Taking the Costs of Consent Seriously:  
An Alternative Understanding of Efficiency As a Legal Concern  
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Abstract: Most law and economics literature employs efficiency criteria that fit poorly with the structural features of the legal environment. The major limitations trace back to the analytical separation of law from its formative process, which has resulted in an almost exclusive focus on the allocative efficiency of legal entitlements and little or no attention paid to the causal relationship between the efficiency of legal rules and the efficiency of the lawmaking process. I contend that this conventional output-oriented approach is susceptible to the following criticisms: 1) it is affected by logical circularity and/or logical incompleteness; 2) it fails to provide any assurance of increased social welfare, 3) it does not account for the presence of losers, and 4) it does not account for the predictability/adaptivity trade-off associated with legal change.

Based on the foregoing considerations, this paper proposes an alternative understanding of legal efficiency. Efficiency is not an objective property of the outcome independent of the process; rather, it depends on the ability of the law-making process to embody, in a cost-effective manner, the general consensus of all the people concerned. Based on this premise, this paper proposes a methodology focused on the “process-outcome” relationship within the production of law, which I call “process efficiency analysis”. It relies on the analytical tools offered by transaction-cost economics and is grounded in the normative principles of constitutional contractarianism. In the last section of the paper, I illustrate process efficiency analysis by using an example from tort law.

Keywords: Pareto Efficiency, Wealth-Maximization, Sources of Law, Law-making Process, Unanimity, Product Liability.

Classification: K00, K40
1. Introduction

Most law and economics literature employs efficiency criteria that fit poorly with the structural features of the legal environment. The major limitations trace back to the analytical separation of law from its formative process, which has resulted in an almost exclusive focus on the allocative efficiency of legal entitlements and little or no attention paid to the causal relationship between the efficiency of legal rules and the efficiency of the lawmaking process. This paper contends that a promising strategy for overcoming (or mitigating) these shortcomings is to incorporate a transaction-cost analysis of law-making more fully into the analytical perspective developed by the constitutional political economy.

This paper proposes a methodology focused on the “process-outcome” relationship within the production of law, which I call a “process efficiency analysis.” It relies on the analytical tools offered by transaction-cost economics and is grounded in the normative principles of constitutional contractarianism. In addition, I contend that a process efficiency analysis is more consistent with the idea of individual consent as a normative basis of efficiency than the conventional output-oriented efficiency criteria.

In economic terminology, the term “efficiency” refers to the idea of Pareto optimality, or, alternatively, to other concepts (such as Kaldhor-Hicks efficiency and social welfare maximization) commonly used in policy analyses to overcome the restricted practicability of the Pareto efficiency criterion. Legal economists have imported these concepts into the legal realm without adapting them to the specific features of the legal environment (Miceli 1997; Mercuro & Medema 1997; Polinsky 2003; Shavell 2004; Cooter & Ulen 2008). As a result, law and economics scholarship is predominantly concerned with the content of legal rules rather than the process by which such rules are created. A legal regime is efficient when no additional gains from trade can be obtained through changes in the allocation of rights; that is, it is efficient when the sum of individuals’ surpluses is maximized.¹

The idea underpinning this idea of efficiency is the “commodification” of legal rights. Namely, if legal entitlements are treated as “commodities” that people (absent transaction costs and wealth effects) can freely buy and sell, then those

¹ Holding constant existing technology, available resources, and individual preferences and setting aside (temporarily) the transaction cost issue.
rights will be allocated, through the process of repeated private bargaining, to their highest-valued use. Crucially, the commodification of legal entitlements is associated with the separation of rights from their formative processes: It is the insulation of the output from the law-making process that enables economists to treat legal entitlements as “commodities.” Yet the commodification comes at the price of separating substantive legal rules from the law-making process. This is an inaccurate methodology. While there is no denying that economic theory offers invaluable insights into the analysis of law, it must be recognized that the adoption of mainstream neoclassical economic methodology without careful adaptation to the structural peculiarities of the legal environment is not a defensible methodological approach to legal economic analysis.

It is maintained here that legal efficiency is rooted in the process by which members of a community express their consensus and reach an agreement regarding the reallocation of legal rights. Legal efficiency is not an objective property of the outcome independent of the process; rather, it is a function of the ability of the law-making process to embody, in a cost-effective manner, the general consensus of all the people concerned. In this view, legal efficiency becomes a function of the interaction between institutional and environmental variables located at the process level. These variables capture both the institutional features of the law-making process (e.g., the degree of centralization or the ex ante-ex post perspective of law-making) and the characteristics of the regulated environment (e.g., the homogeneity, frequency, and/or complexity of the regulated cases, etc.). Once this logic is recognized, the problem of legal efficiency becomes one of identifying the comparative advantages and disadvantages of alternative sources of law in relation to the characteristics of regulated environments. This entails, of course, a more sophisticated evaluation than that involved in the assessment of specific allocative outcomes. Despite its increased complexity, however, the process efficiency analysis described in this paper provides explanatory and normative tools that usefully complement conventional methodology.

The analysis developed in this paper is certainly not sufficiently mature to be regarded as a systematic “theory” of law-making; nonetheless, it is comprehensive enough to propose a preliminary “framework” upon which a more systematic comparative institutional analysis could be developed in the future. To date, no one in the literature—with a few notable exceptions

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2 This is congenial to economists’ prevailing attitude regarding the prediction of efficient equilibria resulting from competitive market interactions.

3 Ostrom (2005) provides a useful distinction between “framework” and “theory”. “Frameworks (...) attempt to identify the universal elements that any relevant theory would need to include. (...) The elements contained in a framework help the analyst generate the questions that need to
(Komesar 1994; Parisi & Fon, 2009) ⁴—has attempted to propose a general economic theory of law-making; it is likely that the failure to provide such a general theory is due to the lack of a commonly agreed upon unified analytical framework. In this respect, the unified framework proposed here lays the groundwork for a systematic theory of law making.

I proceed as follows. Section I addresses the concept of efficiency as a legal concern. It begins by identifying the structural peculiarities of the legal environment that contradict in many important respects some of the assumptions underlying conventional economic models. These considerations introduce my general contention that an “output bias” underlies conventional law and economics methodology. It is argued that conventional output-oriented methodology is susceptible to the following shortcomings: 1) it is affected by logical circularity and/or logical incompleteness, 2) it fails to provide any assurance of increased social welfare, 3) it does not account for the presence of losers, and 4) it does not account for the predictability/adaptivity trade-off associated with legal change. In these respects, the perspective introduced by a constitutional political economy offers advantages. Section II sketches the outline of a comprehensive theoretical framework designed to predict efficiency problems with the law that incorporate transaction-cost economics within a constitutional political economy. Finally, Section III illustrates the proposed process efficiency analysis more concretely using an example from tort law.

2. Efficiency as a Legal Concern

This subsection identifies the structural features of the legal environment that are at odds with the output-oriented perspective. To be clear, it does not object to the unrealistic nature of conventional assumptions used in law and economics models. The sacrifice of realism goes hand-in-hand with the modeling of social

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⁴ Komesar (1994) has proposed a comparative analysis of alternative institutions (i.e., politics, courts and markets) that illuminates the limitations of the prevailing scholarship based on single institutional analysis. Komesar’s general analytical framework constitutes an important reference point for all those who engage in a comparative institutional analysis of the sources of law. Parisi & Fon (2009) examine “the relative advantages and the respective limits of alternative sources of law.” One important set of tools they use to investigate the structure of law-making costs is modern investment theory. From this methodological perspective, they conceptualize the production of legal rules as an economic investment in which the lawmaker sustains present costs in view of future uncertain benefits.
phenomena (Langlois & Csontos, 1983). However, the appropriateness of these assumptions is challenged on the grounds that they leave too much of the phenomenon under investigation out of the analysis. In particular, the failure to capture the implications of the legal nature of the object of reallocation (i.e., a “legal right”, as opposed to a “thing” or a “commodity”) leads to incomplete analysis.

2.1. The “Legal” Environment

The Process-Outcome Relationship. Everything that is qualified as “legal” is the result of a process that confers on the thing a legal nature. From an economic standpoint, both the efficiency of the outcome and the structure of the production costs are affected by the characteristics of this law-making process. On the one hand, individuals are willing to give up some degree of outcome efficiency in order to reduce the costs of law-making (Buchanan & Tullock, 1965). On the other hand, in many instances—and for various reasons, some of which will be discussed below—no available law-making institution is able to predictably generate an allocatively efficient outcome. Therefore, if the law-making process is not incorporated into the efficiency calculation, the marginal efficiency analysis of the outcome remains incomplete and, perhaps, misguided (Veljanovski 1980; Komesar, 1994; Parisi 2001, 2004; Parisi & Fon 2009).

Recently, Dari-Mattiacci and Deffains (2007) have nicely captured the importance of the process-outcome relationship. Their following statement provides a useful point of reference:

“we make a distinction between the efficiency of the products of the lawmaking process and the efficiency of the legal process itself in providing a certain, complete and predictable set of rules at the lowest cost for society […] We suspect that enhancing the study of the legal process will also advance our understanding of the rules thereby produced”.

Furthermore, conventional law and economics generally underestimates the fact that lawmakers’ decisional perspective is that of the “average” case. The allocation of legal entitlements is generally made with respect to “classes” of cases, rather than individual cases. The need to consider classes of situations makes it impossible to identify, let alone negotiate for the consent of, everyone affected by a re-allocation of legal rights. Furthermore, the lawmaker must take

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5 It is the law-making process that confers a legal nature to legal rights. A chief concern regarding the diverse set of disciplines related to legal theory, to which law and economics belong, is the relationship between the structure of the legal process and the content of legal rules.
into account the uncertainty inherent in the determination of the relevant facts. The lawmaker usually observes only a random sample of the set of non-uniform cases for potential regulation, such that the body of information is significantly constrained. Therefore, the “efficient” rule inevitably produces inefficient outcomes in a number of cases.

Finally, the analytical focus on single, specific scenarios, rather than on sets of non-uniform cases, fails to fully acknowledge the “joint-consumption” interaction among beneficiaries. First, individuals can hardly be excluded from enjoying the benefits of a favorable legal rule. This may cause free-rider problems, resulting in an under-production of efficient law. Second, legal rules may create negative externalities by imposing involuntary redistributions at the expense of those who do not consent to the allocative outcome, thereby failing to meet the Pareto efficiency criterion. (Buchanan & Tullock, 1965). To summarize, the law-making costs, the efficiency-on-average perspective, and the public-good aspect of legal rules structurally characterize the production of law.

**Dealing with Losers.** The output-oriented perspective aims at freeing efficiency analysis from value judgments. Although distributional concerns have not been neglected entirely (Trebilcock 1975; Quinn & Trebilcock 1982; Kaplow 1986; Trebilcock 2014) mainstream law and economics is based firmly on the assumption that allocative efficiency and distributional equity should be achieved at different functional stages. However, changes in the allocation of legal entitlements usually increase the well-being of some, while simultaneously decreasing the well-being of others. That is, the presence of losers is an essential component of legal change. This poses two methodological problems. First, the assessment of distributional issues entails interpersonal comparisons of utility, which requires value judgments of the sort that conventional economics seeks to avoid. Second, the dislocation effects associated with legal change generate “transition” costs that often impair the attainment of outcome efficiency.

**The Economic Value of Legal Predictability.** The production of legal rules involves a trade-off between legal predictability and legal change. On one hand, people are willing to sacrifice a certain amount of average outcome efficiency to be able to

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6 I borrow this expression from Trebilcock (2014)

7 One task involves understanding the initial distribution of normative resources; another task entails showing how to maximize the value of said resources. While the former is a task for philosophers, historians, or legal theorists, the latter is a proper object of the efficiency analysis of law, which ought to be concerned only with marginal improvements with respect to presumptive wealth distributions.

8 Calabresi (1991) maintains that all legal changes must, *ex ante*, entail some losers and that it is necessary to deal with the presence of losers to formulate normative judgments on the efficiency of a legal change.
more easily predict the legal consequences of their behaviors. That is, people gain a high expected benefit from the existence of a *stable* set of legal rules and are often willing to give up optimal allocations in exchange for higher predictability. On the other hand, people demand some degree of adaptation of law to exogenous changes in the social and economic environment. Institutional reforms designed to promote efficiency from an output-oriented perspective do not often take this economic trade-off into account. Instead, they either neglect the benefits expected from more predictable (although sub-optimal) legal regimes or overlook the high rate of technological change that characterizes some regulated environments.

