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**EVOLUTION OF LAW: DYNAMIC
REGULATION IN A NEW INSTITUTIONAL
ECONOMICS FRAMEWORK**

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EVOLUTION OF LAW: DYNAMIC REGULATION IN A NEW INSTITUTIONAL ECONOMICS
FRAMEWORK

BY

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FORTHCOMING IN FESTSCHRIFT IN HONOR OF CHRISTIAN KIRCHNER

ABSTRACT

The literature on New Institutional Economics (NIE) evaluates the relationship between public and private rulemaking in the evolution of law. This paper introduces the concept of dynamic regulation as an optimization process for the learning experience in the NIE framework. Dynamic regulation describes intra- and inter-jurisdictional feedback effects between different public rulemakers and between private and public rulemakers. Dynamic elements in the rulemaking process may increase the availability of relevant information for rulemaking and may improve institutional design.

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I. Introduction

The New Institutional Economics (NIE) studies the development, functioning, and improvement of institutions (Furubotn and Richter 2005; North 1990; Richter and Furubotn 2003; Williamson 1985; Voigt 2009; Kirchner 2007; Coase 1998; Williamson 1979). To the extent that legal rules can be defined as institutions, NIE views rulemaking as part of the evolution of institutions (Kirchner 2011). Popper's piecemeal social engineering, as opposed to utopian social engineering (Popper 1957)¹ provides general guidance for the design of institutions.

Economists have previously described the concept of dynamic regulation in the context of innovation and learning by doing (Lewis and Yildirim 2002), principal-agent and adverse-selection problems (Litwack 1992), continuing regulatory relationships (Baron and Besanko 1984), and regulation of quality (Auray, Mariotti and Moizeau 2011). The largest body of scholarship applies the concept of dynamic regulation in the context of telecommunication markets (van Dijk and Mulder 2005; Bijl and Peitz 2004; Bauer and Bohlin 2008). Dynamic regulation as part of institutional design in the evolution of law has not been systematically analyzed.

This paper introduces the concept of dynamic regulation as an optimization method for institutional design. Building on Christian Kirchner's "interplay between public and private rulemaking in the evolution of law" (Kirchner 2011), the author develops a methodological structure for dynamic regulation from the perspective of New Institutional Economics. After a short introduction in Part I, the author in Part II suggests that dynamic regulation epitomizes Popper's piecemeal engineering as opposed to utopian social engineering. The author outlines NIE's methodological framework as it relates to dynamic regulation and describes dynamic elements via feedback effects in the evolution of law. Part III discusses rulemaking in a dynamic framework and suggests that NIE's distinction between formal and informal rules has an application in a dynamic framework for rulemaking. Similarly, the feedback effect between private and public law can be conceptualized in a dynamic framework as a learning process. Part IV shows how dynamic elements in the learning process can help optimize the learning process for rulemaking in the incomplete contract model. Dynamic regulation may be viewed as part of the organizational culture of rulemaking.

II. Dynamic Elements in the Evolution of Law

Dynamic and anticipatory elements in rules were less topical at the inception of institutional arrangements for rulemaking. Indeed, the institutional infrastructure for rulemaking was geared towards the creation of rules for governing a relatively stable society with less upward mobility and relatively stable economic and market environments. Since then, society and markets have evolved rapidly and are becoming increasingly more complex. The growing number of rule enactments, revisions, and revocations suggests that existing rules and institutional structures for rulemaking are becoming less capable of addressing the rapid pace of change. Financial innovation and the complexities of financial markets require institutional arrangements and a rulemaking

¹ Popper 1957 "... [the] piecemeal engineer knows [. . .] that we can learn only from mistakes [. . .] and he will avoid undertaking reforms of a complexity and scope which makes it impossible for him to disentangle causes and effects, and to know what he is really doing." *Ibid.*

process that continuously adjust to these challenges. In other words, the complexities of today's society and markets may benefit from dynamic institutional arrangements and processes for rulemaking.

