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SUMÁRIO

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Resumo: Este artigo tem por objetivo analisar a teoria da eficiência do common law, que propõe que o sistema jurídico de common law tende a produzir normas jurídicas mais eficientes que o sistema jurídico de civil law. Para investigar a existência, ou não, de relação necessária entre normas jurisprudenciais e a eficiência, desenvolveu-se um modelo de teoria dos jogos evolucionários para representar o processo de mudança das normas jurídicas de um sistema de common law puro. O modelo teórico mostra que, no equilíbrio, a proporção de normas eficientes é igual à proporção de juízes que nutrem preferência por normas que geram resultados eficientes. Desse modo, a eficiência das normas jurisprudenciais depende do viés judicial pela eficiência, e não do comportamento das partes. Como as preferências dos indivíduos são ditadas por suas ideias ou crenças, no longo prazo, o progresso do direito depende da capacidade da opinião pública de cultivar ideias benéficas.
Palavras-chave: *Common law*; eficiência; ideias; preferências.

Abstract: This article seeks to analyze the theory of efficiency in common law which proposes that the common law system tends to produce more efficient legal norms than the civil law system. To investigate whether there is a relationship between jurisprudential norms and efficiency, we have developed an evolutionary game theory model to represent the change process of legal norms in a pure common law system. The theoretical model shows that, in equilibrium, the proportion of efficient norms is equal to the proportion of judges who prefer norms that generate efficient results. Thus, the efficiency of legal norms depends on a judicial bias in favor of efficiency and not the behavior of the parties. Since individual preferences are determined by their ideas or beliefs, over the long term progress in law depends on the capacity of public opinion to cultivate beneficial ideas.
Keywords: Common law; efficiency; ideas; preferences.

Classificação JEL: K15; C73.

1. INTRODUCTION

The Latin aphorism *ubi societas, ibi jus* expresses the judicial wisdom of the Romans. In fact, individuals began to live in society when they perceived that mutual cooperation founded on the division of labor could facilitate the achievement of their goals. However, social cooperation depends on good institutions.

The main function of institutions in general is transmitting knowledge and structuring incentives (HAYEK, 1945; NORTH, 1990; O'DRISCOLL; RIZZO, 2015). Legal norms economize explicit knowledge to the extent that they govern individual choices in certain actions, saving great deliberate force in every case (HAYEK, 1973; FULLER, 1975; LANGLOIS, 1992), and function as prices which influence an individual's cost-benefit analysis (COOTER, 1984; KORNHAUSER, 1988; COYNE, 2017). When they are efficient, legal norms confer a necessary predictability of action and induce social cooperation.

The determining factors of the efficiency of a legal order, however, have still not been clarified sufficiently. A very influential theory in Law and Economics postulates that legal efficiency is derived from the production model of legal norms, so that norms created by courts tend to be more efficient than those created by legislatures. A consequence of this proposition is the theory of the efficiency of common law, or in other words, the idea that this judicial system is more apt to promote economic efficiency than the civil law system.

In the western world, law can be divided into two great traditions: common law, or Anglo-Saxon law; and civil law, or Roman-Germanic law. The main difference between these legal systems resides in the source of the production of legal norms. In the common law system, legal order is mainly made up of precedents created by the judicial branch based on concrete cases, theoretically based on the customs of the people. In the civil law system, legal order is mainly made up of written laws produced by legislative bodies. Written laws assume a secondary position in common law, while customs and jurisprudence exercise a supporting role in civil law. In addition, common law is based more on particular characteristics, and is

practiced and oriented by jurisprudence, while civil law is more systematic, codified and influenced by Roman law.

Do the differences between these legal systems really provide a convincing justification for the efficiency of their norms? If the effects produced by legal norms depend on their content rather than their origin, the confirmation of common law's theory of efficiency requires the demonstration of a necessary relationship between the content of legal norms and the production process. Given this, is it legitimate to expect that the production model of legal norms generates more than mere technical distinctions between the common law and civil law systems?

This study seeks to examine the theory of efficiency in common law and investigate whether there is a necessary relationship between the efficiency of legal norms and their production model. Legal norms are understood to consist of judicial rules and principles which maximize utility for all of the individuals in a society.

To accomplish this, we will present an economic model based on evolutionary game theory, whose conclusion indicates that the efficiency of legal norms in a common law system depends on the preference of judges for judicial efficiency, which we call a judicial bias in favor of efficiency. The model shows that, in an equilibrium, the proportion of efficient norms in a legal order is equal to the proportion of judges with a bias in favor of efficiency in the legal system. We believe that this work contributes to the study of factors which determine efficiency in legal norms.

This article is divided into five sections in addition to the introduction. The second section presents the theory of efficiency in common law, classifying theories as intentional when the efficiency of legal norms is explained by the deliberate desire of judges; and unintentional when the efficiency of law is explained by factors that are unrelated to the preferences of magistrates. The third section develops a theoretical model to explain the

change process for legal norms in a common law system. The fourth section will analyze the model's theoretical implications, and the final section will present our conclusions.