**The Problem of Logical Circularity.** Allocative efficiency depends on the initial distribution of resources, which depends on the initial allocation of property rights. Therefore, efficiency is not a unique outcome—there are as many efficient outcomes as many possible initial distributions of property rights. This suggests that, in the absence of a nonefficiency-based theory of rights that allows for a normative judgement on the initial distribution of rights, there is no “unequivocal” meaning to comparing any two alternative allocations of rights. Namely, the determination of outcome efficiency rests on antecedent normative judgements concerning the initial distribution of resources that is taken into consideration as the basis for the efficiency assessment (Schmid & Shaffer, 1964; Schmid, 1989; Mercuro & Medema, 1997).

Hence, the problem with efficiency as a normative criterion is that there are too many possible efficient allocations of rights, and that efficiency provides no basis for choosing among them. Allocative efficiency can be defined only upon prior specification of the normative criteria that one adopts to select the distribution of rights that constitute the basis of the efficiency assessment. Similarly, the identification of costs requires a preliminary normative assessment of whose interest counts. As Schmid (2004) put it: “Costs is a function of rights. It is rights that determine whose interests are costs to others. It is these rights that make it possible for one person’s interests to become a cost to another”. This confirms that any efficiency assessment of rights must rely on a prior nonefficiency-based theory of rights. It is the structure of legal entitlements that determines efficiency, not the converse.¹⁰ The legal-economic discourse is *positional*, rather

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¹⁰ Mishan (1967) makes the following three points: “(1) […] the characteristics of an optimal solution are not uniquely specified but depend, in general, on the existing law; (2) […] the costs incurred in realizing an optimal outcome, and the question therefore of its “feasibility”, also depend upon the existing law, and finally; (3) […] an optimal solution emerging from conflicts of interest is optimal only with respect to an implicit constraint requiring the area in question to be
than merely technical; it rests on antecedent normative premises that are internal to legal-economic discourse.

If the normative assumptions underlying efficiency analyses are not clearly articulated, a serious problem of logical circularity arises that deprives efficiency analysis of any meaningful content (Samuels, 1978; Leff, 1976).

2.2. Defining Efficiency

I assume that the promotion of individuals’ welfare is a central concern of law and legal institutions. 11 The foregoing discussion suggests four methodological tasks that a “legal” efficiency criterion should be expected to accomplish. In particular, such a criterion should:

1) assess the desirability of alternative allocations of legal entitlements based on their impacts on the welfare of individuals and relative to the institutional framework (hereinafter, “welfare”);

2) deal with distributional concerns by recognizing that the presence of losers is a structural feature of legal change (hereinafter, “dealing with losers”);

3) account for the institutional dynamics of legal change and, in particular, for the trade-off between legal predictability and legal adaptivity (hereinafter, “legal change”);

4) acknowledge the positional nature of efficiency analyses, thereby avoiding logical circularity (hereinafter, “logical consistency”).

As will become clearer shortly, whether or not an efficiency criterion meets the above requirements depends on how the relationships between “outcomes,” “processes,” and “consensuses” are construed. Consider the following: First, an allocation of resources is a distribution of resources; to reallocate means to redistribute. 12 Therefore, any reallocation involves both efficiency and

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11 As will become clearer later, the reference to the welfare of the people can be interpreted in two different ways, depending on whether is measured by intrapersonal or interpersonal comparison of utilities.

12 Coleman (1985) demonstrates that “in order to overcome market failure it is necessary to integrate considerations of efficiency and wealth distribution” and that “the problem of inefficiency (…) requires attending both efficiency and distributive aspects of the problem”.

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distributional concerns (i.e., “fairness” in the current terminology). Pursuing efficiency by reallocating rights requires addressing both efficiency and fairness concerns.

Second, while efficiency is a property of an outcome, fairness speaks to a concern for the process that achieves the outcome. Efficiency is based on individual consent to the outcome, and fairness concerns the way in which those affected by an outcome give their consent to this outcome. Therefore, outcomes and processes as efficiency and fairness are inextricably related to one another, since they are both functions of individual consent. Conventional methodology claims to insulate outcomes from processes and efficiency from fairness. However, this requires artificially separating the “consensus with the outcome” from the “consensus with the process.” This latter step—which, for brevity, I dub “efficiency as outcome consent” or simply “outcome consent”—proves problematic in the context of legal economic analyses.

2.3. Efficiency as Outcome Consent

Conventional efficiency criteria are built on the logical relationship between allocative outcomes and individual consent. On the one hand, a rigorous application of the efficiency test in terms of “actual” consensus undermines the practicability of the efficiency assessment. On the other hand, any attempt to reconcile outcome consent with practicability results in impoverishing consent. The structural features of the legal environment (previously identified) further exacerbate these criticisms. This section briefly assesses alternative constructions of outcome consent in light of the criteria identified in the previous subsection.

2.3.1. The Actual Outcome Consent

Generally, the term “efficiency” refers to the concept of Pareto optimality. The Pareto principle embodies the idea that actual consensus allows social decision-making to achieve ethical neutrality. The source of any Pareto improvement is identified through an *intrapersonal* comparison of utility (Champman, 2005). Namely, the variation of one individual’s welfare is assessed against his or her

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13 For an excellent discussion of the role played by consent in the normative justification of efficiency, see Coleman (1987).

14 Cardinal individual utility is abandoned in favor of the use of *ordinal* individual preferences, which facilitates a comparison of individuals’ ordering of alternative social states that does not require the assignment of cardinal values to individual preferences. Cirillo (1979) provides a useful reconstruction of Pareto’s economic thought, in which he clarifies the importance of the principle of ethical neutrality in the thought of the Italian economist.
own utility function, rather than against other individuals’ welfare.\textsuperscript{15} Pareto optimality is achieved when no Pareto-superior moves are available, considering all possible alternative allocations.

Consider two individuals: \( c \) (the consumer) and \( p \) (the producer), who have utility functions \( U_c \) and \( U_p \), which represent respectively the welfare levels of \( c \) and \( p \) and which are not objectively measurable by an external observer. In addition, \( U_c \) and \( U_p \) are functions of a variable \( x_n \), which represents a particular allocation of legal entitlements. Thus, \( U_c = U_c(x_n) \) and \( U_p = U_p(x_n) \). According to Paretian logic, the move from one allocation of rights \( x_1 \) to another allocation \( x_2 \) is a “Pareto improvement” if the utility of one individual, say \( c \), increases subject to the constraint that the utility of the other individual, \( p \), does not diminish. Formally:

\[
U_c(x_2) > U_c(x_1) \land U_p(x_2) \geq p(x_1)
\]

Pareto optimality is reached at a point \( x^* \) where further reallocations that satisfy condition (1) are not possible. At \( x^* \) the utility of individual \( c \) can be increased only by reducing the utility of individual \( p \), and the converse. It is worth emphasizing that according to the prevailing interpretation of Pareto optimality (here criticized), at \( x^* \) the social welfare is maximized and no Pareto-superior moves can be made.\textsuperscript{16}

\textsuperscript{15} It is as if individuals are assumed to have lexicographic preferences with respect to their own personal utilities. That is, individuals are assumed not to compare their own personal utilities with social utility or with other individuals’ utilities; rather, if offered several social states, they invariably choose the social state that offers the highest personal utility, regardless of how much social utility (or others’ utility) is derived from it.

\textsuperscript{16} However—as I explain below in the text—Pareto optimality does not assure social-welfare maximization. The notion of “social welfare” rests on the assumption of interpersonal comparison of individual utility functions, while Pareto efficiency is based on the idea of intrapersonal comparision of utilities. Pareto himself did not interpret his proposed efficiency criterion as one that identifies a unique social optimum. In this respect, Cirillo, (1979) explains that Pareto in developing his notion of efficiency Pareto did not presuppose the existence of a social welfare function. The utilitarian justification of Pareto efficiency, according to which the Pareto test allows to maximize the sum of individuals’ utilities, is therefore highly objectable. On the utilitarian justification of the Pareto principle and a comparison with alternative normative foundations of Pareto efficiency, see Coleman (1980).
Let me now examine whether Pareto efficiency meets the criteria for defining a legal efficiency criteria identified above. The utility possibility frontier depicted in Figure 1 represents the set of Pareto-optimal points for all possible choices of \( x \).

**Figure 1 Utility Possibilities Frontier**

\[ \text{Utility } p \]

\[ \text{Utility } c \]

*Welfare.* First, the *intrapersonal* comparison of utility does not identify the individual who values a right the most in terms of social welfare. Without measuring the *relative* welfare gains and losses of different individuals, one cannot confidently identify the individual who values the right most highly and whether social welfare has been maximized. Only an *interpersonal* comparison of utility (and the related abandonment of Pareto non-cardinality) allows for the identification of the individual who values the contested resource most highly in terms of welfare. Namely, an *intrapersonal* comparison of utility might well identify a Pareto-superior move that allocates the contested resource to an individual who, according to an *interpersonal* evaluation, values the resource *less* (Chapman, 2005). Therefore, while we can say that a Pareto improvement *increases* social welfare (i.e., by increasing at least one person’s personal utility), we cannot know with certainty whether it *maximizes* social welfare (i.e., whether the
resource has been assigned to the person the values it most highly) (Chapman, 2005).

The preceding considerations can be illustrated by referring to Figure 1. All movements from a point representing the status quo, s, to any point located in the north-east region are social-welfare enhancing Pareto improvements—e.g., movements from s to a, from s to f, and from s to g. However, among them Pareto superiority cannot identify which one corresponds to the highest valued use of x. Furthermore, we cannot even say that every Pareto-optimal allocation is preferable to non-Pareto-optimal ones from the social-welfare standpoint. For example, d is Pareto-optimal but lies outside the north-east Pareto region; therefore, we cannot say that a movement from s to d improves the welfare of individuals.

Dealing with Losers. First, Pareto optimality does not distinguish between whether optimality is reached through a sequence of Pareto-superior moves or through a different path (i.e., Pareto-inferior moves or non-Pareto-comparable moves). For this reason, Pareto optimality remains blind to the presence of losers on the path to Pareto optimality. For example, a move from s to b reaches Pareto optimality through a Pareto superior move (i.e., no-losers; in this example, both p and c win). On the contrary, a reallocation from s to d reaches Pareto optimality through a non-Pareto-superior move (i.e., c wins, p loses). Both sequences lead to Pareto optimality, but while the former does not entail losers, the latter make one person better off and the other person worse off.

Hence, Pareto improvements can usually be realized only if compensation is actually paid. That is, when policy issues involve situations with both winners and losers, a unanimous actual outcome consensus can be reached only through full compensation. However, if the costs associated with the compensation mechanism exceed the benefits gained from the Pareto improvement, then the logic of Paretian superiority leads to incorrect results.

17 In g, person c is better off while p is indifferent; by comparison, in f person b is better off and c is indifferent; but, absent any cardinal measure of preference intensity, we cannot say whether c or p values the right the most. Again, c prefers g to a (and d to g); similarly, p prefers b to a and f to b, but this does not allow a “social” valuation for which a social welfare function is needed.
18 Coleman (1980) shows that a “Pareto optimal distribution can be reached either by Pareto superior steps or ‘moves,’ by Pareto inferior moves, or by a combination of the two.”
19 Sen (1970) explains that, depending on the characteristics of the relations between individual preferences, the Pareto notion of efficiency might fail to fulfill the important property of completeness. More precisely, the Pareto test fails to provide guidance when individuals have strictly opposite preferences.
To summarize, Pareto optimality: 1) cannot compare movement *within* the Pareto frontier; 2) cannot compare movement *along* the Pareto frontier; 3) does not ensure that every allocation *along* the frontier is preferable to every other allocation *within* the frontier. It only ensures that a Pareto-optimal point is preferable to any non-optimal point that is located in the southeast region. In essence, Pareto optimality suffers from incompleteness: It provides no guidance unless there is a unanimous consent among all individuals regarding the preference order with regard to *at least* one couple of alternative states of affairs.

**Legal Change.** Due to the focus on the allocation of the outputs of the law-making process, Pareto optimality does not allow for comparisons among alternative law-making processes, nor does it allow for a comparative assessment of how such processes differentially affect outcome efficiency. The predictability-adaptivity trade-off is foreign to the analytical scope of Pareto efficiency.

