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Invited Reaction

Putting Theories of the Firm in Their Place: A Supplemental Digest of the New Institutional Economics

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Introduction

The decision by this journal's editor to invite such a paper from Professor Royer marks a significant milestone in the development of economic thought. It indicates the growing importance and influence of the paradigm in economic theory and analysis that is commonly referred to as either neo- or new-institutional economics. We are greatly encouraged by this advance and welcome this opportunity to respond to the paper as well as to further acquaint the reader with the depth and richness of this relatively new literature.

This approach to economics is having tremendous impact not only in the study of cooperative organizations and collective action, but also throughout economics and into such disciplines as political science, law, business (finance, accounting, organizational theory and strategy), history, sociology, and anthropology.[1] Because this literature is so vast in its application and implications, we will limit our response to Royer's review of the neo- and new-institutional theories and leave his discussion of the application of these theories to cooperative organizations for the companion response by Iliopoulos and Cook.

The major shortcoming of Royer's article is its narrow focus on the subset of the new institutional literature related to firm-level organizational structure. Given his interest in evaluating the application of these theories to the study of cooperative organizations, this is an understandable focal point. However, to characterize the entirety of neo- and new institutional economics using only this subset fails to reflect both the importance and richness of this theoretical framework's contribution to economic thought. Moreover, even the reviewed material was poorly represented in terms of its analytical power and its ability to generate empirically testable hypotheses.

Rather than responding to the theoretical review in a point-by-point fashion, we will attempt to provide an alternate summary that somewhat parallels the original paper's outline and offers specific reactions in that context. We will begin with a clarification of the terms "neo- and new institutional economics," which will include a discussion of the

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margins on which these theoretical frameworks expand upon neoclassical theory. Next, we will offer a very brief glimpse at the macro as well as micro applications of these theories. Finally, we will focus on the specific theories relating to organizational structure discussed in Royer's article. Since there is far more to describe than can be condensed into the available space, we will just offer hors d'oeuvres of the several topics in this literature and rely on references to major writings in this area to satisfy the reader's appetite for more detail.

Is it Neo- or New Institutional Economics?

The loose interchangeability of the terms neo- and new institutional economics creates some confusion because the two names do have distinct meanings in the literature (Eggertsson 1990, 6). In fact, as we will explain below, the nature of that distinction helps delineate the different margins on which the two literatures expand the traditional neoclassical model. However, they are closely aligned, and one could well argue that neo-institutional economics is a more narrowly constrained subset of new institutional theories. Hence, we will refer to this literature holistically as new institutional economics (NIE) except where the differences are important for the reader's understanding.

The Backdrop: Neoclassical Economics

To appreciate these terms and the theoretical frameworks they describe, it is useful to start with the traditional neoclassical model. Professor Royer begins with the neoclassical theory of the firm, which he describes as a model of profit maximizing behavior subject to a cost function and to demand constraints. Underlying this model, suggests Royer, are the assumptions of zero transaction costs, zero adjustment costs, fully allocated and privately held resources, and an exclusive concern for pecuniary incentives. He then asserts that "[d]issatisfaction with the neoclassical theory of the firm focused on the assertion that firms are profit maximizers and therefore operate at least cost."

While the assumption of profit maximization did give rise to criticism of the neoclassical model of the firm, the more fundamental criticism of the neoclassical paradigm is that it simply does not explain why these production organizations exist in the first place. Nor does it describe in any meaningful way how the resources within these organizations are employed, allocated, and motivated to achieve the profit maximization objective. The neoclassical firm is simply a black box into which inputs flowed and out from which product appeared on the market (Coase 1937, 1992; Demsetz 1995). Quite simply, the neoclassical theory *of* the firm does not provide a theory *for* the firm.

This critique of neoclassical economics extends beyond the theory of the firm to the study of markets more generally. Neoclassical theory has provided a tremendously powerful and useful understanding of the pricing system. The fundamental value of that knowledge in understanding human choices is difficult to exaggerate. However, neoclassical economics is ill suited to answering questions about when, why, and how markets evolve; about the institutional infrastructure required to support market activity; and about the structures of the organizations involved in market activity. To further advance our understanding of human choice, we must begin to reexamine the assumptions upon which the neoclassical model is built.

Neo- and New Institutional Economics

In his 1937 classic, "The Nature of the Firm," Ronald Coase asked the question: If markets are such efficient mechanisms for allocating resources, why are resources allocated outside of market transactions by the hierarchical management of the firm? His answer was that there are costs associated with effecting market transactions that might be circumvented by internalizing those transactions under the umbrella of managerial fiat. These *transaction costs* include search and information costs, bargaining and decision costs, and policing and enforcement costs (Dahlman 1979).[2]

Every exchange involves each of these costs to a greater or lesser extent depending on the characteristics of the transaction and the institutional environment in which the transaction occurs. Each of these transaction cost items is influenced by social, legal, political, and economic institutions. The social norms of behavior, the legal definition and enforcement of property rights (broadly defined), the political mechanisms by which property rights are (re)allocated, and the availability and efficiency of market institutions all have significant importance for the costs of transacting.