2. THE THEORY OF EFFICIENCY IN COMMON LAW

The principle of the invisible hand is considered to be one of the greatest intellectual discoveries in the history of economics (BUCHANAN, 1977; 2001; ARROW; HAHN, 1971). Smith's proposition (1977) was that in markets self-interest leads individuals to promote social well-being with greater efficiency than when they deliberately set out to do so. In the 20th century, Hayek (1960, 1973) developed this idea emphasizing that a social order can emerge from the decentralized actions of millions of spontaneously coordinated individuals.

The conceptual proximity of a spontaneous order with Darwinian natural selection (BARRY, 1982; CARREY, 1998) has contributed to the reception that the invisible hand has received in other domains of knowledge. In law, various evolutionary doctrines have sought to understand changes in legal norms over time (ELLIOT, 1985; HOVENKAMP, 1985). According to Hutchinson (2005), the evolutionary metaphor has always illuminated the efforts to explain the nature of common law, sometimes in a modest, oblique and implicit fashion, and at others in a broader, more daring and explicit manner.

A group of these explanatory models proposed by theoreticians in Law and Economics suggests that the evolution of law tends to be efficient when legal norms are produced through judicial processes. The association of normative changes with economic progress is not surprising, given that economic theory emphasizes the tendency for markets to reach an equilibrium. However, outside of the strict economic domain, this thesis needs to be evaluated carefully, given that evolution is understood just as historic changes and not normative advances (DAWKINS, 1996; HUTCHINSON, 2005).

There are two classes of theories which seek to elucidate the efficient evolutionary mechanism of legal norms in the common law system: intentional theories which explain legal

progress due to the motivations of judges; and unintentional theories which do not depend on the preferences or even rationality of judges to explain the evolution of legal norms.

2.1 INTENTIONAL THEORIES

Richard Posner was the first and main defender of the efficiency thesis in common law. He attributed the propensity for efficiency in legal norms to the preferences of magistrates. Before him, Ronald Coase suggested this possibility for similar reasons.

Coase (1960) demonstrated that the externality problem resides in transaction costs, because parties will always reach an agreement which will maximize the value of social production if there are no costs associated with bargaining. However, given that the supposition of zero transaction costs is quite unrealistic, the maximization of wealth in society generally depends on the format of legal order. Coase (1988; 1992) emphasizes the need to compare the effects of alternative institutional arrangements in order to attribute rights to those who can utilize them in the most productive manner.

Within this context, Coase (1966; 1970; 1974a) expressed distrust of legislators and regulators, affirming that they can be incompetent, corrupt and motivated by self-interest (COASE, 1974b), which is why he believed that rights should be trusted, whenever possible, to the market (COASE, 1962). On the other hand, Coase (1960) believed that courts could promote the allocation of rights with greater efficiency than legislators or regulators, because judges take economic aspects into account in disputed issues. As Bertrand (2015) summarized well, in Coase's view, a judge is closer to market prices than legislators.

Posner (1986) proposes that common law functions as a wealth maximization system, clarifying that wealth is not limited to goods with explicit prices (POSNER 1981). In this way, efficiency is understood as the maximization of the sum of the utility of all individuals in society. Posner's explanation (1986) is that judges prefer, at least indirectly, efficiency to the extent that in practice can be confused with many conceptions of justice sought by courts.

Posner (1993) also argues that judges just need to worry about efficiency in cases that are effectively new, because in subsequent litigation, they can follow jurisprudence to achieve efficient results.

To Posner (1986), legislative rights do not have the same tendency to be efficient because the electoral process creates incentives for congressmen to edit laws to favor special interest groups which strengthen their electoral prospects. In contrast, the guarantees and prohibitions of the law remove the rewards and punishments that would motivate judges to decide for their own benefit. To Posner (2008), legislation reflects legislators' preferences, while judges are also legislators, albeit disinterested ones.

Posner (1986) also ponders whether courts lack effective tools to promote the redistribution of wealth, with it being necessary to increase the well-being of society to favor a specific group. It is true that judges cannot redistribute wealth, but this purpose can be realized in an indirect manner if certain types of litigants (renters and employees, for example) are constantly favored, simply because they belong to a given group (FRIEDMAN, 2000).

This goal does not rule out a judicial preference for efficiency, however, given that many judges believe that they are promoting social well-being when they favor certain types of litigants. The supposition of a preference for efficient norms constitutes a psychological hypothesis which is subject to empirical confirmation. Nonetheless, we recognize the reasonability of this proposition, since in addition to legislation removing dysfunctional incentives, it appears implausible to suppose that judges have a preference for the reduction of societal well-being or that they are indifferent to this result.

If the structure of the judicial system can adequately solve incentive issues, the same cannot be said of problems of knowledge. Ideally, legal norms should result in the weighing of all social costs and benefits, in order to produce the same results that the market would achieve if transaction costs were not high. This requires nothing less than omniscience on the

part of judges who would need to know the utilities and costs of every person in society, and foresee exactly all the effects of alternative norms, aggregating and comparing their social costs and benefits in order to select the norm which will produce the greatest net benefits for society.