**Logical Circularity.** Consider the previous example. Assume that the two individuals are confronted with a social choice between two legal states defined by alternative rules of product liability: $x_1$ is defined by a negligence rule and $x_2$ is defined by a regime that imposes strict liability upon firms for injuries related to their sold products. $c$ is better off in $x_2$ and worse off in $x_1$, while $p$ is better off in $x_1$ and worse off in $x_2$. If the *status quo* $Q$ is $x_1$, then $x_1$ will be the Pareto-optimal allocation of rights, as it is not possible to move to $x_2$ without making $p$ worse off. Conversely, if the *status quo* is $x_2$, then $x_2$ will be Pareto optimal, as it is not possible to move to $x_1$ without making $c$ worse off. This shows that, when a legal issue has distributive implications, the *status quo* is regarded as a Pareto-optimal allocation. Namely, Pareto optimality is a function of the initial distribution of rights.

### 2.3.2 The Hypothetical Compensation Test

Most law and economics scholarship employs the Kaldor-Hicks (hereinafter, “KH”) test as the concept of efficiency. KH efficiency embodies the idea that hypothetical compensation is sufficient to achieve a unanimous consensus from members of a society. Compensation is not necessarily paid to the losers; instead, the theoretical possibility of compensation is sufficient for the efficiency claim. At first glance, KH efficiency seems to reconcile the Pareto principle (i.e., the idea of efficiency as outcome consensus) with the presence of losers in the reality of policy-making. However, the shift from actual to “hypothetical” compensation

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20 This concept of efficiency traces back to the contributions of Kaldor (1939) and Hicks (1941).

21 Bodway & Bruce (1984) provides a useful explanation of the principle of compensation as a theoretical device for separating efficiency and equity.
involves a shift from *intrapersonal* to *interpersonal* comparison of utility that poses more problems than it solves.

Consider the previous example and assume the *status quo* \( Q = x_1 \). The KH test asks whether \( c \) gains enough, in the move from \( x_1 \) to \( x_2 \), to hypothetically compensate \( p \) for her losses and still be better off. Crucially, unlike Pareto efficiency, here the monetization of the relative gains and losses allows for the inter-personal comparison of utilities.\(^{22}\) That is, individuals’ utility functions are measured in money terms. Let \( \omega_c \) and \( \omega_p \) represent the wealth levels of \( c \) and \( p \) measured in monetary terms (i.e., how much individuals would pay to have the welfare deriving from a particular allocation of legal entitlements \( x_n \)). In addition, let \( K \) denote the hypothetical compensation paid by \( c \) to \( p \) to compensate for her loss of welfare. A change in the allocation of right is regarded as a KH improvement if it satisfies the following condition:

\[
U_c(\omega_c(x_2) - K) > U_c(\omega_c(x_1)) \wedge U_p(\omega_p(x_2) + K) \geq U_p(\omega_p(x_1))
\]

\( (2) \)

*Welfare.* The major criticism of KH efficiency is that hypothetical compensation (in our example, \( K \)) ensures neither that the losers’ loss of welfare is effectively compensated, nor that the gainers’ gain in welfare is effectively larger than the losers’ loss.\(^{23}\) In fact, while actual compensation allows losers to evaluate their losses according to their own welfare functions (thus ensuring that social welfare is not diminished),\(^{24}\) hypothetical compensation entails that various collective bodies assess relative gains and losses through a hypothetical evaluation based on money sums. With monetized KH test, we lose the assurance that the welfare losses suffered by losers in the reallocation of rights are adequately compensated

\(^{22}\) Hypothetical compensation requires some measurement of gains and losses. As I will explain below in the text, the monetization of individuals’ utility functions is the source of major criticism of KH efficiency test as a legal efficiency criterion.

\(^{23}\) Champman (2005) demonstrates that “(...) in a Kaldor-Hicks superior re-allocation (...) it is possible that all we have accomplished is the transfer of a good from someone who values it more highly to someone who values it less highly and, therefore, a loss of total welfare overall.” Le Grand (1991) also clarifies this point.

\(^{24}\) Observe that losers would not agree to compensation that does not effectively offset their suffered losses.
by the utility they receive from monetary compensation. This leads to the conclusion that KH efficiency does not accurately identify social welfare improvements.

**Dealing with Losers.** KH efficiency ignores distributional concerns. All that it is concerned with is the aggregate increase in real income for the whole of society. The fact that gains and losses are measured in terms of willingness to pay exacerbates this shortcoming. Since willingness to pay depends on ability to pay, KH favors the allocation of resources to wealthier people, who thereby acquire a greater willingness to pay than the poor. This increased willingness to pay will, again, favor the rich in future allocations of resources, thereby causing even further increases in the willingness to pay, and so on.

**Legal Change.** KH poses an unresolved institutional choice problem: that is, which institutional process is best able to measure gains and losses in the reallocation of resources and to evaluate the plausibility of compensatory measures? On this view, only a comparative institutional analysis is able to identify the conditions necessary to enhance social welfare. When informational and measurement problems do not allow for a sufficiently confident assessment of the relative magnitudes of gains and losses or the plausibility of hypothetical compensation, KH offers no guidance. In addition, when the costs of institutional compensating mechanisms are likely to be greater than the benefits of reallocating resources, KH might lead to incorrect results.

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25 The reasons can be different. First, the marginal utility of money differs across people depending on their income levels. Second, external factors might determine a utility differential between gainers and losers with respect to the same sum of money. For example, the availability of goods that can effectively replace, in terms of utility, the lost resource might not be sufficient to compensate losers. Third, individuals have different levels of “productivity” in terms of converting the monetary compensation received into actual utility.

26 Champman (2005) clarifies that despite the gainers’ gains are larger than the losers’ losses in monetary terms, still the monetary value received by gainers might not enable them to generate a utility large enough to offset the losers’ losses. Adler (2000) and Mathis (2009) provide a similar critique to KH efficiency.

27 The KH test assumes implicitly a constant and equal marginal utility for all individuals. As Le Grand (1991) demonstrates, rather than achieving neutrality, KH efficiency conceals a peculiar social welfare function that systematically values rich people more than poor people. Similarly, Markovits (1993) emphasizes that the standard, monetized KH test does not consider that the monetary evaluation of gains and losses is positively wealth elastic.

28 Mathis (2009) observes that, as a consequence of a rigorous application of the KH test, “the rich would get even richer and their ability and willingness to pay would rise continually”.

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Logical Consistency. As Ellerman (2009) has recently demonstrated, a Numeraire fallacy undermines the logical consistency of KH efficiency. For our purposes, Ellerman’s critique is important for two reasons. First, it emphasizes the methodological difficulty of separating distribution and efficiency and the need for antecedent normative specifications in any efficiency analysis. Second, it shows the tautological character of an efficiency analysis when the normative premises underlying the definition of output are not expressly stated.

2.3.3. The Hypothetical Consent Test

The strategy commonly adopted in law and economics to evaluate the desirability of legal doctrines is based on a particular set of methodological assumptions. First, efficiency is characterized as an objective property of social states. Second, it is assumed that, in the absence of transaction costs, rational actors will agree to the efficient outcome. Third, it is also assumed that the objective function individuals seek to maximize is aggregate wealth. Based on these assumptions, according to Richard Posner, analysts should assess outcome efficiency by answering “the hypothetical question whether, if transactions costs were zero, the affected parties would have agreed to the institution” (Posner, 1992). That is, law should mimic the outcome of a hypothetical frictionless market, implicitly assuming that individuals in this idealized contest will consent to the wealth-

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29 The Numeraire fallacy is associated with the use of the same numeraire (i.e., money) to measure both efficiency and distribution. Ellerman (2009) observes that, while according to its proponents KH efficiency is based on the separation of efficiency and distribution, efficiency is assessed through the same numeraire by which distribution is measured. However, if the transfer of resources undertaken to compensate losers is measured with the same numeraire used to measure the “size of the pie,” there will never appear to be any increase or decrease in the size of the pie, and any KH move will appear to be a mere re-distribution of resources.

30 In addition to the Numeraire fallacy that I have emphasized in the text, KH efficiency is subject to a further problem of logical consistency. Scitovsky (1941) demonstrated that in some cases two different states of affairs might be Kaldhor-Hicks efficient to one another. This is generally known as the Scitovsky Paradox. However, it should be noticed that the Scitovsky paradox does not have significant relevance in limiting in practice the use of the KH test in law and economics. In practical terms it occurs when, in the transition from one state to another, a change in income distribution occurs so that the preferences of the winners and the losers differ substantially. This occurs for those projects that are of such a scale in relation to the total economy as to bring about strong income effects with consequent relevant changes in prices. Conversely, when the dimension of a project is small relative to the total economy, so that the influence on prices is not significant, it is unlikely that a problem of inconsistency in the result of cost-benefit analysis rises.

31 That is, it is assumed that consensus follows preferences.
maximizing outcome.\textsuperscript{32} From this perspective, the right is allocated to the person who values it the most.\textsuperscript{33}

The wealth maximization criterion\textsuperscript{34} (hereinafter “WM”) asks upon what allocation $c$ and $p$ would agree in the absence of transaction costs. From this perspective, it is assumed that in the (hypothetical) frictionless world individuals would agree on an aggregate-wealth-maximizing rule: i.e., absent transaction costs, $c$ and $p$ individuals would agree on the allocation of legal entitlements that maximize their total wealth.

Let $W$ represent the sum of the utilities of $c$ and $p$. In keeping with the previous example, the wealth-maximizing allocation of right satisfies the following condition:

$$
\text{max}_{x_n} W(U_c, U_p) = U_c(\omega_c(x_2) - K) \text{ subject to } U_p(\omega_p(x_2) + K) \geq U_p(\omega_p(x_1))
$$

(3)

\textit{Welfare.} By summarizing individuals’ preferences into a process of social wealth maximization, this approach eventually eliminates genuine consensus. Efficiency is the maximization of social utility, independent of individual genuine outcome consent. As Coleman (1987) observes, consensus is dissolved into the objective function of aggregate wealth measured in terms of individuals’ willingness to pay. There is nothing in the consensus that is not already incorporated into efficiency, as objectively measured through the metric of market prices. In short, this approach ultimately fails to find a consensual, normative justification of efficiency independent from the utilitarian argument (Coleman, 1987).

\textit{Dealing with Losers.} Like KH efficiency, WM also fails to recognize the distributional effects of legal change, thereby privileging and reinforcing the

\textsuperscript{32} In practice, Posner turns the idea of wealth maximization (hereinafter, “WM”) into an “auction rule:” legal entitlements should be conferred on the party who is willing to pay the highest price.

\textsuperscript{33} Notice that intrapersonal comparison of utility is abandoned. Individual preferences are cardinalized through market prices so to allows for interpersonal comparison of relative gain and losses.

\textsuperscript{34} Strictly speaking, WM is not an efficiency criterion. See, on this point, supra note 16, Coleman, “Efficiency,” 521.
existing wealth distribution. (Bebchuck, 1980). First, because prices reflect a given distribution of wealth, measuring preferences by means of market prices (i.e., willingness to pay) involves an assumption that the status quo is exogenous to the wealth-maximizing decision (Bebchuck, 1980). Second, WM is based on an external, tacit determination of relevant interests. It does not provide any selective criteria for determining whose interests should count in the WM calculus. (Samuels & Mercuro, 1984). From this perspective, it would be better understood in the light of an explicit discussion of the normative assumptions about the relevant interests to be counted as the ultimate objects of WM.

**Legal Change.** The lack of inquiry into the structure of the law-making process prevents WM from examining the relative merits of alternative sources of law (Komesar, 1994). WM proponents indulge in the methodological error of inferring the characteristics of the process from the quality of the outcomes. The observed allocative efficiency of common law rules leads Posner to conclude that the judicial process yields efficient results. Both the positive claim (i.e., that common law is an efficiency-seeking system) and the normative claim (i.e., that common law ought to maximize social wealth) seem to lack sound theoretical foundations (Hadfield, 1992; Garoupa & Gomez, 2011). Without a coherent theory of the law-making process to identify the preferences, incentives and constraints of the actors involved, Posner’s positive and normative claims bear the features of ideological assertions, rather than those of warranted theoretical propositions (Mercuro & Ryan, 1984).