1. *Dynamic Regulation in the NIE Framework*

Evolutionary economics provides various approaches to study the evolution of rulemaking (Schumpeter 1911/1987; North 1990; von Hayek 1968; Nelson and Winter 1982). It offers some guidance on the role of dynamic regulation in the evolution of rulemaking.

NIE shares some core assumptions with the neoclassical model, such as methodological individualism, scarcity of resources, and self-interested rational behavior (Furubotn and Richter 2005; Arrow 1994; Mantzavinos 2001). Rulemaking is a strategy used to address the scarcity of resources. In an effort to address the scarcity of resources, individual actors cooperate and coordinate the division of labor with other actors. Enforceable rules optimize actors' coordination and decision-making. The optimization of rulemaking through the use of dynamic elements can be seen as an economizing device that addresses the scarcity of resources.

In contrast to the neoclassical model, NIE emphasizes that information is systematically incomplete (Voigt 2009, 237–38) and that individuals are boundedly rational (Kirchner 2001; Voigt, 22–23; Conslik 1996; Selten 1990; Simon 1957/1982) and act opportunistically (Voigt, 88–89; Furubotn and Richter 2005, 5). Rulemaking under conditions of incomplete information and bounded rationality can lead to suboptimal outcomes that may require rule revision and/or additional rulemaking. This trial-and-error process (Kirchner 2011, 164; Popper 1957, 88) is suboptimal for rulemaking because, rather than increasing the availability of relevant information *ex-ante* (through a dynamic process as proposed in this paper), participating actors acquire the necessary information *ex-post* after rules turn out to be suboptimal. Suboptimal rules necessitate costly rule revisions, retractions, and additional rulemaking.

Building on Christian Kirchner's "interplay between public and private rulemaking in the evolution of law" (Kirchner 2011), this paper introduces the concept of dynamic regulation as an optimization method for institutional design in the NIE framework. The concept of dynamic regulation brings into play a feedback effect between different public rulemakers as well as private and public rulemakers. The feedback effect increases the availability of relevant information for rulemaking. At the same time, the reduction of incomplete information in the rulemaking process enables the rulemaker to modify the next action in the rulemaking process. Rulemaking thus becomes focused on the timeliness and quality of available information. Recognizing the incompleteness of information in the public rulemaking process, the public rulemaker considers additional relevant information that private rulemakers and other public rulemakers or their agents make available. After considering the available additional information, the public rulemaker modifies the next action in the rulemaking process.

Supplementing the rulemaking process with dynamic elements expands the availability of relevant information and increases the public rulemaker's ability to adapt public rules to unknown future states. Public rulemakers no longer acquire the necessary information *ex-post* after rules have emerged as suboptimal, requiring rule revisions, retractions, and additional rulemaking. Rather, the feedback effect between different

public rulemakers and public and private rulemakers increases the availability of relevant information for public rulemaking *ex-ante* in a dynamic process. Dynamic elements in the rulemaking process can thus improve public rulemaking by curtailing public trial-and-error rulemaking.

2. *Feedback Effects*

Dynamic regulation can help improve institutional design via feedback effects. The concept of dynamic regulation in the NIE framework recognizes that feedback effects occur and suggests utilizing these feedback effects as dynamic elements for institutional design. Feedback effects may occur both between outcomes and institutions and between different rulemakers. Rules and rulemaking processes interact and evolve over time. The concept of dynamic regulation suggests that interaction between different rulemakers can create dynamic elements in the rulemaking process. These dynamic elements in turn may create rules that entail dynamic elements and reinforce the dynamic institutional design. Haavelmo describes feedback effects in the evolution of law:

Starting with some existing society we could conceive of it as a structure of rules and regulations within which the members of society have to operate. Their response to these rules as individuals obeying them, produces economic results that would characterize society. As the results materialize they will stimulate the political process in society towards changing the rules of the game. In other words, the results of the individuals in a society responding in a certain way to the original rules of the game have a feedback effect upon these rules themselves. (1997, 15).