The first difficulty in this endeavor is the fact that these utilities and costs are intensely mental feelings, and judges have no way of aggregating social costs and utilities and calculating net gains or losses. Judges cannot even trust market prices in making cost-benefit analyses, given that outside of the state of equilibrium, there are no measures that capture the true opportunity costs to society (BUCHANAN, 1999; RIZZO, 1979; VAUGHN, 1980). As Krecke (1996) observes, the judge of traditional economic models operates under an overall structure of equilibrium, in which there exists the perfect coordination of all individual plans. Paradoxically, this model excludes the possibility of the law having any problems to resolve, because any contractual failures, accidents, crimes, etc. would be anticipated and avoided (KRECKE, 1996). In more direct terms, under an overall equilibrium, law would have no function to perform.

Judges find themselves before the same knowledge problem as central economic planners do (O'DRISCOLL, 1980; ARANSON, 1992). Thus, courts are incapable of substituting for the market and assuming the role of the Walrasian auctioneer. They simulate the results that he or she would achieve if transaction costs were not very high (RIZZO, 1980; KRECKE, 1996).

In a market economy, business people also face the same knowledge limitation. Thus, how can one justify a tendency toward efficiency in market processes? First of all, it should be pointed out that it is not expected that markets foster a perfect allocation of resources, even though market prices make it possible for business leaders to make economic calculations to adjust their production to public demand (MISES 1998). According to Kirzner (1973), profits function as incentives for business people to remain watchful in terms of

opportunities to correct inefficient allocations. Moreover, as Alchian (1950) has shown, the market functions as the natural selection mechanism for efficient firms.

2.2 NON-INTENTIONAL THEORIES

The origins of non-intentional theories can be traced back to the methodological contributions of Friedrich Hayek. In an influential article, the Austrian economist (HAYEK, 1937) contested the conception of an overall equilibrium, because of the premise of a utopian mutual compatibility of plans for every individual in society. Instead of admitting that everyone has identical expectations of the facts and actions of other people, the purpose of economic analysis is to explain how this knowledge is acquired. According to Hayek (1945), the central issue of the social sciences is discovering the best way to utilize the incomplete knowledge that is scattered among millions of minds. Within the economic context, this problem is solved by the price system which communicates relevant information to various agents, which leads them to make decisions as if they had information that they do not possess.

When individuals cannot count on a price system, there are institutions that enable them to communicate information and coordinate their plans. To Hayek (1960; 1973), life is possible in society only because people follow norms that have evolved from unconscious habits until they have turned into explicit, general and abstract propositions. Hayek (1973) contrasts the law and legislation, affirming that abstract and general legal norms provide individuals with additional information for their decision making, and they create conditions for the formation of a spontaneous order. On the other hand, legislation, that is the intentional creation of legal norms, is generally harmful, because it is based on specific commands that deny individuals the opportunity to act in accordance with their particular knowledge.

Dissatisfied with the internationalist explanations of Posner, Rubin (1977), Priest (1977) and Goodman (1978) developed the first formal models that sought to explain that the efficiency of law does not depend on the contributions of judges.

Rubin (1977) defines inefficient norms as those that, by attributing responsibility to one of the parties, impose greater costs on this party than the other party would pay if the ruling were reversed. Thus, efficient norms encourage the parties to resolve disputes through extrajudicial accords, when the benefit that the plaintiff is seeking through legal action is less than the defendant's expected cost. On the other hand, inefficient norms cause those who believe they have been harmed to litigate repeatedly until the inefficient norm is substituted by an efficient norm. Rubin (1977) concludes that when both parties have a continuous interest in a type of case, the evolutionary process will guide the law toward an efficient solution, no matter what kind of judicial decision is employed. Intelligent judges can even accelerate this process, but they will never steer it. The tendency towards efficiency disappears only when neither party or just one of the parties is interested in the precedent.

Priest (1977) constructed a more general evolutionary model which dispenses with the supposition of the continual interest of the parties. The basic assumption is that, the more inefficient the norm is, the more costly it will be for the harmed party to live with it, which will increase incentives for litigation of this norm in the future. Since the probability of litigation is greater in disputes involving inefficient legal norms, even if the judges decide randomly, inefficient norms will be substituted more often than efficient ones. Priest (1977) argues that, even if judges are hostile to efficient results, they will not succeed in imposing their biases on all of the norms of a legal order, given that litigation mainly involves inefficient norms. In this way, a legal order will always contain a greater proportion of efficient norms, despite a preference for inefficient results on the part of judges.

Goodman (1978) proposes an explanation that does not depend on any supposition about the frequency of litigation, assuming that judges are just subject to the persuasion of the arguments of the litigants. Based on the assumption that an increase in legal expenses

increases the probability of obtaining a favorable verdict, Goodman (1978) points out that parties have incentives to influence the decisions of judges through costly means, such as expenses due to judicial research, factual investigation, the hiring of professional talent, etc. It is expected that the party most harmed by a judicial norm will spend more and manage to effectively modify an inefficient norm. However, Goodman (1978) recognizes the tendency of efficiency only when the proportion of private benefits coincides with the social benefits.

Non-intentional theories do not consider the assumption of rationality on the part of the judges, not because they believe that magistrates are really irrational, but because of the increase in the explanatory power of the models when we assume that judges decide in an irrational or random manner. This can be seen in Priest's model (1977) which was inspired by Becker's demonstration (1962) that efficient markets do not need individual rationality, with the assumption of its scarcity being enough. The computational experiments of Gode and Sunder (1993), in turn, confirm that with a restricted budget, the performance of a simulated market featuring agents with zero intelligence is close to the results of the real market with human participation.