**Logical Consistency.** First, the reliance of WM on the price system involves logical circularity. Because wealth maximization leads to different outcomes depending on assumptions about the initial rights distribution, an antecedent specification of rights is necessary to determine those prices on which wealth maximization relies (Samuels, 1981; Bebchuck, 1980). WM cannot be employed to determine the rights on which it ultimately rests (Coleman, 1980). Second, wealth is an “instrumental” value; it serves as a means to promote other values. The instrumental nature of wealth implies the need to further specify the notion of wealth as the object of maximization (Coleman, 1980).

The analysis to this point suggests that determining efficiency criteria by focusing solely on terminal allocative results leads to unsolved contradictions between a

35 Komesar (1994) elucidates the single-institutional nature of conventional law and economics. In particular, Komesar emphasizes that Posner’s economic analysis of law fails to investigate the relative advantages and disadvantages of common law over alternative law-making institutions. Thus, Posner’s positive claim falls into the Nirvana fallacy.

36 Coleman (1980) emphasizes that wealth maximization is incapable of generating an initial assignment of rights.
consensual justification of efficiency and the need for normative guidance in real-world policy contexts. It also shows that output oriented criteria do not meet the criteria for a legal efficiency criterion. In particular, 1) they fail to provide any assurance of increased social welfare, 2) they do not account for the presence of losers 3) they do not account for the predictability/adaptivity trade off associated with legal change; 4) they are affected by logical circularity and/or logical incompleteness. The next sub-section introduces the idea that one way to mitigate these contradictions is to extend the Pareto test to the constitutional choice stage.

2.4. Efficiency as Constitutional Consent

The body of scholarship known as “constitutional political economy,” which originated in the work of James Buchanan, provides a useful analytical perspective to investigate the efficiency of the law. Although, Buchanan did not develop a framework for a comparative analysis of alternative law-making mechanisms, the methodology he proposed provides useful insights. His methodological strategy (hereinafter referred to as “unanimous constitutional consent”) differs from conventional output-oriented methodologies in three important respects. First, Buchanan proposes a subjective notion of economic efficiency, according to which unanimous agreement is the only test for efficiency. Anything that is non-unanimously agreed to is inefficient (Buchanan, 1977). Unanimity is regarded as a normatively attractable criterion because it secures the protection of individuals’ autonomy and constitutes a means to achieve the enhancement of individuals’ welfare. Second, the unanimity test is applied at the constitutional choice stage, which logically precedes the decision regarding the terminal allocative results of the exchange. (Buchanan, 1962). In essence, the idea of enhancing individuals’ welfare through Pareto-superior moves is applied at the choice between alternative institutional frameworks (Buchanan, 1962). Third, outcomes that are efficient under one institutional framework cannot be compared with those that are efficient under alternative institutional frameworks. The focus of the efficiency analysis shifts from choices “within” to choices “between” institutional frameworks. Such choices are based on the methodology of hypothetical contractarianism (Buchanan, 1975). In sum, efficiency is the outcome of free and voluntary interactions within specific

37 While there is no denying that part of the normative attractiveness of unanimity is independent of its impact in terms of efficiency, it is also true that unanimity is attractive for reasons related to efficiency. As Buchanan contends, unanimity is the only test that can ensure that a change is beneficial to all the parties affected by a re-distribution. Coleman (1987) proposes a different understanding of Buchanan’s idea of efficiency; namely, he maintains that, by adopting unanimity as the only test for efficiency Buchanan reduces entirely efficiency to unanimity.
institutional frameworks. It is a function of the process of voluntary exchange and is determined relative to a particular framework of exchange.

The focus on the constitutional choice stage enables efficiency analysis to overcome some of the limitations of the output-oriented approach. First, unanimous constitutional consent is not subject to the inability to identify the social-welfare-maximizing allocation of legal entitlements. From a constitutional perspective, the problem of efficiency is not to maximize the objective properties of the outcome, but, rather, to identify the existence of potential gains-from-trade associated with institutional choice. The efficiency of the outcome is not directly measured; rather, it is inferred through the structure of the process from which it is generated. (Buchanan, 1959, 1984). This is the opposite of conventional output-oriented approach that, as noted above, infers consensus from the efficiency of the outcome. Second, the search for unanimous constitutional consent leads legal efficiency analyses to account for (at least to some extent) distributional concerns associated with alternative legal regimes. In fact, the law-making mechanism is the means by which societies deal with the distributional issues associated with making choices among legal regimes. Therefore, the constitutional choice among alternative law-making mechanisms necessarily incorporates distributional concerns. Third, the constitutional choice stage involves a shift of focus from “individuals’ incentives as shaped by the law” to “individuals’ incentives to produce efficient law.” This enables an efficiency analysis to capture the institutional determinants of legal change. An analysis of the incentives faced by those actors involved in law-making facilitates an understanding of how differently alternative law-making mechanisms impact the efficiency of legal change. Finally, it must be recognized that unanimous constitutional consent does not per se solve the problem of logical circularity. Efficiency is determined in relation to the institutional framework, which can be, in itself, the object of choice at a preceding logical level Coleman, 1987). However, the methodology of hypothetical contractarianism has the advantage of making explicit the normative premises of the efficiency analysis.

3. Process Efficiency

Having discussed the internal difficulties with the output-oriented approach, I turn now to envisage a complementary methodology based on a systematic focus on the relationship between the efficiency of the law-making process and the efficiency of the legal output.
3.1. The Consent

Process efficiency analysis builds on the idea of unanimous constitutional consent. It seeks to capture the relationship between the outcome of the law-making process and the law-making process itself by adopting a constitutional analytical perspective. Although it focuses on the institutional mechanisms of law creation (i.e., the sources of law), it does not exclude the outcome by the analysis; rather, it assesses the outcome indirectly in light of the analysis of the incentive structure underlying the law-making process. In addition, consistent with the idea of efficiency as constitutional consent, process efficiency analysis does not seek social welfare maximization; instead, it identifies the existence of potential gains-from-trade associated with institutional change.

From a logical standpoint, the focus on the sources of law is consistent with the idea of consensus as an efficiency test. The sources of law are institutional arrangements designed (or emerged) to obviate the fact that unanimity is not achievable in practice at the outcome level. If unanimity could be reached for each final allocative result at no cost, then the spontaneous emergence of law through repeated contractual practice would be the efficient law-making process. Instead, the presence of significant transaction costs associated with creating and enforcing norms explains the emergence in society of institutional “sources of law.” Because achieving unanimous outcome consent is costly (due to a variety of factors, some of which I will discuss below), economic actors consent to institutional mechanisms that enable them to save on the costs of unanimity while concurrently legitimizing departures from unanimity. That is, the sources of law are transaction-cost-reducing mechanisms that emerge in response to the cost structure associated with the struggle to achieve the consensus required to legitimize the legal order.

3.2. The Test

Following standard contractarian methodology, I imagine a hypothetical “constitutional convention,” in which a group of economic actors who expect to interact repeatedly meet behind a “veil of ignorance” to determine which institutional actor will make the rules to govern their interactions.38 (Rawls, 1971) This visualization introduces the distinction between the constitutional choice stage—in which members of a community choose the mechanisms for producing legal rules (i.e., law-making institutions)—and the institutional choice

38 Harsanyi (1978) develops the idea of a setting in which each actor has the same probability of finding himself or herself in different alternative situations. More recently, Parisi (1995) emphasizes the role of structural, stochastic and induced symmetry in ensuring impersonality of preferences. For a critique of contractarian methodology see Müller, 2002).
stage—in which the lawmaker (under the varying procedural constraints determined at the constitutional level) creates substantive legal rules. Unanimity is required at the constitutional choice stage, which concerns the allocation of law-making powers among alternative law-making institutions (hereinafter, “process-choice”). However, to the extent that unanimous constitutional consent is reached, unanimity is not required at the institutional level, which concerns the content of substantive legal rules.

The set of choices includes four alternative and idealized law-making techniques: 1) private legal orderings, 2) adjudication, 3) politics, and 4) agencies and bureaucracies. A source of law is Pareto optimal when no Pareto-superior changes are possible, considering all available alternative law-making mechanisms. Put another way, the optimal law-making mechanism is the one that cannot be modified without the consent of every member of the constitutional convention.

The shift in focus from the outcome of law to the sources of law changes the nature of the efficiency assessment. Individuals that are symmetrically situated at the constitutional choice stage choose institutions by taking into account the relative costs associated with alternative law-making processes and the characteristics of the expected flow of cases to be regulated. So conceived, the efficiency analysis investigates and assesses the institutional and environmental variables predicted to be most important in affecting the efficiency of legal rules.

3.3. Optimality

The proposed extension of Paretian logic to the allocation of law-making power justifies allocative results that are not efficient, according to the standard, outcome-oriented notion of Pareto optimality. This raises the difficult question of how the Pareto optimality of the process choice is related to the Pareto optimality of substantive legal rules. They relate to each other in various ways, depending on a changing set of institutional and environmental circumstances. However, it is generally predictable that optimal sources of law tend to generate non-optimal substantive legal rules due to the presence of high transaction costs associated with the law-making.

I group these costs into three explanatory categories. Information costs: Because legal rules are theoretical constructs, the formulation of legal content requires a

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39 In practice, the efficient lawmaking process stays with an optimal mix of alternative sources of law. The ultimate goal of the process efficiency analysis is to identify the optimal division of labor among different lawmaking mechanisms in order to maximize institutional complementarities and comparative advantages.
great deal of knowledge, competence, and experience. The actors involved in the production of law face, therefore, significant information gathering costs. **Agency costs:** The incentives of the lawmaker often diverge from those of the people subject to the law; this undermines the law-making process’s degree of responsiveness to the interests and preferences of the people subject to the law. In addition, the latter face considerable difficulties in monitoring the activities of the former, which creates opportunities for lawmakers to create legal rules that serve their own interests. **Adaption costs:** The law-making process faces a difficult trade-off between the costs of (long-run) legal certainty and the costs of changing the law in response to changes in the regulated environments.

In sum, the capacity of legal rules to promote efficiency is constrained by the limited information available to the lawmaker, the misalignment of incentives between the law-maker and the people subject to the law, and the trade-off between legal certainty and efficient legal change. The goal of the law-making process is to minimize the impact of law-making transaction costs on the efficiency quality of legal rules, thereby achieving what I call, respectively, “technical efficiency,” “agency efficiency,” and “adaptive efficiency.” In my proposed terminology, these are the three components of process efficiency analysis.

Once the entire set of law-making costs is included in the efficiency calculus, the closest approximation of the Pareto frontier is generally achieved at a point that cannot be qualified as Pareto-optimal in the standard sense. Because, as noted above, Pareto efficiency does not discern among alternative sub-optimal outcomes, an alternative efficiency criterion is needed. I contend that extending the basis of the Pareto test to the outcome-process relationship is one possible way to compare movements (within the Pareto frontier) that are non-comparable on the basis of an actual outcome consensus. The intuition is the following. Because the distance of final allocative results from the Pareto frontier is a function of law-making costs, the ability to assess the relative costs of alternative sources of law facilitates a comparison of the sub-optimal allocations attained by law-making processes. That is, sub-optimal points that are non-comparable under “standard” Pareto efficiency become comparable under process efficiency. However, this is more easily said than done. This section proposes one possible way to conduct a process efficiency analysis.

The idea of comparing sub-optimal points through an assessment of the relative magnitudes of the law-making costs associated with alternative sources of law is consistent with the idea of consensus as the basis for the efficiency test. Consent relates to the “process-outcome relationship.” Individuals choose the best possible process-outcome ratio—that is, the one that most enhances their
welfare, under the constraints of others’ preferences and the status quo. The attained outcomes are not “optimal” in a standard Paretian sense, but are “optimally” produced. The lawmaking process is optimal (or “efficient”) if there is no other alternative institution that does better, across the circumstances in which it actually operates, in producing legal rules such that each member of society is enabled to enhance his or her own welfare.

3.4. The Costs: A Taxonomy

The efficiency assessment proposed here requires the identification of a unified taxonomy of law-making costs, which will enable the measurement of the various components of process efficiency across different law-making institutions. The proposed taxonomy organizes the fundamental stages of analysis in assessing the relative merits of alternative law-making processes on a case-by-case basis. It does so by identifying the mechanisms that generate inefficiencies in the production of law. The efficiency of the output is still relevant, but is interpreted as a function of the law-making costs.