The interaction between rules and rulemaking processes and their evolution over time constitute a feedback mechanism between outcomes and institutions. Rules as outcomes are the result of the institutional design of rulemaking and reinforce the institutional design. In other words, existing rules create a feedback effect for the rulemaking process itself. Rules with suboptimal characteristics are the results of institutional arrangements and reinforce suboptimal institutional arrangements and rulemaking processes. Stable and presumptively optimal rules reinforce a rulemaking process with an institutional structure that perpetuates stable elements in rules. Even if institutional arrangements produce optimal governance solutions, these solutions can become suboptimal over time, necessitating rule revision, updating, and revocation. Rules that lack adaptability to future states of the world reinforce institutions and processes that produce suboptimal outcomes.

Adaptable institutions may overcome suboptimal outcomes. The application and adaptability of rules to future conditions depends on the institutions and processes put into place to facilitate rulemaking. Adaptable institutions may utilize the feedback effect between outcomes and institutions to reinforce dynamic elements in the rulemaking process. Rules can be adaptable if institutions and rulemaking processes integrate dynamic elements that produce timely, relevant, and decentralized information for rulemaking. Dynamic elements in the rulemaking process may produce rules that have enduring characteristics and are applicable and adaptable to future states of the world.

3. *Dynamic Regulation as Piecemeal Social Engineering*

Building on Popper's piecemeal social engineering, dynamic regulation as a piecemeal optimization process for institutional design may be viewed as a form of piecemeal social engineering.

Popper distinguishes the piecemeal engineer from the holistic or utopian social engineer (Popper 1957). The holist decides *ex-ante* that a complete reconstruction or reformation of a given regulatory environment is possible. In practice, the holistic approach continuously forces the holistic social engineer to fall back on piecemeal improvisation (Popper 1957, 68).² The centralized planning of the holistic social engineer leads him to engage in unintended actions, which "leads to the notorious phenomenon of *unplanned planning*." (Popper 1957, 69). By contrast, Popper's piecemeal engineer can approach any given regulatory issue with an open mind as to the scope of the required reform:

The difference between Utopian and piecemeal engineering turns out, in practice, to be a difference not so much in scale and scope as in caution and preparedness for unavoidable surprises... Of these two doctrines, I hold that the one is true, while the other is false and liable to lead to mistakes which are both avoidable and grave... I hold that one is possible, while the other simply does not exist: it is impossible. (1957, 69).

Dynamic regulation as a form of piecemeal social engineering is distinguishable from the holistic approach. Rulemakers in a dynamic rulemaking environment approach rulemaking and reform as a dynamic and evaluative process that requires perpetual reexamination of continuously updating information. A presumption of reform feasibility for a given regulatory environment is unnecessary because the feedback effect in dynamic regulation makes ad-hoc decisions obsolete. Dynamic regulation increases the availability of information *ex-ante* before rulemaking and allows decision-makers to continuously evaluate a pending decision on institutional design. Centralized planning is curtailed under dynamic regulation and unintended actions are minimized through the feedback process. Unplanned planning is avoided and the emphasis in institutional design shifts to caution and preparedness. Popper's piecemeal social engineer:

will avoid undertaking reforms of a complexity and scope which make it impossible for him to disentangle causes and effects, and to know what he [the reformer] is really doing [... He] is always on the lookout for the unavoidable unwanted consequences of any reform." (1957, 67). [Finally,] when trying to assess the likely consequences of some proposed reform, the piecemeal technologist must do his best to

² Popper's critique of the holistic approach to social engineering includes a critique of holistic experiments: "(a) [...] *piecemeal experiments* ... are fundamental for all social knowledge, pre-scientific as well as scientific; (b) ... *holistic experiments* are unlikely to contribute much to our experimental knowledge; and that they can be called 'experiments' only in the sense in which this term is synonymous with *an action whose outcome is uncertain*, but not in the sense in which this term is used to denote experimentation as "*a means of acquiring knowledge, by comparing the results obtained with the results expected*" (1957, 85).

estimate the effects of any measure upon the ‘whole’ of society. (1957, 68).

