in the legal system” (Fon and Parisi (2003) p.429).

2.5 Confirmation, contraction and extension in the scope of remedies and legal protection

Under the Nash-Cournot protocol, in any interior equilibrium the litigation efforts will be equal regardless of the level of merit. As a consequence, it follows that win rates are \( p_v = \frac{\Pi}{\Pi + 1} \) and \( p_D = \frac{1}{\Pi + 1} \). It turns that the plaintiff’s win rate \( p_v > 0.5 \) is whenever \( \Pi > 1 \). For the sake of simplicity we will assume that in this region (at least on the average) plaintiff will lose. This will allow us to tell something more about confirmation, contraction and expansion in the scope of remedies and legal protection.

![Figure 6](image)

Figure 6: (a) Merit-Bias regions (b)

Figure 6 (a) pictures merit – judicial bias combinations and Figure 6(b) regions where \( \Pi > 1 \) and \( \Pi < 1 \), i.e where plaintiffs’ and defendants’ win rates respectively are higher than 0.5. It is interesting to note that in our model for \( \theta = 1/3 \), represents a zero expected return curve for which plaintiff has a 50 percent chance of winning.
In Figure 7, all points to the right of the zero-expected return curve correspond to cases with positive expected returns. If the probability of winning is greater than 1 ($\Pi > 1$) for the cases where critical threshold, that is objective legal merit of the case is greater than 1 there is consolidation of legal rules, represented by the northeast region.\footnote{In their recent book Hansford and Spriggs (2006) find that where the number is positive and large, the precedent retains greater vitality. This vitality in turn conditions the influence of ideological distance between the precedent and the current Court. Even where a substantial difference exists between the ideological predispositions of the interpreting Court and the existing precedent, a vital precedent is still more likely to be cited positively in support of a legal proposition. (Hansford and Spriggs, 2006. p.xx-xx).} All points to the left of the zero-expected-return curve correspond to cases with negative expected returns. Rational plaintiffs would not file suits in this region.

As stated, the increase in asymmetry imply that cases can be rationally filed also when the probability of success is fairly small ($\Pi < 1$). As a result a number of negative judgments may be produced that consolidate the stock of existing precedents from the left side. In general, this is the very same conclusion that was given by Fon, Parisi and Depoorter (2005):

“However, although privately rational, the filing of suits in low probability cases may have a negative impact on the likelihood of success for future similar cases. When past litigation generates a flow of negative precedents that outweighs the positive precedents, the percentage of positive precedents falls below the critical threshold $\pi = 1/2$, and the process of legal evolution generates a gradual contraction in the scope of remedies.” (p.49.)

In the northwest region, $\Pi > 1$ and positive expected net return lead to expansion of the current stock of precedents.

Finally, present model allows for one more possibility – the one of contraction of existing stock of precedents. This happens even when there is a strong case favouring plaintiff, but plaintiff files in front of the case falls in the range where ideological and policy views of the judge can influence the outcome of the case.

Here is where the line of reasoning deviates from the one in Fon and Parisi (2003)

“However, as the opportunity to file a case is controlled by the plaintiff\footnote{While this assumption has certain advantages, there are also important drawbacks. As noted by Rubin (2003), “in many circumstances (and particularly in business or contractual disputes) the parties would pick the forum ex ante, so that both would have an incentive to choose efficient courts. Thus, in this large class of disputes, there would be no pro-plaintiff bias as might exist when plaintiffs choose courts after a dispute has arisen.”}, a rational plaintiff would typically decide not to bring the case or to terminate any pending litigation. This takes away the opportunity for conservative judges to render a decision in marginal, leading to an adverse selection effect and tendency to move to left.” (p.xx)

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\footnotetext[14]{}
While the model may provide some weak support to scholars who have stressed a tendency toward efficiency in the common law, rather it seems that law does not evolve in a direction that strictly favours any party.\textsuperscript{16} One might describe this type of evolution as a random walk, in the sense that the law is equally likely to move in a direction favouring plaintiffs as it is to move in a direction favouring defendants. Still, consolidation effect works from both sides. From the left it punishes overoptimism due to asymmetric stakes. From the right, it works through a gradual consolidation of legal rules, as the past litigation that forms a stock of positive precedents (where $\Pi > 1$) increases. Whether and when the effects of expansion and contraction of existing will prevail is hard to tell, but the model allows for this possibility.

### 2.6 Uncertainty\textsuperscript{17}

I assumed that both parties have identical estimates of judges’ policy views and take such ideological components into account when evaluating expected returns. For obvious reasons, litigants are generally unable to perfectly observe the true value of the merit or the judicial bias. In a real life, a

\footnote{A litigant arguing for a relatively efficient rule will, on average, have more to gain from favourable decision than does her opponent (absent significant effects on third parties), since the efficient rule is potentially Pareto superior. Other things being equal her stakes will therefore be higher. (Katz, (1988) p.xx)}

\footnote{The next version of the paper will contain formal model that incorporates uncertainty.}

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Figure 7: Filing decision (for $\theta < 1/3$) and the impact on the stock of precedents
litigant’s estimate of the merit or the bias on which the decision is assumed to depend on will differ from the true values. Most likely, the uncertainty will be case-specific rather than litigant-specific as litigants may not be able to calculate exactly how the decision standard will be applied to the particular case. So far, I implicitly assumed that both parties formed identical estimates of true values with the understanding that there is likely to be error attending the estimate.

3. Conclusion

While it is usual to classify theories of legal evolution into two categories judicial-effort and evolutionary theories (Hylton, 2006), following Fon and Parisi (2003) and Parisi, Fon and Depoorter (2005) I present a model which combines effects of these two categories. Present article has mainly advanced the short-run evolutionary analysis and suggests the convergence of legal standards but with the constant “battle of precedents” around closely contested cases. In addition, only a very small literature if any, integrates the models of legal evolution with endogenous litigation cost and endogenous probability of prevailing.

Model’s extension to include asymmetric stakes provides us with rather interesting and intuitively appealing explanations. Under the judiciary bias, given the different views of litigants associated with the importance of the merit of the case relative to judiciary discretion, the short-run evolutionary push provided by new cases is not completely predictable. Unlike in Parisi, Fon and Depoorter (2005) I show that consolidation of remedies occurs from both sides, while keeping the main result that the dynamics and direction of the evolution occurs from both sides, while keeping the main result that the dynamics and direction of the evolution unknown.

It seems that the simplest way to explain how legal standards evolve using this model is to take into account that judges are to some extent reflect change in societal preferences. This quiet (r)evolution has caused judges to deviate from (or in some cases to tend to) sound economics in favour (instead) of using law as an instrument of social justice and insurance. Thus, once the number of “liberal” judges overweighs the number of “conservative” ones, incentives to litigate rise as well as a number of cases with the same verdict accumulates setting new legal standards.

The model could be easily extended to incorporate fixed costs, uncertainty about the decision standard or to examine the effects of the Stackelberg protocol. Above all, further extensions to this paper should consider major applications on legal disputes and evaluation of various outcomes in normative terms. Possible extensions of the model would allow us to examine whether the evolution of precedents leads to convergence, whether such convergence is to efficient legal rules, and what factors render legal change more efficient.
REFERENCES