Importantly, the complexity of the interplay between law-making costs and the regulated environments does not allow for an identification of a unique cost-minimizing point. Cost functions depend on a large number of variables, whose saliences vary across institutions and situations.

My proposed taxonomy of law-making costs is organized around the three following principles:

1) Law-making costs are grouped into three categories, consistent with the definition of process efficiency: information costs, agency costs, and adaptation costs.

2) Each category has both a “process” and an “outcome” dimension. That is, while some costs are associated with the process of making the law, others are related to the inefficiency of the resulting outcome.40

3) Analysis of the variables affecting the law-making costs is organized along the lines of a supply and demand model. The supply side summarizes the features of the law-making process that are predicted to predominantly affect the structure of the law-making costs (i.e., the institutional variables). The demand side summarizes the features of the situation from which the need for law arises in

40 As the discussion proceeds, it will become clear that I categorize outcome inefficiency costs as “law-making” costs because they are a function of the incentives embedded in the institutional structure of the law-making process. That is, they are causally related to the structure of the law-making process.
society (i.e., the environmental variables); it includes both the exogenous conditions of the regulated environments and the preferences, incentives, and constraints of the people subject to the law.

*Information Costs.* The law-making information costs include 1) information-gathering costs, 2) compliance information costs, and 3) participation information costs. First, the lawmaker bears information costs to develop the content of legal rules and assign legal entitlements. I call these costs “production-information costs.” Second, people who are subject to the law bear costs related to becoming informed about the content of legal rules. I call these costs “compliance information costs.” Third, the participation of the relevant actors in the law-making process requires the gathering of significant amounts of information.\(^{41}\) I call these costs associated with participation in the law-making process “participation information costs.”

*Agency Costs.* Agency costs measure the degree of responsiveness of the law-making process to the interests of the individuals subject to the law. From this standpoint, the analysis focuses on the principal-agent relationship between the people (i.e., the beneficiaries of legal rules) and the lawmaker, to whom people delegate the law-making power. Generally, differences in incentives between the people subject to the law and the lawmaker, as well as difficulties confronted by the former in observing the behavior of the latter, create room for severe agency problems. It is useful to distinguish among the following categories of agency costs: 1) influence agency costs (or external pressure costs), 2) internal pressure costs, 3) outcome agency costs, and 4) costs of reducing agency costs.

First, “influence agency costs” are generated by incentive misalignment among different groups of principals: that is, rent-seeking competition among various pressure groups that leads to the dissipation of resources that could be more productively employed elsewhere. This resource dissipation is usually referred to in the literature as “rent-seeking costs.” Second, “internal pressure costs” are associated with the lawmaker’s moral hazards (i.e., the lawmaker’s opportunistic behavior, which often occurs to the detriment of the principals’ interests). These manifest in various forms. Consider, for example, the rent-extortion costs (McChesney, 1987, 1997) and transaction-augmented costs (Twight, 1994) in the

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\(^{41}\) For example, in the political process, voters bear significant information costs in order to participate in the election of their representatives; in the judicial process, litigants spend a significant amount of resources in collecting and elaborating on the information essential to the adversarial process; and, finally, individuals in the market process bear information costs related to acquiring the information necessary to engage in market transactions (i.e., information on the quality of economic goods, the reliability of the counterpart to the transaction, and so forth).
political process, or the costs of bureaucratic drift in administrative processes.\textsuperscript{42} Third, “outcome-agency costs” are associated with successful rent-seeking.\textsuperscript{43} These are costs imposed on people subject to the law by inefficient legal rules that result from the opportunistic behavior of lawmakers combined with rent-seeking by pressure groups. These costs manifest themselves in various forms, such as through monopolistic rent costs in the political process or through agency slack on the part of bureaucrats in technocratic law-making. Finally, agency costs are also those associated with the functioning of institutional arrangements designed to minimize the agency problem (i.e., the “costs of reducing agency costs”). Consider, for example, the costs associated with institutional arrangements designed to minimize lawmakers’ moral hazards in bureaucratic processes (i.e., the costs associated with \textit{ex ante} and \textit{ex post} control of bureaucratic action by politicians), or the costs associated with institutional arrangements designed to discourage rent-seeking (e.g., the division of powers, a bicameral legislature, etc.).

\textit{Adaptation costs}. Adaptation costs include: 1) adaption transaction costs; 2) adjustment costs; 3) resistance costs; 4) maladaptation costs. Adaptation transaction costs are those incurred by individuals seeking to appreciate the efficiency advantages of a superior legal regime and to coordinate a simultaneous, mutually advantageous migration towards the new legal regime. Consider, for example, the costs involved, for members of all groups, in appreciating the advantages of a new social norm or in adopting a new technology. First, adjustment costs are those that individuals bear when transitioning to the new legal regime and changing their behaviors as required by the law. These are conduct costs in nature; that is, they are related to the behavioral changes imposed on individuals by the legal change. Third, resistance costs include the cost increments borne by individuals in order to maintain old behaviors. Legal change is often associated with resistance from those individuals who suffer losses due to the new legal rules (i.e., the losers) (Trebilcock, 2014). Resistance also comes from those individuals who are slow to appreciate the advantages of legal change.\textsuperscript{44} In general, an individual chooses to adjust to a new legal regime to the point at which the present value of an increment in the adjustment costs equals the present value of an additional increment in resistance costs. Fourth,

\textsuperscript{42} Influence agency costs and internal pressure costs differ with respect to the source of the rent-seeking activity. While internal pressures derive from rent-seeking efforts on the part of officials operating within the law-making arena, external pressures derive from various stakeholders’ efforts to extract rents from the law-making process.

\textsuperscript{43} Influence agency costs and internal pressure costs are independent of whether the rent-seeking efforts of agents and principals succeed.

\textsuperscript{44} Both losers and individuals who do not appreciate the efficiency advantages of legal change tend to stick to “old” norms, thereby incurring resistance costs.
adaptive efficiency has an important outcome dimension. That is, the inefficient adaptation of the production of law to exogenous changes in the demand for law generates substantively inefficient norms.\footnote{In the event of a change in the regulatory environment, legal rules that were previously efficient may become inefficient. The mismatch between the supervening inefficient rule and the changing context determines the magnitude of the maladaptation costs.} I refer to the costs generated by those substantively inefficient legal rules resulting from the inefficient adaptation of law-making to changes in the demand for law as maladaptation costs. Finally, the levels of information and agency costs identified above have obvious dynamic implications: The higher the agency and information costs are, the slower and less effective the legal change will be. Figure 2 summarizes the discussion.
**Figure 2 Unified Taxonomy of Law-making Costs**

<table>
<thead>
<tr>
<th>Supply Side</th>
<th>Demand Side</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information Costs</strong></td>
<td><strong>(1) Information Gathering Costs</strong></td>
<td><strong>(2) Compliance Information Costs</strong></td>
</tr>
<tr>
<td></td>
<td>(e.g., costs associated with appreciating people’s preferences and estimating the distribution of prospective cases with respect to the variables relevant for regulation)</td>
<td>(e.g., costs associated with appreciating the content of legal rules)</td>
</tr>
<tr>
<td><strong>Agency Costs</strong></td>
<td><strong>(1) Internal Pressure Costs</strong></td>
<td><strong>(3) External Pressure Costs</strong></td>
</tr>
<tr>
<td></td>
<td>(e.g., rent-extortion costs, augmented transaction costs)</td>
<td>(e.g., rent-seeking costs)</td>
</tr>
<tr>
<td></td>
<td><strong>(2) Costs of Reducing the Agency Costs</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(e.g., costs associated with checks and balances in the political process, \textit{ex ante} and \textit{ex post} control costs in the bureaucratic process, and so on)</td>
<td></td>
</tr>
<tr>
<td><strong>Adaptive Costs</strong></td>
<td><strong>(1) Dynamic Implications of Information and Agency Costs</strong></td>
<td><strong>(2) Adaptation Transaction Costs</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(e.g., the cost of appreciating the advantages of legal change)</td>
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<td></td>
<td></td>
<td><strong>(3) Adjustment Costs</strong></td>
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<td></td>
<td></td>
<td><strong>(4) Resistance Costs</strong></td>
</tr>
</tbody>
</table>
3.5. The Supply of and Demand for Law

The final step in the process efficiency analysis is to identify those variables that are predicted to be most important in affecting the structure of the law-making costs (and, thereby, of determining the relative efficiency of alternative sources of law). In this respect, it is useful to organize the inquiry along the lines of a supply of and demand for law. As has been repeatedly emphasized, the central hypothesis is that the efficiency of law depends upon the interplay between the demand for and supply of law—that is, the interaction between institutional and structural variables that is at work within the formation process of law determines the efficiency properties of the outcome. Figure 3 illustrates the analytical framework of the process-outcome relationship.

Let me succinctly provide some explanatory examples of variables affecting law-making costs. It is convenient to proceed at two levels of abstraction. At the highest level of abstraction, it is possible to identify four variables (two institutional and two structural) that most affect law-making costs. On the supply
side, the *ex ante* versus *ex post* dimensions and the degree of centralization of law-
making significantly affect the three components of process efficiency.\(^{46}\) On the
demand side, the degrees of *frequency* and *homogeneity* of the behaviors subjected to
regulation largely determine the optimal mix of *ex ante* and *ex post* regulation and of *centralized* versus *decentralized* law-making.\(^{47}\)

This four-dimensional framework of law-making allows for the formulation of
three general hypotheses, to be tested against the results of the comparative
institutional analysis on a case-by-case basis. First, under conditions of high
homogeneity and frequency of the demand for law, the *ex ante* centralization of
law-making allows for significant economies of scale, which significantly reduce
the average (production and compliance) information costs. Second, *ex ante*
centralization entails a significant increase in the agency costs of law-making.
Third, *ex ante* centralization reduces the magnitude of the adaptation transaction
costs associated with legal change. It increases the magnitude of resistance and
maladaptation costs when the legal demand is heterogeneous and when both the
aggregate frequency and the frequency *per actor* increase.

At the lower level of abstraction, additional institutional and environmental
features, which vary across institutions, might exacerbate or counterbalance the
effects of *ex ante* versus *ex post* and of centralized versus decentralized
dimensions. Let me provide some examples.

*Information Costs.* In politics and bureaucracy, the information advantages of ex
ante centralization must be weighed against the disadvantages associated with the
high irrationality and limited information capabilities of the political law-maker
and the tendency toward overregulation and output ineffectiveness of the
bureaucratic processes. Adjudication enjoys comparative advantages in that it
allows for greater responsiveness of the production of law to local preferences in
a context characterized by high heterogeneity. Private law-making produces

\(^{46}\) *Ex ante* law-making produces legal principles that are applicable to classes of cases included
within the scope of the law. This entails that, from an economic perspective, the fixed costs of
creating legal principles are borne only once.

\(^{47}\) On one hand, the *frequency* of the regulated behavior affects the variable component of the cost
function, and the high level of frequency enables the lawmaker to distribute the high fixed costs
of *ex ante* law-making over a high number of legal cases. On the other hand, the *homogeneity* of
legal demand (i.e., when the elements that determine the need for legal intervention occur in
*similar* fashions) enables the lawmaker to organize the application of a *single* legal response to an
indefinite number of facts of law. Namely, if a sequence of potential cases that gives rise to a
specific economic need are similar with regard to how they can be addressed by the law, then the
lawmaker can shape the same institutional legal response to all cases. From this perspective, the
homogeneity increases the *marginal productivity* of the *ex ante* law-making. Furthermore, the
*homogeneity* of the legal demand allows for the regulation of prospective legal cases with a high
level of *ex ante* legal precision.

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efficient legal rules only under the very restrictive conditions of close-knittedness (Ellickson, 1991; Bernstein, 1992; Cooter, 1992).

Agency Costs. In politics, three institutional features exacerbate the agency costs associated with ex ante law-making: the rational ignorance of the electorate as a whole, the majoritarian character of political decision-making, and the collectivized nature of the legislative outcome. Administrative law-making entails bureaucratic drift costs, as well as costs related to the strategic use of delegation by politicians, which exacerbate the agency problem associated with ex ante centralization. In adjudication, the doctrine of stare decisis accentuates the ex ante dimension of judicial law-making, thereby further increasing the rent-seeking pressures aimed at influencing the evolution of precedents. Private law-making significantly decreases agency costs (although it is not immune from the agency problem). However, even in the context of private legal orderings, as the degree of centralization increases and the law-making adopts an ex ante perspective (e.g., industry “self-regulation”), agency costs increase significantly.