The idea that rational order emerges from irrational and random behavior has been expanded to explain other institutions, such as social norms (SUNDER, 2020). However, in order to affirm that a legal order is not only rational but efficient, we need to explain which institutional structures of the judicial process lead judges to have an inclination in favor of efficiency.

To Rubin (1977) and Priest (1977), greater litigation for inefficient norms explains common law's propensity for efficiency. However, it is not true that inefficient norms are really the subject of more litigation. Landes and Posner (1979) affirm that inefficient norms can be inclusive and less contested, when it is expected that the precedent will be reinforced by the new decision. In addition, the models of Priest (1977), Rubin (1977) and Goodman (1978) are only valid when the litigants represent the market as a whole. However, Hadfield (1992) shows that the litigants who reach trial are usually just a biased sample of these cases.

Alchian (1950) showed that only firms that earn profits by ability or accident survive, which is the way that the market naturally and gradually selects efficient companies. Kirzner (1973) stresses that profits motivate business leaders to coordinate plans and steer the market toward equilibrium. In the legal field, however, the guarantees and prohibitions of magistrates shield judges from their decisions, to the extent that they cannot be removed from their positions for emitting inefficient norms, and have no incentives to employ their maximum effort to research more efficient norms. In this way, there is no foundation for believing in the existence of impersonal forces that lead to gradual progress towards more efficient forms.

3. THEORETICAL MODEL

In this section, we will develop an evolutionary game to represent the change process for norms within a legal order of pure common law.

A legal order is made up of a group of norms which can be classified as efficient or inefficient. Efficient norms are those that maximize the sum of the utilities of all individuals in a society. We will assume that legal norms are contested by litigation, with the harmed party of a current norm formulating a proposed norm, which if accepted, will solve the dispute and govern future cases. The judicial process promotes a confrontation between the current norm and a proposed norm, in which only one version will emerge victorious. The current norm can be maintained and the proposed norm rejected, or the current norm can be superseded and substituted by the proposed norm which will then become the current norm.

Since we are interested in modelling a pure common law system, we considered a legal order entirely composed of legal norms. For simplicity, we did not consider the existence of litigation involving controversies that are exclusively factual, as well as the possibility of a

new norm being introduced into the legal order without the disappearance of another norm, which happens in distinguishing2 or in effectively new cases.

In sum, an evolutionary game takes place between two populations: current norms and proposed norms and the judges are responsible for the natural selection mechanism for these two populations, establishing the chances of each of these populations surviving after litigation. Litigation involving the current norm and a proposed norm can be modeled as a zero-sum game in which Player 1 is the current norm and Player 2 is the proposed norm as presented in Table 1 below.

Table 1 – Zero-Sum Game Matrix

		Player 2	
		E	I
Player 1	E	$p_1, 1-p_1$	$p_2, 1-p_2$
	I	$p_3, 1-p_3$	$p_4, 1-p_4$

Source: Elaborated by the Authors.

In this game, p_i is the probability that the current norm will prevail in a litigation. Let x_1 and x_2 represent, respectively, the proportions of efficient and inefficient current norms in a legal order, and y_1 and y_2 represent, respectively, the proportions of efficient and inefficient proposed norms. Thus, we have $x_1 + x_2 = 1$ and $y_1 + y_2 = 1$. If x_1', x_2', y_1' and y_2' are the respective proportions after litigations between current and proposed norms, we have $x_1' + x_2' = 1$ and $y_1' + y_2' = 1$ and:

$$(1)\ x_1' = x_1y_1 + x_1y_2p_2 + x_2y_1(1-p_3)$$

$$(2)\ y_1' = \frac{x_1y_1(1-p_1)+x_2y_1(1-p_3)}{x_1y_1(1-p_1)+x_2y_1(1-p_3)+x_1y_2(1-p_2)+x_2y_2(1-p_4)}$$

[2] Distinguishing is a situation when the judge or court demonstrates that a case under examination is different from the situation which gave rise to the creation of the precedent, therefore it merits a different judicial solution.

According to Equation (1), an efficient norm always appears when an efficient current norm faces an efficient proposed norm; when an efficient current norm faces an inefficient proposed norm and the current norm is maintained (which occurs with probability p_2); when an inefficient current norm faces an efficient proposed norm and it is substituted (which occurs with probability $1 - p_3$).

Equation (2) affirms that efficient proposed norms appear proportionally to the relative proportion of litigation that substitutes current norms when efficient norms have been proposed. In other words, if efficient proposed norms have more success in litigation than inefficient proposed norms, there will be an incentive to propose efficient norms. The idea is that the probability of a judge approving a proposed norm depends on whether the current and proposed norms are or are not socially efficient and whether judges have a bias in favor of efficiency or inefficiency. Thus, it is reasonable to suppose that whether the proposed norms are efficient or not, they evolve in accordance with these norms' chances of success in litigation. Thus, in deciding to take judicial action, the chances of a proposed norm being approved by judges should be taken into account given the procedural costs involved.