These features of piecemeal social engineering are directly applicable in the framework for dynamic regulation. Because the feedback effects in dynamic regulation allow rulemakers to increase the availability of relevant, decentralized, and timely information for rulemaking, rulemakers can predict unforeseen contingencies and adjust their actions *ex-ante* to avoid complex reforms. Feedback effects and the optimization of information for rulemaking allow the rulemaker to distinguish causes for and effects of rulemaking. Rules are promulgated only after the particularized need for rules has been identified and possible effects on the society at large have been evaluated. Dynamic regulation, thus, enables rulemakers to identify and avoid unwanted consequences.

Another important distinguishing feature of piecemeal social engineering is its private rather than public character (Popper 1957, 67).³ Although dynamic rulemaking includes public elements, its character is largely private. Feedback effects between public and private rulemakers and the use of informal rules allow dynamic regulation to integrate private information and institutions into the rulemaking process. Private rulemakers in the dynamic regulation framework have a comparative advantage over public rulemakers who do not have comparable access to timely and institution-specific information. Consumer choice also plays a role in dynamic regulation and helps to characterize it as private. The largely private character of dynamic regulation in combination with its piecemeal optimization features for rulemaking underscores its affiliation with piecemeal social engineering.

III. Rulemaking in a Dynamic Framework

NIE’s emphasis on the development, functioning, and improvement of institutions (Furubotn and Richter 2005; North 1990; Richter and Furubotn 2003; Williamson 1985; Voigt 2009; Kirchner 2007; Coase 1998; Williamson 1979) makes it necessary to analyze rules within a given institutional context. NIE acknowledges that transaction costs, imperfect information, and bounded rationality influence the rulemaking process (Homann and Kirchner 1995; Furubotn and Richter 2005) and even optimal solutions to regulatory problems can become unstable and suboptimal over time. Experimentation with different rules and observing the results of this experimentation can result in a learning process that can overcome the shortcomings in the rulemaking process and help optimize institutional design (Kirchner, Painter and Kaal 2005; Homann and Kirchner 1995; Furubotn and Richter 2005).

Experimentation and rule revision are necessary elements in the learning process because the requirements for rules and their adaptability to future states only becomes clear when stable and presumptively optimal rules emerge as suboptimal. Rule revision occurs after the actors in the rulemaking process acquire information confirming that the rule is suboptimal. Additional rules are enacted based on the rulemakers’ (often bounded and limited) understanding of necessary improvements for the then-existing rules. Anticipation of future developments does not play a role in this learning process.

³ “Holistic or Utopian social engineering, as opposed to piecemeal social engineering, is never of a ‘private’ but always of a ‘public’ character.” (Popper 1957, 67).

Learning is predominantly seen as learning from mistakes and past experience. Dynamic elements via a feedback effects are missing.

Rulemaking in a dynamic framework is intended to optimize NIE's learning process and address the shortcomings of the rulemaking process via feedback effects in the respective institutional context. In his theory of lawmaking, Christian Kirchner describes feedback effects in the context of private actors' reactions and counter-activities to institutional constraints (Kirchner 1995). Others have described feedback effects in the context of actors' reactions to institutional change (Dethier 1999). Dynamic elements in the rulemaking process can help shift rulemaking away from stable and presumptively optimal rules to more sustainable solutions. Opportunities for integrating dynamic elements into the rulemaking process include: (i) intra-jurisdictional feedback processes such as (i) exchanges and synergies between public rulemakers and regulators, (ii) feedback effects between private and public rulemakers, (iii) inter-jurisdictional feedback processes, (iv) informal rules, and (v) organizational culture.

1. *Formal vs. Informal Rules*

NIE's distinction between formal and informal rules is particularly relevant and useful in the context of dynamic regulation because informal rules can provide dynamic elements in the rulemaking process. Institutions in the NIE framework are defined as general formal or informal rules or sets of general rules, together with their enforcement mechanisms (Furubotn and Richter 2005, Voigt 2009). NIE emphasizes the importance of informal institutions, such as social norms and custom (Voigt 2009). Informal rules as part of a dynamic feedback process can provide relevant information for rulemaking. Parties who are subject to informal rules signal their preferences as well as efficient solutions to the public rulemaker. Informal rules and practices therefore provide additional information that can help modify the actions of rulemakers and improve rulemaking.