Adaptation Costs. The political representative mechanism exacerbates the tendency of ex ante centralization to increase resistance and maladaptation costs. This is due to many factors, including: the increasing number of veto players that, in the political process, might block efficient transitions; the increasing number of rent-seeking groups that have incentives to promote inefficient transitions; and the transitional gain trap that prevents efficient legal change (Tullock, 1975). At the same time, however, it must be recognized that the offsetting capabilities of legislators can reduce resistance costs. The adjudication process has relative advantages over politics for three reasons: the leveling-of-the-playing-field effect associated with the judicial process; the incremental nature of judicial legal change; and the lower access costs than in the political process. Private legal orderings enjoy comparative advantages in these environments, in which group members are receptive to new technical information and are able to cheaply communicate with one another and coordinate a collective move toward efficient legal regimes. When these conditions are absent, pure, decentralized law-making is subject to the risk of being impeded by evolutionary traps and manipulated by interest groups; hence, it evolves toward or may stabilize the emergence of inefficient legal rules.

4. An Example: Product Safety

This section discusses the issue of product safety. The aim is not to provide a comprehensive discussion, but to provide some examples of how the process efficiency analysis helps to provide a different understanding of legal-economic issues that complements the traditional output-oriented perspective.
4.1. Output-Oriented Analysis

Most law and economics scholarship on product safety focuses on the following three issues. First, much discussion focuses on the choice between alternative liability rules (e.g., strict liability versus the negligence rule (“issue 1”) (Shavell, 1980; Miceli, 1997; Shavell, 2004; Cooter & Ulen, 2008). Second, divergent views have emerged over the issue of whether allowing manufacturers and consumers to design their own liability schemes, through contract, will allow them to shift product-related risks to those who can bear them at a lower cost, thereby enhancing social welfare (“issue 2”). Third, a stream of scholarship inquires into the choice between tort liability and safety regulation (“issue 3”). In this latter respect, there has been a tendency to agree on the complementariness of ex post liability and ex ante regulation, as well as on the social-welfare enhancing effect of the joint use of the two instruments (Shavell, 1984; Kolstad, Ulen, & Johnson, 1990; Schmitz, 2000).

Conventional law and economics approaches each of these issues from an output-oriented, single-institutional perspective. The analysis of issue 1 focuses on the impact of differing liability rules on the incentives to adopt efficient levels of precaution and engage in the optimal level of risky activities (Shavell, 1980). The source of transaction costs is exogenous to the model, and variations of these costs are independent of the choice between alternative institutional processes and environmental variables. The debate regarding issue 2 focuses on measuring the imperfections of private markets against an idealized, but unattainable, adjudication process (Bertrand, 2014), thereby exposing the analysis to a Nirvana fallacy. Similarly, the debate on issue 3 assumes alternative classes of rules (e.g., strict liability, uniform safety standards) to be exogenously given. It investigates the impacts of these outcomes on the incentives structure confronted by potential injurers and injured parties. There is no inquiry into how differentially alternative sources of law affect the content of the outcome.

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48 According to traditional law and economics prescription, when the technology of precaution is bilateral, then the negligence standard provides efficient incentives; conversely, when the technology of precaution is unilateral, strict liability is considered to be more efficient.


50 For a more elaborated position see the recent contribution by Miceli, Rabon, & Segerson, (2013).

51 This approach is dominant in most used law and economics text-books (Miceli, 1997; Shavell, 2004; Cooter & Ulen, 2008).

52 Generally, it is implicitly assumed that the source of “legal liability” is judicial in nature. Little attention is devoted to other institutional sources of legal liability (e.g., statutory or administrative liability). In addition, law-making costs are usually lumped into the sweeping concept of
I do not want to be interpreted as claiming that these analyses are incorrect. However, I suggest that the output-oriented approach needs to be integrated with a complementary analysis of the process-outcome relationship.

4.2. Process Efficiency Analysis

In the following pages, I analyze each of the three components of process efficiency analysis: information, agency, and adaptive efficiency. From this perspective, I show that: issue 1 is better understood in light of the impact on the law-making costs and in relationship with the overall organization of the sources of law; issue 2 is misplaced; issue 3 gains central importance, but from the contrasting perspective of the impact of the ex ante – ex post perspective on the structure of the law-making costs.

Each of the following subsections is organized into two steps. First, it discusses the choice between strict liability and negligence in the area of product safety (issue 1). Second, it emphasizes the relative advantages and disadvantages of politics, bureaucracy, judge-made law, and private legal orderings (thereby illuminating issues 2 and 3).

4.2.1. Information Efficiency

Strict Liability versus Negligence. One theory that explains the regime of strict liability in the area of product safety is the structure of production information costs. Strict liability increases the degree of centralization in the law-making process and implants an ex ante perspective into the context of adjudication (hereinafter, “ex ante centralization”). Liability is established prospectively for an entire “class” of cases, regardless of the level of precaution adopted by the injurer. As Epstein (1988) observes, strict liability “reserve[s] to the courts a legal monopoly to fashion the relevant terms and conditions on which all products should be sold in all relevant markets.”

Process efficiency analysis suggests that, when the demand for safety products is characterized by a high degree of frequency and homogeneity, ex ante centralization allows for significant economies of scale with respect to production information costs. From this perspective, the adoption of a regime of strict liability is justified in cases in which the demand for product safety is highly homogeneous and frequent. The traditional class of widely sold products with administrative costs, summarized into constant variables used in formal models. Finally, the errors of judges are considered in a number of models, as is the uncertainty in the definition of legal standards. However, again, these important variables are not treated as functions of the institutional law-making framework.
manufacturing defects (e.g., exploding Coke bottles) provides a good example of homogeneity and frequency that justifies (from an information efficiency standpoint) a strict liability regime. Far less homogeneous is the stream of designing and warning cases, which is characterized by a higher heterogeneity that causes the marginal informational costs to vary from case to case (i.e., are not diminishing), thereby preventing scale effects via the impact on the lawmaking average cost function.

A second reason that explains the regime of strict liability is related to the structure of compliance information costs. Assuming high frequency and homogeneity, if the application of the law is concentrated on a relatively limited number of people—such that the frequency per actor is high\(^{53}\)—strict liability will be combined with a high level of ex ante specificity of the content of legal rules. The reason for this is that higher frequencies per actor entail higher expected benefits from compliance—and, thus, higher demand for ex ante law-making, and higher legal specificity on the part of those most frequently subject to the rules. Differently stated, the higher the expected net benefit value from compliance, the greater the amount of resources that the individual is willing to use to increase his or her knowledge of the law. In this respect, observe that the demand for product safety often emerges from economic sectors with sharp polarizations between consumers and producers. That is, a relatively small number of potential injurers (cheaper precaution-takers) are exposed to high frequencies per actor so that the application of the law concentrates upon a relatively limited number of economic actors. In such cases, the regime of strict liability has an advantage in terms of information efficiency, as it enhances the deterrence effect of total liability while reducing the average costs of defining the terms of liability.

The two preceding arguments are consistent with the actual trend among several jurisdictions to adopt strict liability regimes in the area of product safety. The European Union Directive on product safety\(^{54}\) offers a good example of centralized regulation of product safety. Furthermore, empirical observation shows that many strict liability regimes are statutory in nature, which confirms the argument that strict liability is efficient under the same efficiency conditions as ex ante centralized law-making.

\(^{53}\) Frequency per actor affects the intensity of the behavioural effect by influencing individual incentives to comply with the law. Thus, holding the aggregate frequency constant, when the regulated behaviour is concentrated on a few actors, the high frequency per actor reinforces the behavioural effect. On the contrary, when regulated behaviours are widely distributed among the individuals subject to the law, the frequency per actor is low, thereby weakening the incentive to comply.

\(^{54}\) Directive 2001/95/EC of 3 December 2001 on General Product Safety
Sources of Law. The last consideration raises the issue of the impact of alternative sources on the definition of the optimal standard of care. This problem is acute when it comes to risky products. In fact, this area is often characterized by pervasive outcome uncertainty and requires both specialized competence and technical information on the part of the law-maker (Fraiberg & Trebilock, 1997).

The judicial law-making process proves highly inefficient in defining the content of a tort liability regime in the area of risky products. The ex post perspective exposes judicial law-making to cognitive biases in the measurement and assessment of risk. Loss aversion, hindsight bias, anchoring, framing effects, and other cognitive distortions prevent judicial decision-making from identifying efficient safety incentives in the area of risky products. (Rachlinski, 1998) (Guthrie, Rachlinski, & Wistrich, 2001). These inefficiencies are exacerbated by juries’ aversion toward corporate risk analysis. Empirical studies have shown that jurors tend to punish those corporations that carry out a cost-benefit analysis, interpreting the higher level of information about risk as an indicator of the intention to inflict the risk (rather than as a sign of corporate responsibility or an effort to achieve risk-cost balancing) (Moore & Viscusi, 1991; Viscusi, 2000).

Economic theory suggests that, because agencies and bureaucracies possess greater cognitive resources (and gather technical information at lower costs) than legislatures, the expected benefit of delegating law-making power to them increases with the complexity and uncertainty of the decision-making (Mitnick, 1980; Aranson et al., 1982). Despite this advantage, the structural features of the bureaucratic process are often at odds with information efficiency (and the efficient allocation of risks). First, when uncertainties emerge from regulatory processes, agencies’ regulatory responses to the demand for risk regulation are plagued by the “vicious circle” including public risk perception and congressional action and reaction. (Breyer, 2009). Namely, the bias in the public’s perception of risk is magnified by uncertainties regarding the regulatory process, and the increased pressure on agencies is likely to be reflected in a decision-making process that is in various way biased.55

Second, because excessive risk-taking, in the context of bureaucratic decisions, is more easily detectable than insufficient risk-taking, bureaucrats tend to over-

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55 Breyer suggests that regulatory inefficiency –manifests in three serious biases. First, agencies exhibit a tendency to focus narrowly on their regulatory mission at the expense of other policy goals (i.e., “tunnel vision”). Second, agencies do not prioritize the most significant problems; rather their regulatory priorities are influenced by public misperceptions of risks. (i.e., “random agenda selection”). Third, agencies may possess overlapping jurisdictions for the same regulatory issue, which creates the risk of inconsistent regulation when bureaucratic objectives and preferences are not aligned.
estimate the risk of imposing, through regulation, an “excess risk” on society—in comparison to that of allocating “insufficient risk.” Said differently, administrative regulation is systematically biased in favor of avoiding Type II errors (i.e., excessive risk), rather than Type I errors (i.e., sub-optimal risk) (Stearns & Todd, 2009), despite the fact that the costs of the latter might be equal to or even greater than those of the former.56 Third, the institutional insulation from people subject to the law deprives bureaucratic law-making of feedback signals concerning the relative benefits and costs of regulation. In conclusion, during assessments of the information efficiency of law-making through agencies, the advantages of specialized knowledge should be weighed against the costs of bureaucratic insulation.

Private legal orderings enjoy relative advantages in environments characterized by technical complexity, in which the identification of standards of conduct requires specialized knowledge on the part of the same economic actors involved in the risky activity. In general, private legal orderings are characterized by the fact that norm producers coincide with both targeted actors and norm-beneficiaries. This increases information efficiency because, unlike centralized law-making bodies, norm producers have a direct perception of their costs and benefits. Second, the fact that norm producers and norm beneficiaries are two identical sets of individuals raises the cost of irrational behavior in the process of norm creation—and, thereby, creates incentives to adopt rational beliefs and behave accordingly. This is a significant difference from the incentive structure confronted by norm producers in political and administrative processes. The comparative informational advantage of private ordering over other sources of law is consistent with the fact that, in the U.S., the vast majority of the technical standards necessary to protect public safety are developed by private, non-profit organizations. Namely, in drafting public rules, agencies rely on privately created standards by using the practice of “incorporation by reference” (Bremer, 2013).