In an equilibrium, we will have $x_1' = x_1 = x^*$ and $y_1' = y_1 = y^*$, or in other words, there will not be an alteration in the proportions. Considering that $x_2 = 1 - x_1$ and $y_2 = 1 - y_1$, these equations can be rewritten in the following manner:

(1) $x_1' = x_1 y_1 + x_1(1 - y_1)p_2 + (1 - x_1)y_1(1 - p_3)$

Equating $x_1' = x_1 = x^*$ and $y_1' = y_1 = y^*$, and isolating x^*, we have:

$$x^* = \frac{y^*(1-p_3)}{1-p_2 + y^*(p_2-p_3)} \quad \text{(Equation 1)}$$

(2) $$y_1' = \frac{x_1 y_1(1-p_1) + (1-x_1)y_1(1-p_3)}{x_1 y_1(1-p_1) + (1-x_1)y_1(1-p_3) + x_1(1-y_1)(1-p_2) + (1-x_1)(1-y_1)(1-p_4)}$$

Equating $y_1' = y_1 = y^*$ and $x_1' = x_1 = x^*$, and dividing both sides of the previous equation by y^* (assuming that y^* is not equal to zero), we have:

$$1 = \frac{x^*(1-p_1) + (1-x^*)(1-p_3)}{x^*y^*(1-p_1) + (1-x^*)y^*(1-p_3) + x^*(1-y^*)(1-p_2) + (1-x^*)(1-y^*)(1-p_4)}$$

$$x^*y^*(1-p_1) + (1-x^*)y^*(1-p_3) + x^*(1-y^*)(1-p_2) + (1-x^*)(1-y^*)(1-p_4) = x^*(1-p_1) + (1-x^*)(1-p_3)$$

$$x^*[y^*(1-p_1) - y^*(1-p_3) + (1-y^*)(1-p_2) - (1-y^*)(1-p_4) - (1-p_1) + (1-p_3)] = (1-p_3) - y^*(1-p_3) - (1-y^*)(1-p_4)$$

$$x^* = \frac{(p_4-p_3)(1-y^*)}{(y^*-1)(p_3-p_1+p_2-p_4)}$$

Assuming that $y^* \neq 1$, we have:

$$x^* = \frac{(p_3-p_4)}{(p_3-p_1+p_2-p_4)} = \frac{(p_3-p_4)}{(p_3-p_4)+(p_2-p_1)} \quad \text{(Equation 2)}$$

Equating the right sides of Equations 1 and 2, we have:

$$\frac{y^*(1-p_3)}{1-p_2 + y^*(p_2-p_3)} = \frac{(p_3-p_4)}{(p_3-p_1+p_2-p_4)}$$

Therefore,

$$y^* = \frac{(1-p_2)(p_3-p_4)}{(1-p_3)(p_3-p_1+p_2-p_4) - (p_2-p_3)(p_3-p_4)}$$

$$y^* = \frac{(1-p_2)(p_3-p_4)}{(p_3-p_1+p_2-p_4) + p_3p_1 - 2p_2p_3 + p_2p_4}$$

$$y^* = \frac{(1-p_2)(p_4-p_3)}{(1-p_2)(p_4-p_3)+(p_1-p_2)(1-p_3)} \quad \text{(Equation 3)}$$

We will assume that the judges and courts are classified according to their biases, so that there are judges and courts with a bias towards efficiency, when they prefer current or proposed norms that produce efficient results, and judges and courts with a bias towards inefficiency that will prefer the opposite. Considering that the rewards are the probabilities that the current norms (Player 1) or the proposed norms (Player 2) will emerge victorious in litigation, we have:

1. For all types of judges, we will assume that they have effort aversion (EPSTEIN, LANDES, POSNER; 2013). Therefore, judges will only substitute a current norm if the proposed norm is of the type of their preference, but in these cases, there is still a chance, represented by variable q in the model, that the current norm will be maintained;
2. Therefore, for judges with a bias towards efficiency, we will have the matrix displayed in Table 2.

Table 2 – Game Matrix for Judges with a Bias towards Efficiency

		Player 2	
		E	I
Player 1	E	$1, 0$	$1, 0$
	I	$q,\ 1-q$	$1, 0$

Source: Elaborated by the Authors of this study.

3. And for judges with a bias towards inefficiency, we will have the matrix displayed in Table 3.

Table 3 – Game Matrix for Judges with a Bias towards Inefficiency

		Player 2	
		E	I
Player 1	E	$1, 0$	$q,\ 1-q$
	I	$1, 0$	$1, 0$

Source: Elaborated by the Authors of this study.

Supposing that the proportion of judges with a bias towards efficiency in society is equal to p, if a judge is picked at random to judge a litigation, we have the matrix presented in Table 4.

Table 4 – Game Matrix for Judges Selected at Random

		Player 2	
		E	I
Player 1	E	$1, 0$	$p + (1-p)q,\ \ 1 - (p+q) + pq$
	I	$(1-p) + pq,\ \ p(1-q)$	1,0

Source: Elaborated by the Authors of this study.