Informal rules in the feedback process of dynamic regulation can lead to rulemaking if they are formalized and enforced. Unenforceable rules are generally irrelevant for purposes of economic analysis because they do not provide incentives and sanctions. In the NIE framework, "legal rules without enforcement mechanisms do not qualify as institutions" (Kirchner 2011, 162). Unlike ordinary private ordering, where the formalization of existing informal rules and enforcement mechanisms can be a lengthy process that may not always be finalized, the formalization of informal rules in the dynamic process may happen sooner and is more likely to succeed and be finalized if the informal rules provide relevant information for the public rulemaking process. Feedback effects in dynamic regulation allow public rulemakers to receive a direct benefit from the formalization of informal rules and the additional information it produces for the public rulemaking process.

2. *Private vs. Public Rulemaking*

Christian Kirchner has described the interplay between public and private law in the evolution of law (Kirchner 2011). The distinction between public and private rulemaking is relevant and useful in a dynamic framework for rulemaking because the feedback process in dynamic regulation involves different public rulemakers as well as private and public rulemakers.

Private rulemaking refers to rulemaking by private organizations, standard setters, and private contracting parties. By contrast, public rulemaking generally refers to rulemaking by the legislative bodies and courts in any given jurisdiction. Public rulemakers rely on stable and presumptively optimal rules because they lack necessary, comparable, de-centralized, and institution-specific information.⁴ Private rulemakers have a comparative advantage over public rulemakers because public rulemakers do not have comparable access to timely and institution-specific information. While public rulemakers are limited as to the information they can obtain to enact rules, private rulemakers can work with and utilize decentralized information continuously. This enables private rulemakers to react in a timely fashion to emerging, decentralized, and institution-specific information.

Dynamic regulation can facilitate the feedback process in which the private rulemaker interacts with the public rulemaker.⁵ Because private rulemakers have access to relevant, de-centralized, and institution-specific information, the feedback process benefits from the interaction between public rulemakers and private rulemakers. The feedback process between public and private rulemakers increases the availability, timeliness, and quality of information available to the public rulemaker. This induces and supports the learning process for the public rulemaker. The feedback process between public and private rulemakers therefore enables the public rulemaker to react when the latest emerging information becomes available. Through this feedback process and interplay between public and private rulemakers, dynamic regulation can create incentives for a learning process for the public rulemaker.

The feedback process between different public rulemakers can also improve public rulemaking. For instances, while the competition between legislators does not necessarily provide a feedback process in the sense of cooperation, (Kirchner, Painter and Kaal 2005; Carbonara and Parisi 2008; Kerber 2000; Heine and Kerber 2002), it can nevertheless provide incentives for public rulemakers to consider regulatory solutions from other jurisdictions. Because the competition between legislators requires public rulemakers to meet consumers' and legal addressees' quality expectations and preferences, the competition between legislators adds a dynamic and market-driven element with a feedback effect to the rulemaking process.

Consumer choice is a dynamic process because public lawmakers in a given jurisdiction can utilize the decentralized information⁶ made available when a critical mass of consumer opt-outs signals that a different rule may be optimal. The consumer opt-out of existing rules creates a feedback effect for the public rulemaker and triggers a modification of the public rulemaker's next action in the rulemaking process. As a result, public rulemakers have improved access to relevant information, enabling them to optimize public rulemaking. Because the dynamic element in the competition between legislators originates predominantly from consumer choice and competition with other jurisdictions, public rulemakers may be able to optimize their rules by considering

⁴ Regulators may conduct congressional studies to minimize their informational disadvantage. However, these studies mostly follow after Congress identified particular concerns in the regulatory structure or in financial markets. These studies may not provide real-time and relevant information before regulatory action by public rule-makers is necessary.

⁵ On the interplay between public and private rulemaking see Kirchner 2011.

⁶ Decentralized information in this context refers to relevant information from non-native jurisdictional sources that become an integral part of the rulemaking process.

dynamic elements in the intra-jurisdictional rulemaking process.