As will be clear shortly, the information advantages of private orderings must be weighed against their disadvantages in terms of adaptive efficiency. However, it is generally recognized in the law and economic literature that the seller-customer

56 The effect of bureaucrats’ risk aversion on the level of regulation can be usefully explained through the concepts of Type I and Type II errors. Type I errors occur when bureaucrats reach the conclusion that a safe activity is risky; conversely, Type II errors occur when bureaucrats reach the conclusion that a risky activity is safe. In many cases, Type II errors involve more easily detectable societal costs because they manifest in tangible harm to people; on the contrary, Type I errors engender social costs detectable only through a counterfactual assessment of foregone benefits that could have been derived from the safe activity that was not pursued.

57 Unlike legislators, bureaucrats do not face direct electoral constraints, and, unlike judges, they are not involved in the litigation process between interested parties.
relationship between firms and consumers provides firms with incentives to regulate risk and to subject themselves to liability rules as a signal to consumers of the quality of their products (Daughety & Reinganum, 1995).

4.2.2. Agency Efficiency

This subsection is organized around two steps. First, it explains that the liability regime affects the degree of centralization of the law-making process. Centralization, in turn, increases the expected return from rent-seeking—thereby increasing the external pressures on the law-making body (Patchel, 1993; Ribstein & Kobayashi, 1996). Second, I briefly emphasize the relative advantages and disadvantages of politics, bureaucracy, judge-made law and private legal orderings.

Strict Liability versus Negligence. Compared to negligence, strict liability accentuates the centralization of the supply of law, thereby reducing the costs of coordinating interest group pressures. Consider two opposing scenarios. Under a negligence rule in a decentralized adjudication system, interest groups must engage in rent-seeking activities in each local jurisdiction to obtain favorable decisions. Taken to the extreme, in an ideal, polycentric, decentralized system (with a competitive pluralism of adjudicating bodies), the favorable decision produces effects among the parties to the dispute. Only the parties to a dispute have an incentive to invest in influence activities. Conversely, under a regime of strict liability, in the context of centralized adjudication, the greater uniformity of the law will ensure the uniform application and enforcement of the law across all local jurisdictions. This has three consequences. First, centralization allows rent-seekers to exert pressure at lower cost and greater effectiveness, thus allowing them to exploit economies of scale in rent-seeking (Redoano, 2010). Second, as the degree of centralization increases, it becomes more costly for individuals to opt out of inefficient laws; those individuals who suffer from higher costs from inefficient laws are forced to engage in a relatively more costly “voice” strategy. Third, as a consequence of this effect, centralization involves “outcome” agency costs. Interest group theory has long demonstrated that large, broadly based interests suffer from the problem of collective action, whereas concentrated

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58 However, also negligence standards can be centralized. For this reason, as emphasized shortly, the characteristics of institutional sources of liability rules needs to be analyzed in relationship with substantive legal rules determining the liability regime.


60 In contrast, decentralization and inter-jurisdictional competition facilitate the exercise of the exit option, reduce the monopolistic power of the centralized lawmaker, and ultimately limit the returns expected from rent-seeking behaviour.
special interests tend to be advanced more effectively by smaller and more organized interest groups that will manipulate legal outcomes to their advantage (often at the costs of larger, more disorganized interests) (Olson, 1965; Becker, 1983; Tollison, 1988).

From the agency efficiency perspective, although relevant, the choice between strict liability and the negligence rule loses centrality in favor of a more comprehensive analysis of the institutional law-making design. Consider two situations in which the degree of centralization and the liability rule counterbalance each other. A regime of strict liability enforced in the context of a highly decentralized system would likely generate lower agency costs than a negligence rule applied through a highly centralized adjudication system. For example, in a federal system, one state’s enactment of legislation imposing a strict liability rule for injuries caused by a specific type of product would not ensure uniformity across jurisdictions, which would depend on the adoption of the proposal either by each state legislature or by the federal legislature. This is because the effects of decentralization (i.e., decreased returns from rent-seeking and decreased exit option costs) dominate the effects of a move from negligence to strict liability (i.e., reduced uniformity and scope of the law). Conversely, a rule of negligence applied by a centralized adjudicative system would increase the magnitude of influence agency costs more so than a decentralized application of a regime of strict liability would. This is because the effects of centralization (i.e., increased returns from rent-seeking and increased exit option costs) would dominate the effects of a move from strict liability to negligence (i.e., reduced uniformity and scope of the law).

The discussion so far suggests the existence of a trade-off between informational efficiency (which is favored by strict liability) and agency efficiency (which is favored by the negligence rule) in the choice of the liability rule. A process efficiency analysis aims at identifying the institutional variables for choice that optimize this agency/information trade-off. For example, the strictness of the application of the *stare decisis* principle affects the expected duration of the period in which the precedent is likely to remain in force; this increases the expected value of the rents extracted from a favorable legal precedent (Zywicki, 2003). Hence, the sum invested in rent-seeking will increase with increasingly strict applications of the doctrine of precedent. This suggests that, in designing a liability regime in the area of product safety, one might consider exploiting the information cost advantages of strict liability, on the one hand, and mitigating the rent-seeking pressure through a more flexible application of the doctrine precedent, on the other hand.
Sources of Law. I now turn to alternative sources of law in the context of risk regulation. First, the politicization of law-making is likely to increase the magnitude of outcome agency costs. The cognitive biases that affect the public perception of risk create opportunities for politicians to extract private benefits from the manipulation of political processes. For example, through the effect of the “availability bias”, a highly-publicized, disastrous event may cause an over-estimation of the probability of such an event. (Aviram, 2006, 2007). The poorly intentioned politician could reap the benefits of a public over-estimation of the risk by persuasively overstating the effects of his proposed law and convincing people that the law reduces the likelihood of the disastrous event. In this respect, the adoption of a statutory regime of strict liability would exacerbate the magnitude of outcome agency costs (i.e., costs associated with the manipulation of the outcome). By contrast, a negligence rule, by allocating a portion of law-making power to courts, would counterbalance the distortive effect of politicization.

Second, technocratic law-making entails significant agency costs. As already noted, increased outcome uncertainty leads legislators to enlarge the scope of delegation to agencies, thereby expanding the set of feasible alternatives for agency consideration. This increases outcome agency costs, since the expansion of the regulatory scope of agencies leads to an increasing risk of bureaucratic drift. Delegation in environments characterized by high monitoring costs (often due to information asymmetry, as in the case of risk regulation) increases the costs of reducing agency costs. In response, legislators will set up more constraining regulatory procedures to minimize the risk of bureaucratic drift (McCubbins, 1987; McCubbins et al. 1987).

Courts enjoy comparative advantages in terms of agency efficiency over politics (and bureaucracy). However, such advantages depend on the elasticity of the respective supply curves with respect to external rent-seeking pressures. In fact, while both politics and adjudication supply functions reach a point of inelasticity with respect to influence expenditures, “judicial supply curves become inelastic at much lower prices than legislative supply curves do.” (Merrill, 1997) The differences in the shapes of the political and judicial supply curves reflect the greater “rent-selling” power of politicians. Namely, the adjudication process

61 A vast body of economic literature analyzes the agency problems that plague the political process. Here, I briefly mention only those that are specifically related to the area of product safety.

62 Epstein (1982) that emphasizes the presence of “institutional barriers to effective wealth redistribution through the manipulation of common law rules”.

63 Rent-offering power is the lawmaker’s ability to satisfy rent-seekers’ demands by influencing the quality of the legal outcome to swing in a preferred direction. An approximate measure of
reaches a limit with regard to the capacity of supplying legal change and accommodates rent-seeking pressures at lower levels of influencing expenditures.\(^{64}\)

In environmental settings, in which there appear to be unusually high incentives for pressure groups to engage in rent-seeking activities, two instruments are available to mitigate agency costs. One instrument involves moving to a negligence rule, thereby allocating greater law-making activity powers to judges and exploiting the advantages associated with the elasticity differential between the political and judicial supply curves.\(^{65}\) The negligence rule has the potential to reduce deadweight losses by diminishing the magnitude of influence expenditures sustained under by stakeholders as effect of rent extorsion by politicians. The second agency-cost-reducing strategy could involve lessening the strictness in the application of the principle of stare decisis. This suggests that, in contexts with high rent-seeking pressures, if the conditions associated with the informational advantage of strict liability are lacking (e.g., homogeneity of legal demand), the negligence rule is likely to be the “process efficient” rule. By comparison, if the demand is homogeneous and frequent and the incentives to engage in rent-seeking activities are high, the decision between the negligence rule and strict liability will depend on the relative intensities of the two counterbalancing effects (i.e., the information cost reducing effect of strict liability vs. the agency information cost reducing effect of negligence).

Generally, private legal ordering suffers from rent-seeking pressures and related risks of norm manipulation. However, in the area of product safety, the agency costs associated with private law-making are mitigated. First, the reputational element is intensified by the seller-customer relationship between consumers and firms that underlies the demand for product safety. Litigation cases involving product liability receive significant attention in the media, especially when they concern widely sold products (Klein & Leffer, 1981). Moreover, informational

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\(^{64}\) Epstein (1982) emphasizes, with respect to the common law system, the presence of “institutional barriers to effective wealth redistribution through the manipulation of common law rules”.

\(^{65}\) The elasticity differential between political and judicial supply curves has two important implications in terms of agency costs. First, when the supply curves reach the point of inelasticity, the influence curves of opposing interest groups become identical. At that point, adjudication becomes unresponsive to any increase in the level of influence expenditures; that is, no group is capable of enhancing its influence power (I assume here that all groups have reached the level of influence expenditures at which the supply curve becomes inelastic). Second, from the aggregate standpoint, when the relative influence powers of pressure groups are neutralized, the amount of resources invested in influence expenditures constitutes a deadweight loss for society.
and reputational cascades may quickly induce changes in the public’s perception of risk. Second, monitoring costs are lower because of the large number of consumers involved; thus, wrongful conduct is more likely to be detected. Third, the presence of common regulatory interests among consumers facilitates their coalescence and coordination. This is confirmed by the increasing role played by consumer associations in the policy-making process. All of these environmental conditions facilitate the functioning of private regulatory systems aimed at mitigating the opportunistic behaviors of manufacturing industries.

4.2.3. Adaptive Efficiency

To provide the right signals to firms, the expected costs of legal liability must be *predictable*. Predictable product liability rules increase deterrence by lowering the costs of appreciating the legal consequences of behaviors. At the same time, product liability rules must adapt to changes in the demand for product safety associated with technological innovation. The process efficiency analysis poses the question of which institutional law-making mechanism is best able to deal with the trade-off between predictability and adaptivity.

*Predictability: Strict Liability versus Negligence.* First, from a predictability standpoint, strict liability appears suited to providing a more stable legal regime. By simplifying the grounds on which cases are decided, strict liability provides a clearer definition and a strict enforcement of property rights, thereby generating a certainty-enhancing effect.  

Observe, however, that it can be said that strict liability strictly enforces property rights only if factual causation is the criterion for the imputation of legal liability (Rizzo, 1980). If factual causation (i.e., the question of who has caused the damage) is regarded irrelevant, as in the conventional perspective,  

than the judge is entitled to allocate liability on the basis of output-oriented efficiency criteria, which depend on several difficult-to-measure (and, therefore, hard to predict) quantitative relationships.

*Predictability: Sources of Law.* The choice of the source of law also has implications in terms of legal certainty. Some scholars have maintained that scheduled damages and capped damages could increase stability and enhance legal certainty in the application of product liability rules (Danzon, 1992). However, the process efficiency analysis suggests that legal predictability is a function of the quality of the law-making process, rather than of the formal characteristics of the legal

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66 Countearguments can be found in Treblecock (1989).

67 From a conventional law and economics standpoint, in case of negative externality, the identification of the efficient allocation of property rights is independent of the issue of material causation (“who causes the damage”). It rather depends on the identification of the most valued use of the property right (“who values the property right the most”).
outcome. Capped or scheduled damages improve the precision of the written rule. However, legal certainty remains impossible to achieve through the legislative process because legislators’ incentives to change or maintain existing laws are highly volatile and dependent on the balance of power among competing contingent interest groups.

Adaptivity: Strict Liability versus Negligence. The promulgation of legal rules by a centralized lawmaker provides a focal point around which people can coordinate their compliance decisions (Ribstein, 1992; Gillette, 1998). The enactment of standards of behavior that are binding on the whole of the community can support a mass migration to a new Pareto-superior legal equilibrium by reducing the fear of a solitary transition, thus allowing for a “simultaneous movement” to a superior legal regime. In this respect, a regime of strict liability, combined with the centralization of the law-making process (either judicial, administrative, or political) might favor legal change when high information adoption costs impair collective migration of manufacturers to more efficient standards of behavior.