In this case, we have $p_1 = p_4 = 1$, $p_2 = p + (1-p)q$ and $p_3 = (1-p) + pq$. Substituting this into Equations 2 and 3, we have:

$$x^* = \frac{(p_3 - p_4)}{(p_3 - p_1 + p_2 - p_4)} = \frac{(p_4 - p_3)}{(p_4 - p_3) + (p_1 - p_2)} = p$$

$$y^* = \frac{(1-p_2)(p_4 - p_3)}{(1-p_2)(p_4 - p_3) + (p_1 - p_2)(1-p_3)} = \frac{1}{2}$$

On one hand we can see that the proportion of efficient norms is equal to the proportion of judges with a bias towards efficiency, and it is not dependent on the value of q. On the other hand, efficient and inefficient norms are proposed in the same proportion, and are independent of the values of p and q, given that in equilibrium, proposed norms – whether they are efficient or not – have the same chance of prevailing in litigation which is represented by $p(1-p)(1-q)$. Since it is in the interest of both parties to propose norms

that are individually beneficial and will prevail in litigation, the proportion of proposed norms is not related to the preferences or biases of the parties. This result remains valid when $p_1 = p_4 = 1$, independent of the values of p_2 and p_3, or in other words, this always happens when the judges have effort aversion.

4. ANALYSIS AND IMPLICATIONS OF THE MODEL

The theoretical model reveals that the efficiency of a legal order based on common law depends on judicial bias, or in other words, the preference of judges for efficient results. Since there is no theory about changes in preferences, it is impossible to forecast the direction of evolution of legal norms, and there are no reasons to expect that changes in law will always move towards efficiency (BAILEY; RUBIN, 1994). Since judges act as those responsible for the natural selection mechanism concerning legal norms, all that can be forecast is that common law norms will express the preferences that judges maintain while in office.

If above we recognized the reasonability of the assumption of judicial preferences, why do not judges simply choose norms that maximize social well-being? Uncertainty about the future effects of actions makes judges who prefer efficient results edit norms that produce inefficient results. A lack of sufficient knowledge about natural phenomena leaves people at the mercy of forces that are out of their control (MISES, 1998; 1962).

The complex nature of social phenomena hinders the determination of multiple causes that contribute to the occurrence of an event (MISES, 1998; HAYEK, 1967; 1978). Since omniscience has not been granted to humanity, people base their behavior on the only tools that they have to assist them: their perceptions in terms of the causes and effects of their actions, which means that they base these perceptions on how the world works. These perceptions are termed ideas (MISES, 2007; MCCLOSKEY, 2015) or beliefs (NORTH, 2005; MUELLER, 2016).

Judges do not know ahead of time which legal norms are more appropriate to achieve their desired results. Once in effect, a legal norm becomes another piece of data that people take into account in planning their actions. When litigation cannot be solved by strictly legal criteria, judges make decisions based on their beliefs about how the world functions (POSNER, 2008). North (1990) observes that, when the price of expressing one's convictions is low, ideas, dogmas, trends and ideologies become important sources of institutional change.

Thus, legal norms appear with the concretization of judicial ideas or beliefs. The more correct these ideas or beliefs, the more legal norms will approach their intended results. When we affirm, therefore, that judges have a bias towards inefficiency, it is understood that they prefer inefficient norms believing erroneously that they will achieve more efficient results.

Legal norms express the efforts of judges to make the law conform to their preferences within a variety of restrictions that they face. However, these preferences are dictated by the ideas that individuals nourish (MISES, 2007). Caplan (2007) states, with reason, that people hold irrational beliefs when they cannot stand their costs, but what each individual understands as costs depends on his or her beliefs. Kamikazes and suicide bombers demonstrate that even suicide can be an act of self-interest for some people.

The evolution of common law is not a blind process directed by impersonal forces which necessarily conduct it towards a final goal. In truth, judicial change is a short-term intentional process, whose selection criteria are the ideas or beliefs of judges. It is only legitimate to say that change in legal norms is a blind process in the sense that no one can plan the evolution of law. No individual can steer the course of events for more than a short period of time (MISES, 2007). It is possible that, from a retrospective point of view, it appears that the law has progressed in an objective direction over the long term. However, this is just an incidental consequence of the short-term selection of legal norms and proposed norms. As Hutchinson explains (2005), evolution can only guarantee that the law will advance in a

normative sense if there is a collective mind that steers the change process toward a given goal.

Given that it is not possible to determine a priori whether ideas endorsed by judges will be efficient or not, there is no method to determine which legal system will produce the best norms. In terms of the quality of legal norms, it is possible to make forecasts of general patterns, as we will highlight below.

1) Law reflects the predominant convictions in courts, even if they are out of step with society's ideas of justice.

   Baum and Devins (2010) provide evidence that it is the opinion of elites rather than mass public opinion that influences the Supreme Court in the United States. In terms of whether the legitimacy of the Supreme Court is robust, judges have few motives to fear public disapproval.
2) Law determined by legislation tends to be more in keeping with the will of average voters. Since congressmen usually desire to renew their mandates through periodic elections, the theory of the average voter demonstrates that congressmen adjust their positions to popular will.
3) Over the long term, law conforms with public opinion. Even judges with biases in favor of inefficiency will generally be substituted by people who are representative of the intellectual spirit of the times.

Every institution in existence represents the best solution found for a collective to solve an urgent problem, given the restrictions that are faced (LEESON, 2020; STIGLER, 1992). The law does not escape this logic. Common law and civil law systems have developed as efficient responses to the problems faced in each era by a given society. Thus, the efficiency of the judicial system can only be evaluated in specific cases, comparing the aptitude of each judicial model to solve the concrete problems that they were designed for.