The feedback effects that result from interactions between public rulemakers' agents also add a dynamic element to regulation. Unlike the feedback effects between private and public rulemakers, the information exchange between agents of public rulemakers, such as regulators, will not necessarily involve decentralized information. Instead, information exchange, cooperation, and synergies between different regulators facilitate the feedback effects and add dynamic exchanges to improve public rulemaking.

IV. Dynamic Regulation in the Incomplete Contract Model

NIE's incomplete contract model recognizes that opportunistic behavior, transaction costs, and bounded rationality (Williamson 1996, Furubotn and Richter 2005) undermine comprehensive contracting (O'Kelley 2012; Williamson 1991). Because it is too costly for contracting parties to anticipate all contingencies and to agree to necessary contract adaptations in advance (Williamson 1985), the contracting parties in the incomplete contract model do not specify all of their respective obligations under the contract *ex-ante*. Parties rely on control rights to minimize opportunistic behavior and postpone the specification of the exact parameters of their respective duties until they have accumulated sufficient relevant information to make a decision (Richter 1989).

Several factors can affect the degree of contractual incompleteness. The cost of contracting and the ability of contracting parties to anticipate opportunistic behavior determine the degree of contractual incompleteness (Hart 1995). The availability, timeliness, and quality of information also influence the degree of contractual incompleteness. This paper suggests that contractual incompleteness can be lowered through dynamic processes within the rulemaking process in the incomplete contract model. Through the feedback process, dynamic elements help to improve the availability, timeliness, and quality of information.

1. Optimizing the Learning Process

NIE's assumptions of methodological individualism, self-interested behavior, scarcity of resources, incomplete information, and bounded rationality are consistent with and support the concept of rulemaking as a learning process (Kirchner 2011). According to incomplete contract theory, the rulemaking process is a learning process facilitated by incomplete contracts (Kirchner 2011; Furubotn and Richter 2005). Incomplete contracts can optimize the rulemaking process (Kirchner 2011; Furubotn and Richter 2005; Macneil 1974; Hart and Moore 1999; Schanze 1991/1993/2005) and overcome unintended side-effects and suboptimal rules that result from bounded rationality and incomplete information (Kirchner 2011; Korobkin and Ulen 2000; Mantzavinos 2001). The learning process in the incomplete contract model is built into the contract and seen as a form of experimentation by way of observation (Kirchner 2011). Participants in the learning process make decisions as part of a search process (Kirchner 2011, 164). Incomplete contract theory therefore lowers incomplete information by leaving open provisions that require additional information (Kirchner 2011, 168). Decisions are made when sufficient information becomes available.

Rulemaking is inexorably tied to the economic, political, and transactional circumstances at the time of the enactment of the rule. These circumstances will inevitably change. Even optimal solutions to regulatory problems can become unstable

and suboptimal over time. Rule revisions and/or additional rulemaking become necessary. Through the learning process, rulemaking in the incomplete contract model can address the inefficiencies of trial-and-error rulemaking (Kirchner 2005, 164).⁷ Rather than engaging in suboptimal trial-and-error rulemaking under conditions of incomplete information and bounded rationality, rulemaking in the incomplete contract model is postponed until rulemakers have sufficient information. Experimentation, observation, and rule revision evolve into a continuous learning process that is intended to improve the quality of rulemaking and optimize the resulting institutions and governance structures.

The learning process in incomplete contract theory can be improved. Experimentation with different rules, rule revision, and additional rulemaking create significant transaction costs⁸ and postponing rulemaking until sufficient information is available may not always be possible or desirable. Financial crises throughout history (Rheinhardt and Rogoff 2011) have demonstrated that rules are mostly enacted, especially in the context of financial regulation, when it is politically opportune (Coffee 2012), not when appropriate information for rulemaking is available. A classic collective action problem controls rulemaking. In the competition to shape rulemaking, smaller and better organized special interest groups usually dominate latent groups (such as dispersed investors) (Olson 1965). During and after crises, however, political entrepreneurs assume the transaction costs of organizing the otherwise disinterested latent groups so as to temporarily overcome the predominance of special interest groups in the rulemaking process (Ostrom 1990). The collective action problem and the cyclical nature of rulemaking (Coffee 2012) are likely to persist, making alternatives and supplements to existing institutional designs for rulemaking even more relevant. Dynamic regulation can supplement existing institutional designs for rulemaking, help counteract negative consequences of cyclical rulemaking, and improve corresponding institutional designs.