On the other hand, due to high levels of information and agency costs, centralized responses to the demand for legal change are often slow to emerge (whether in courts, legislatures, or administrative agencies). Further, centralized law-makers do not internalize the benefits or (most of the) costs of enacted legislation—a reality that contradicts an essential condition of efficient legal change. Epstein (1998) vividly summarizes this point: “The centralization of power has the same consequences here [i.e., in a strict product liability regime] that it has in other area of government regulation. It leads to a legal regime that is unresponsive to changes in demand and technology.”

Adaptivity: Sources of Law. The analysis of the sources of law provides further insights. Political law-making faces high resistance costs. In fact, the prospective nature of enacted rules imposes a non-incremental direction on legal changes and a consequent larger resistance on the part of losers. Resistance arises, in particular, as an effect of the impact of a new product liability regime on

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68 Due to network externalities, individuals’ expected benefit from transiting to a new legal regime depends on the number of people who will adopt it. Efficiency requires that the number of people who adopt the new rule positively affect the benefit of belonging to the new legal network, to the point that the benefits exceed the transition costs.

69 Uniform top-down legal supply systems suffer from informational disadvantages, especially when the supply of law 1) depends on widely dispersed factual knowledge or 2) requires an exploration of innovative legal solutions. By comparison, diversified bottom-up law-making processes ensure a more efficient use of the dispersed information and generate innovative legal solutions as a result of parallel experimentation processes.
products previously placed in the stream of commerce (e.g., many durable or capital goods have long-term risky effects).

Courts enjoy strategic political advantages in terms of adaptive efficiency. First, as already noted, the judicial supply of law becomes inelastic at lower levels of influence expenditures, thereby causing a leveling of the playing field. This proves crucial in the area of product safety, which is usually characterized by strong asymmetries in influencing power between consumers and producers. Second, the fact-specific and retrospective nature of judicial decisions enables judges to lower the political visibility of legal changes, thereby lowering the level of resistance costs. Furthermore, the incremental nature of judicial legal change enables individuals to make more accurate estimations of the expected costs of future courses of action. It also reduces the prohibitively high marginal information costs that the synoptic approach postulated by rational choice theory would entail.70 Furthermore, proceeding through marginal adjustments reduces the risk of errors generated by outcome uncertainty (Sweet, 2002). The preceding considerations might explain why the evolution of the regime of product liability in the U.S. has been, foremost, a creature of judicial action and has moved in the direction of shifting the burden of loss from producers to consumers (Epstein, 1988; Priest, 1991).

However, it must be recognized that judicial decision-making is affected by cognitive biases that affect its ability to properly assess the risk associated with products.71 Therefore, the improved ability of courts to promote legal change, if combined with environmental settings (as outcome uncertainties) that emphasize these cognitive limitations, might ultimately exacerbate outcome inefficiency. Discussing the prominent role of judicial action in the area of product liability,

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70 In synoptic decision-making, all the information relevant to the decision is gathered and evaluated in light of all of the relevant goals. These goals are clearly identified ex ante and weighed according to the decision-maker’s values and preferences, which are also clearly identified and prioritized. Every available, rationally conceivable, alternative policy is considered, and the consequences of each possible alternative are weighed according to the identified values, preferences, and goals. By contrast, incremental decision-making begins with a consideration of the status quo, rather than an assessment of every policy alternative. Importantly, the status quo is generally maintained until an existing policy fails, which triggers the need for change and a search for alternatives. Only a restricted number of alternatives is examined, and only a limited range of consequences is weighed. Finally, decisions are continuously adjusted to the feedback generated by the regulatory environment resulting from previous marginal changes.

71 A number of experimental studies have documented those shortcomings in jury behaviour that discourage the introduction of new products (and novel risks). For example, Moore & Viscusi (1991) provide empirical findings supporting the hypothesis that novel hazards are hit harder than more familiar risks because courts and jurors tend to award larger damages in cases of novel risk-related injuries...
Epstein (1988) observed: “[…] all doctrinal innovation has come from the courts, where the technical lags and information deficits are at their highest.”

Most law and economics literature justifies judicial or regulatory intervention in the area of product safety based on the failure of voluntary transactions (Spence, 1977; Epple & Raviv, 1978; Polinsky & Rogerson, 1983; Geistfield, 1995). However, the environmental setting generating the demand for safety provides incentives for the emergence of private legal orderings aimed at mitigating the opportunistic behaviors of manufacturing industries. Furthermore, as has been already noted, private legal orderings enjoy relative advantages in environments characterized by technical complexity and outcome uncertainty, in which the identification of efficient standards of conduct requires the specialized knowledge possessed by economic actors. Interestingly, greater technical complexity (and, thus, greater need for de-centralized sources of information) emerges in more concentrated markets—that is, those markets in which the potential for the self-correction of private markets through self-regulation is stronger (Ramseyer, 1996).

4.3. Summary

The discussion of product safety has exemplified how process efficiency analysis can complement the conventional output-oriented economic approach to legal issues. First, conventional law and economics explains the choice between strict liability and negligence based on the costs and incentives faced by potential injurers and the potential injured. By contrast, process efficiency analysis suggests that this choice is better explained in terms of the impact on law-making costs. In fact, strict liability increases the uniformity and scope of the application of the law, thereby accentuating the ex-ante centralized dimension of law making. In terms of information efficiency, strict liability proves efficient when the demand for law is highly homogeneous and frequent. In addition, when both aggregate frequency and frequency per actor are relatively high, the relative advantages of strict liability in terms of lower information cost are magnified. In short, a move from negligence to strict liability intensifies the economizing effect associated with ex-ante centralization by increasing the uniformity of the supply and breadth of the scope of the law.

72 The insistence by the majority of law and economics scholarship on the centralized form of intervention is a form of Nirvana fallacy: The imperfection of the market is per se sufficient to justify a call for other idealized sources of law. By contrast, a careful process efficiency analysis requires a comparative investigation of the relative abilities of alternative law-making mechanisms to improve efficiency.
Second, with respect to agency efficiency, a regime of strict liability is likely to increase agency costs both in terms of rent-seeking costs and outcome agency costs; conversely, a regime of negligence allows for decreased agency costs due to the advantages of adjudication in terms lessened rent-selling power. Process efficiency analysis illuminates a trade-off between information costs and agency costs, which is generally overlooked by conventional output oriented analysis. Finally, with regard to adaptive efficiency, a regime of strict liability is likely to slow the responsiveness of the law to changes in legal environments.

Third, and perhaps more importantly, process efficiency analysis identifies a number of institutional variables whose impact in terms of efficiency is far more profound than the move from negligence to strict liability. The effect of changes in the degree of centralization in law-making institutional design is likely to dominate the effects of changes in the regime of liability. A move from a negligence rule to a strict liability regime exerts different impacts on the law-making cost structure (at both the process and the output level) depending on the overall organization of the sources of law. For example, a regime of strict liability enforced in the context of a highly decentralized system would likely generate lower agency costs than a negligence rule applied through a highly centralized adjudication system. This is because the effects of decentralization (a decreased return from rent seeking and decreased exit option costs) would dominate the effects of a move from negligence to strict liability (reduced uniformity and width of the scope of the law).

Fourth, conventional law and economics tends to overlook the choice of the institutional mechanisms that are adopted to define the legal standard of care. For example, the traditional debate on ex-post tort liability versus ex-ante safety standards is output-oriented in that it focuses on the incentive structure faced by potential injurers and injured. This perspective tends to miss the important understanding that the ex-ante and ex-post dimension of law making affects both the structure of law-making costs and the content of alternative classes of rules due to the differences in alternative sources of law in terms of information, agency, and adaptive efficiency. On the contrary, as repeatedly emphasized, process efficiency analysis illuminates the relative advantages and disadvantages in terms of the efficiency of courts, legislatures, administrative agencies, and private organizations.

Process efficiency illuminates the importance of institutional choice in those areas where riskiness and outcome uncertainty are relatively high. In these cases, the choice of the institutional decision-making mechanism has a dramatic impact on the liability regime. The choice of the law maker is probably more salient in determining the efficiency of the law than the choice between strict liability and
the negligence rule. Process efficiency analysis suggests that under certain conditions, shifting portions of law-making powers to private legal orderings might generate significant efficiency advantages in tailoring the regulatory intervention to redress the informational failures of the unregulated market.

The Japanese product liability system, which was in force until 1995, represents a significant historical example of a nongovernmental product liability system. Until 1995, product liability in Japan was formally subject to a general negligence regime. Despite this form of legal regime, many Japanese firms had incentives to offer insurance coverage as a signal to buyers of the quality and safety of their products and agreed to be subject to a regime of strict liability. The enforcement mechanism was based on a centralized public authority, but the creation of the liability regime was activated by the spontaneous choices of manufacturing industries (Ramseyer, 1996).

In conclusion, process efficiency analysis provides a different perspective on the three issues mentioned above and also reconsiders their actual relevance relative to the more general organizational framework of the sources of law. As to issue 1, the move from negligence to strict liability is viewed as one that increases the uniformity and scope of the application of the law, thereby affecting the structure and magnitude of law-making costs. Issue 2 is misplaced; the question is not whether the market could efficiently regulate the area of product safety but rather which of the available institutional law-making alternatives enhances efficiency in the area of product safety depending on the specific characteristics of the demand for safety. As to issue 3, the choice between ex-post tort liability or ex-ante safety standards depends on the structure of law-making costs (with regard to specific objects of regulation) rather than on the incentives of relevant actors at the margin.

5. Conclusions

I have investigated several issues in this paper. First, I have argued that an output bias underlies conventional law and economics methodology. The structural features of the legal environment contradict, in many important respects, the assumptions underlying conventional models. To overcome these shortcomings, this paper has argued that the efficiency of the law is better explained as a function of the institutional and structural variables that affect the law formation mechanisms (rather than the allocation of legal entitlements insulated from the law-making process). Efficiency is not an objective property of the outcome independent of the process; rather, it depends on the ability of the law-making process to embody, in a cost-effective manner, the general consensus of all the people concerned. Individuals consent to the “process-outcome relationship”
rather than to an idealized output insulated from the law-making process. They choose the best possible process–outcome ratio: the one that enhances their own welfare while minimizing the costs of reaching consensus, under the constraint of the preferences of others and the conditions of the status quo. The outcome attained is not “optimal” in the standard Paretian sense but is “optimally” produced.

Second, to enable the assessment of alternative law-making mechanisms, I have introduced the notion of process efficiency. The law-making process is efficient if there is no alternative institution that does better across the circumstances in which it actually operates in producing legal rules such that each member of society is enabled to enhance his or her own welfare. The comparative assessment of alternative sources of law is based on the structure of the transaction costs associated with each law-making mechanism under changing environmental settings. For this purpose, I have proposed a unified taxonomy of law-making costs based on the three components of process efficiency: information efficiency, agency efficiency, and adaptive efficiency. The analysis of the variables affecting law-making costs is organized for each category of costs along the lines of a supply and demand model. The supply side summarizes the features of the law-making process that are predicted to mostly affect the structure of law-making costs. The demand side summarizes the exogenous conditions of the regulated environments. Each category of cost includes demand side costs, supply side costs, and an “outcome” dimension (see supra figure 2). Thus, the outcome is not eschewed by the efficiency analysis; rather, it is conceptualized as a function of the incentive structure underlying the law-making process.

Third, the discussion on product safety has illustrated more concretely how process efficiency analysis can complement the conventional output oriented economic approach to legal issues. The move from negligence to strict liability is viewed as one that increases the uniformity and scope of the supply of law, thereby affecting the structure and magnitude of law-making costs. Generally, strict liability is justified when the demand for safety exhibits high levels of both homogeneity and frequency of the legal demand. There is a trade-off between information and agency costs. The optimization of this trade-off is related to the degree of centralization in the overall organization of the sources of law and with the degree of strictness of the doctrine of precedent. The choice between ex-post tort liability and ex-ante safety standards also affects the structure of law-making costs. In this respect, process efficiency analysis illuminates the relative advantages and disadvantages of ex-ante centralized processes versus ex-post decentralized processes in the definition of the optimal standards of care. It also emphasizes the relative advantages of private legal orderings in the creation of
legal rules in areas characterized by technical complexity, outcome uncertainty, and relatively high rates of change.
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