The theory of the efficiency of common law is based on a metaphor between legal norms, market processes and natural selection, in which legal norms emerge as the result of

multiple social interactions analogous to prices.3 Our conception of legislated law is equivalent to an imposed top-down order, while judicial law corresponds to a spontaneous bottom-up order, whose result is the preservation of a free society. However, this association, besides being imperfect, does not prove the superiority of common law, because threats to freedom do not necessarily come from laws of the state, they can also come from common norms, social groups and local powers (LEVY, 2015; SIEDENTOP, 1979).

The action of the judiciary in common law is viewed with excessive optimism by Hayek (1960; 1973) and Leoni (1961). To these authors, the task of judges is not a creative activity, but merely a declarative activity of law. However, the affirmation that judicial activity consists of the mere declaration of a pre-existing right is quite disputed. Schauer (2015), for example, argues that judges have the power to create and alter law, even though they disguise this by calling it discovery. Hasnas (1995) argues that the content of judicial norms is necessarily determined by the preferences of the interpreter, and that the stability of the judicial system is due to the compatibility of the ideas or beliefs of the judges. Following this line of argument, Epstein, Landes and Posner (2013) find evidence that ideology influences the votes of the Supreme Court Justices of the United States.

Even customary norms are not always formed like the prices in a market under perfect competition. Just as there are economic agents with greater power in the market, there are people and organizations with greater capacity to influence the formation of customs, with it being natural that they do this for their own benefit, which creates informal rules that are not necessarily efficient. There are not even guarantees that the will of the majority is not always efficient. After all, the belief of the majority is not any more justified than a belief in the

[3] Hayek's idea of the dispersion of knowledge may have drawn inspiration from the following teaching of Edward Coke (2003, p. 701): "And therefore if all the reason that is dispersed into so many severall heads were united into one, yet could he not make such a Law as the Law of England is, because by many successions of ages it hath been fined and refined by an infinite number of grave and learned men, and by long experience growne to such a perfection, for the government of this Realme, as the old rule may be justly verified of it, *Neminem oportet esse sapientiorem legibus*: No man (out of his owne private reason) ought to be wiser than the Law, which is the perfection of reason."

supernatural powers of kings, clerics and nobles (MISES, 1998). In sum, we need to remember that the wisdom of the crowd lives with the madness of the masses.

If there were a necessary relationship between common law and efficiency, this judicial system would be efficient at any time and in any place; the convergence between western legal systems (MARKESINIS, 2001; MATTEI; PES, 2008; FAUST, 2019; YU, 1999) would only benefit systems of civil law; and the common law system would be harmed by the increase in legislation and regulation.

The historical evidence, however, contradicts these hypotheses. According to Caenegem (2006), until the middle of the 17th century, English law and the rest of European law were part of the same judicial family, which was Germanic and feudal, and they were quite similar in substance and procedures. Even with the institution of the systems of law promulgated by King Henry II (1154 - 1189) and by the French King Phillip II (1180-1223), English and French law were not very different, especially because the decisions were made based on local customs. The contrasting characteristics of English and French law which would mark the differences between the common law and civil law systems, were only acquired during the end of the 13th century and the 14th century (BERMAN, 1983).

In the 14th and 15th centuries, France instituted the practice of selling governmental offices which led to the immobility of judges, given that the buyer could be stripped of his position arbitrarily, which would eliminate the sense of striking such a bargain (BRISSAUD, 1915). In addition, the system of selling judgeships gave magistrates independence which over time made them more and more corrupt and distant from the population (BERMAN, 1983). The interest in profits and prestigious judgeships led many rich families to compete especially for positions in the highest courts. These positions also guaranteed these magistrates entrance into the nobility to such an extent that a considerable part of the aristocracy in France was constituted by robed nobility (PADOA-SCHIOPPA, 2017).

Magistrates came to be seen as representatives of powerful local aristocratic interests (STEIN, 2004). These judges used their power to dictate the law under the disguise of interpreting it against peasants, urban workers, the middle class, and attempts to centralize governmental power (MERRYMAN; PÉREZ-PERDOMO, 2019). Padoa-Schippoa (2017) tell us that on the eve of the French Revolution, the entire country echoed with bitter critiques of the discretionary power of the highest courts, the multiplicity of local customs, and the obscurity of the laws and judicial language. At this time, magistrates usually invoked unwritten nebulous general principles to justify decisions in their favor (CAENEGEM, 2006).

Unlike France, where the French king was the first among equals in relation to his feudal lords, in England the power of the king was wielded above the nobles. Ever since the Duke of Normandy, William the Conqueror, invaded England taking over the throne in 1066, the Norman kings put in place a series of administrative reforms designed to extend central power over the entire kingdom (PLUCKNETT, 2010). Particularly important was the institution of a system of real justice to develop common law for all of England, given that during the Anglo-Saxon period, there was a multiplicity of local and common laws.