Improvements to the learning process in the incomplete contract model would help facilitate rulemakers' access to relevant and timely information *ex-ante*, if and when it is needed, and before financial crises and political expediency enable and require rulemaking. Dynamic regulation in the incomplete contract framework improves the rulemaking process by providing relevant and timely information through a dynamic feedback process before rulemakers finalize rules. Dynamic regulation via feedback effects may be seen as part of a search process that facilitates the learning process in the incomplete contract model (Kirchner 2011). The feedback process in dynamic regulation increases the availability of relevant information. Contracting parties in the incomplete contract model only postpone the specification of obligations if the feedback process in the dynamic framework did not generate sufficient information. Should sufficient information be available,⁹ contracting parties do not have to postpone decision-making, and contractual incompleteness can be lowered.

⁷ Christian Kirchner describes the rulemaking process in the incomplete contract model as "incomplete contracts in which specification of obligations of the contracting parties is postponed to a point in time when they have sufficient information to make the decision." *Ibid.*

⁸ Systemic risk and the economic consequences of financial crises in the past suggest that the cost of rule revision and experimentation are substantial, especially if the existing rulemaking process does not protect against systemic shocks and financial crises.

⁹ The sufficiency of information in this model, if assessed by rulemakers alone, could lead to suboptimal results. Path dependencies may lead decision-makers to believe they control sufficient information for rulemaking when they in fact do not. Because the feedback effect is intended to perpetually reinforce itself,

2. *Organizational Culture*

Organizational culture can be defined as the mutually-reinforcing behavioral expectations of the members of an institution (Furubotn and Richter 2005). Under incomplete contract theory, incomplete information and unforeseen contingencies make incomplete contracts necessary because it is impossible for contracting parties to foresee all possible contingencies (Furubotn and Richter 2005). In contrast with general incomplete contract theory, the literature on organizational culture views unforeseen contingencies and contractual incompleteness as remediable.¹⁰ Kreps points out that parties may not engage in certain transactions and transactions may be too expensive if the participants cannot rely on an efficient and equitable adaptation to unforeseen contingencies (1990, 92). At the same time, parties in the incomplete contract model cannot adapt to unforeseen contingencies because they cannot specify *ex-ante* how those contingencies will be met (Kreps 1990, 93). Kreps's model suggests that organizational culture can provide a remedy for dealing with the problem of unforeseen contingencies and contractual incompleteness. Because of behavioral expectations in the institution, hierarchical inferiors can anticipate how an organization will react to circumstances as they arise (Kreps 1990, 126).

By expanding Kreps's model of organizational culture and applying it to the rulemaking process, dynamic regulation also takes issue with the broad scope of contractual incompleteness and delayed decision-making in the incomplete contract model. Dynamic regulation can supplement and enhance the anticipatory properties of organizational culture in the context of rulemaking. Behavioral expectations in organizational culture allow actors to anticipate how an institution will react to changed circumstances. Similarly, dynamic regulation allows rulemakers in the incomplete contract model to adapt to unforeseen contingencies through a feedback effect that improves the availability and quality of information for rulemaking *ex-ante*. Dynamic regulation helps rulemakers anticipate how institutions will react to circumstances as they arise because the feedback process provides decentralized, timely, and institution-specific information for rulemaking. Rules are adjusted *ex-ante* in anticipation of future contingencies. The broad scope for contractual incompleteness and delayed decision-making as stipulated by the incomplete contract model are necessary only if the feedback effect did not produce sufficient information for rulemaking. Defining the parameters for measuring the sufficiency of information in the rulemaking process with and without dynamic elements is beyond the scope of this paper. Additional research may be needed in this context.

The literature on organizational culture suggests that overcoming unforeseen contingencies is possible via a generally applicable and simple principle or focal point (Kreps 1990, 93). The focal principle of organizational culture can provide some

the availability of information generated through this process cannot be optimized at any given point in time.

¹⁰ "While a particular contingency may be unforeseen, provision for it is not completely impossible." (Kreps 1990, 117).

indication as to when agreements may be broken as a result of unforeseeable contingencies (Furubotn and Richter 2005, 179):¹¹

[I]t should be feasible to establish some sort of principle or rule that has both wide applicability and sufficient simplicity to be interpretable readily by all affected parties” (Furubotn and Richter 2005, 178).

[The principle] says how things are done, and how they are meant to be done in the organization. Because it will be designed through time to meet unforeseen contingencies as they arise, it will be the product of evolution inside the organization and will be influenced by the organization’s history [...].

(Kreps, 1990, 92-93)

Even though one cannot think through the contingencies, one might be able to predict what principle will be good at meeting them. Principles are better or worse depending on how they adapt to the contingencies that do arise. (Kreps 1990, 128).

Dynamic regulation is a method for improving the availability and quality of information for rulemaking. The feedback process in dynamic regulation may be viewed as a focal point or principle for rulemaking. The feedback effect may enable rule makers to provide for contingencies *ex-ante*. Dynamic regulation as a focal point or principle enables rulemakers to adapt to contingencies if and when they arise because the feedback effect provides relevant, timely, decentralized, and institution-specific information for rulemaking. The feedback effect in dynamic regulation helps rulemakers adopt rules that are applicable and adaptable to future states of the world.

Certainty in rulemaking can increase when the rulemaker’s learning process takes place in the context of dynamic regulation. Dynamic regulation can provide relevant, decentralized, timely, and institution-specific information via the feedback process *ex-ante* before rulemakers finalize rules. Because the information is provided *ex-ante* via a feedback process, the certainty for all involved parties is not affected *ex-post* after rules became effective. By increasing the availability of information *ex-ante*, dynamic regulation lowers unforeseen contingencies in the rulemaking process and helps lower contractual incompleteness while at the same time maintaining certainty in the rulemaking process.

Organizational culture facilitates cooperation among equals (Furubotn and Richter 2005, 179)¹² and can facilitate successful coordination among different actors (Calvert 1995, 244).¹³ Furubotn and Richter suggest that this cooperation via organizational culture takes place predominantly among private actors (Furubotn and Richter 2005, 179). The feedback effect in dynamic regulation as part of the organizational culture of

¹¹ According to Furubotn and Richter, “the focal point interpretation of corporate culture is able to give some indication of when an agreement will be broken as a consequence of unforeseeable contingencies” (2005, 179).

¹² Behavioral expectations within institutions may not only enable hierarchical inferiors in hierarchical organizations to anticipate how an organization will respond under changing conditions (Kreps 1990, 126) but may also lead to cooperation among equals (Furubotn and Richter 2005, 179).

¹³ “Recognizing or creating focal points is one important way in which the players can successfully coordinate” (Calvert 1995, 244).

rulemaking may allow cooperation and coordination not only among private actors but also among public rulemakers and between private and public rulemakers.

V. Conclusion

Rulemakers can integrate dynamic elements into the rulemaking process in many different ways, including (i) intra-jurisdictional feedback processes such as exchanges and synergies between public rulemakers and regulators or (ii) feedback effects between private and public rulemakers, (iii) inter-jurisdictional feedback processes, (iv) informal rules, and (v) organizational culture. Other feedback processes that contribute to the evolution of law may already exist and/or emerge over time. The combination of these feedback processes can result in a sequence of mutually-reinforcing, information-enhancing events. This process can help minimize *ex-post* trial-and-error experimentation with stable and presumptively optimal rules after previous stable rules have emerged as failures. *Ex-ante* experimentation (before the enactment of rules) becomes the focal point of rulemaking. The feedback effect improves the availability and quality of information for rulemaking *ex-ante*, helping to preempt suboptimal rules. Anticipation of future contingencies and adaptability to such contingencies become part of the rulemaking process.

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