In the 14th century, the Court of the Star Chamber stood out within the Royal Court to guarantee the faithful application of the law against powerful local magnates who were able to block compliance with the law in local common law courts. Even though it was hailed when it was implemented, this court of prerogatives became highly unpopular during the period of the Stuart monarchs. This was because in the 16th century the Star Chamber came to judge political offenses and acts, leading to critiques that it had been transformed into an instrument to persecute dissidents. Plucknett (2010) attributes the unpopularity of the court of prerogatives to a change in public opinion, given that there was no act, no matter how abusive, that had not been practiced under the Tudor monarchs. The rejection of the court reached its zenith when King Charles I (1625-1649) dissolved Parliament and governed from 1629 to 1640 with the Star Chamber assuming legislative functions.

Common law became popular thought, which was viewed as a safeguard for political freedom against the despotic impulses of central power when common courts positioned themselves in defense of popular causes against the crown (PLUCKNETT, 2010). Old law came to be associated with good law and the attitude of the judges did not cause the fear of robed dogmatism (MERRYMAN; PÉREZ-PERODOMO, 2019). Within this context, the English Civil War mobilized conservative forces to maintain the law under the control of the judiciary, not because they loved judges, but because they had the conviction that they were more reliable than legislators in performing the task of preserving the social order (CAENEGEN 2006, p. 48). In the comparison performed by Merryman and Pérez-Perdomo (2019), while the French Revolution sought to reject the old legal order, the English Civil War demanded its acceptance and even its glorification.

When the threat of tyranny comes from the crown, the capacity of local magnates to subvert justice is small, and judges establish themselves as a force fighting against the abuses of central power, and the judicial system will be viewed as being more efficient if the power to create judicial norms is entrusted to the judiciary. This explains why the English aristocracy formed a gradual tacit alliance with the common people to contain the pretensions of the monarchy, which led them to attribute the administration of justice to judges (GLAESER; SHLEIFER, 2002; SIEDENTOP, 1979; MERRYMAN; PÉREZ-PERODOMO, 2019). Inversely, when judges are corrupt, and the threat of oppression and the subversion of justice comes from local powers, the judicial system will be more efficient if the law is made up of precise written laws, which will make it easier to supervise correct compliance with legal norms (POSNER, 2008).

North (1990) points out that institutions change when changes occur in terms of relative costs or individual preferences. The agents of institutional changes are (political or economic) entrepreneurs who react to alterations in their costs or preferences. Changes in costs modify the incentives of individuals and organizations in interaction. Even though little is known about the modification of preferences, it is true that it molds our discernment in

terms of cost alterations. Finally, ideas and ideologies play a sensitive role in the institutional change process, to the extent that they form people's perceptions of relative costs.

Changes that occurred in American law during the Progressive Era provide a good illustration of how the institutional equilibrium between courts and legislatures can change to respond to needs to adapt to legal norms and new conceptions of justice.

In the 19th century, common law incorporated the laissez-faire principle, which is understood to be a neutral and pre-political system of rights (SUNSTEIN, 1987). The courts were the main engine of updates to the legal order. In the 20th century, there were great technological and social changes which made common law rules obsolete at an unprecedented rate. In turn, the courts did not accompany the progressive social policies desired by society.

During the Great Depression, the free market was already discredited and economic planning was seen as the only option to avoid social chaos. The legal response to the market crash of 1929 came in the form of the New Deal, a group of programs designed to revive the economy. During this period, the desire to shape democratic well-being in response to European fascism and Russian communism as well as the slow pace of legal changes, gave the impression that legislation was the appropriate solution (CALABRESI, 1982). Since then, there has been an explosion of legislation and regulation in the United States.

Obviously, this does not mean that the statutory response was completely successful, when we examine it in retrospect. Posner (1986) and Rubin (1982) associate the inefficiency of statutory law with the laws produced during the Progressive Era. Calabresi (1982) ponders whether these statutes were desirable for a while, but many of them became obsolete with time. It is important to observe that, during a scenario in which the convictions of the judges have revealed themselves to be anachronous and out of step with society's conceptions of justice, legislatures can comply with the task of producing laws with greater efficiency.

5. CONCLUSION

Theories of efficiency in common law are based on an inappropriate analogy between law, the market and natural selection. On one hand, intentional theories fail in their attempts to equate a judge with the market, ignoring that magistrates face the same limitations of knowledge that central economic planners do, which is why they are incapable of emulating the results that the market achieves when transaction costs are not very high. On the other hand, the unintentional theories fail in their attempts to equate a judicial process with a market process, given that the former does not offer judges the same incentives that competition offers business people.

We have presented an evolutionary game theory model to represent the evolution of legal norms in a common law system in which, under equilibrium, the proportion of efficient norms is equal to the proportion of judges who have a preference for norms which generate efficient results, which we call a judicial bias in favor of efficiency. The model indicates that efficient and inefficient proposed norms are presented in court in equal proportions, independent of the preferences or biases of the parties, given that it is in their interest to propose norms that will be beneficial and will prevail in litigation. In this manner, the efficiency of legal norms depends on a judicial bias towards efficiency and not the behavior of both parties.

Given that the preferences of individuals are determined by their ideas, beliefs or mental models, legal norms reflect the ideas that judges maintain at the time of their promulgation. Since there is no theory about changing ideas, it is impossible to say whether common law will produce more efficient legal norms in any situation. The efficiency of the judicial system can only be evaluated in a specific case, comparing the aptitude of each judicial model in solving the real problems that they were conceived to solve.

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