Understanding the interplay of these institutional forces with market exchange in a world of positive transaction costs is the province of *neo-institutional economics*. The basic core of neoclassical economics (rational, maximizing behavior subject to constraints) is preserved, but the supporting assumptions of zero transaction costs and perfect information are stripped away. Once removed, the door opens to entirely new fields of analysis, ranging from the organization of market transactions at a very micro level to the operation of political and social systems at a very macro level. And much research has been conducted on both fronts.[3] Indeed, the Nobel Prize committee has recognized scholars at both ends of the neo-institutional spectrum for their contributions to economics. At the more micro, transaction level, Ronald Coase won the Prize in 1991 for his work in transaction costs and property rights. At the more macro level, Douglass North won in 1993 for his work in economic history on the importance and role of institutions in affecting transaction costs and economic performance.[4]

Note that, to this point, no mention has been made of the neoclassical assumption of rational, maximizing behavior, whether at the individual or organization level. It is this margin on which *new institutional economics* emerges. Not unlike the old institutional school of thought associated with John R. Commons, among others, new institutional economics challenges the assumption that individual decision makers are perfectly rational and able to perform the calculus of marginal analysis for all possible alternatives in every decision situation. While this line of thought dates back to Herbert Simon's (1957) notion of *satisficing*, the more common theme in new institutional research is the idea of *bounded rationality* popularized by Oliver Williamson (1975, 1985). However, unlike the old institutionalism, new institutional thought contains a widely accepted theoretical core and provides a systematic approach to economic theory.

The fundamental demarcation between neo- and new institutional economics, then, is the degree of rationality attributed to decision makers. This is not a trivial demarcation, but the basic appreciation of the roles of transaction costs and institutions in shaping economic activity and organization is the same. The relaxation of the rationality assumption simply moves the field a step closer to reality. Thus, as suggested above, one might well argue that neo-institutional economics could be considered a subset of the new institutional theory. For ease of exposition, we will use the term new institutional economics except where the distinction is meaningful for the reader.

New Institutional Theories of the Firm

At this point, hopefully, it is clear that the theories Professor Royer presents as encompassing the new institutional economics (specifically the Williamsonian transaction cost economics [TCE] and the agency and property rights theories) merely comprise a subset of a much larger literature. Each of these theoretical frameworks focuses primarily on the structure of exchange relationships and the issues of firm organization and governance. None, by itself, provides an internally complete theory of the firm; but each contributes to a more complete understanding of integration, contracting, and organization. As a field, new institutional economics is still in its infancy. Despite, or perhaps thanks to, a growing volume of empirical research (see Shelanski and Klein 1995; Masten 1995; Joskow 1987; and Alston, et al. 1996), the new institutional theory of the firm is as yet still evolving. Nonetheless, the empirical hypotheses suggested by this framework have been largely supported.

In this section, we will more directly correct some of the misrepresentations and omissions of Royer's paper as they relate to agency theory, property rights theory, and transaction cost economics. We will review them in that order, rather than in the order they appear in the original article, to provide a more systematic approach of summarizing each. The first two, agency and property rights theory, fall primarily under the neo-institutional framework. Transaction cost economics (TCE), as it has come to be characterized by Williamson and others, falls under the new institutional theory. This is somewhat unfortunate, since much of the early work in this area predates the notion of bounded rationality. We will attempt to bridge the gap between the neo- and new institutional transaction cost theories of the firm by highlighting some of those earlier contributions as well.

Agency Theory

One of the first contributions with a neo-institutional flavor to look inside and illuminate the neoclassical firm's black box is Alchian and Demsetz (1972). This article introduced the basic notion that most organizations are characterized by some level of team effort. Such team effort enables specialization and division of labor inside the firm and gives rise to some of the more interesting organizational problems. However, due to observability and measurement costs pointed out by Royer, individual contributions to the total team output usually cannot be fully assessed. As a result, individuals will be tempted to shirk and free-ride on the contributions of their peer team members.

Alchian and Demsetz prescribe the introduction of a manager, i.e., the central party to all the firm's contracts, to monitor individual contributions and to reward such contributions accordingly.[5] The authors then go a step further to pose the intriguing question of "who will monitor the monitor?" This paper broadens the scope of the theory of the firm with the observations that a firm may not have a single, unique objective function to maximize and that the firm is plagued with internal transaction costs (or managerial costs), such as measurement costs and the free rider problem. The fact that managers may also be prone to shirking opened way to a fertile research agenda focused on the contract between managers and the residual claimants of the firm.

Royer also cites Jensen and Meckling's influential paper that, despite focusing on the agency problem between managers and residual claimants, correctly points out that agency costs are ubiquitous to every organization at every hierarchical level. The major contribution of this paper is the definition of agency costs as the bonding costs of the agent, the monitoring costs of the principal, and the residual loss. In other words, all

organizations are unavoidably inefficient relative to the neoclassical ideal, because whenever the agent's preferences diverge from the principal's there will always be some welfare loss.

Contrary to Royer's perception, Jensen and Meckling (1976) do not suggest that the choice of a particular capital structure (debt-equity combination) may be used to lower agency costs. In fact, the authors indicated that both debt and equity have problems associated with agency costs. Rather, they focus on how the introduction of public equity capital may lead a firm's founder to shirk or overindulge in perks. By doing so, they suggest that the correction of agency problems may lie primarily in the manipulation of the composition of ownership shares between decision makers within the firm and stakeholders outside the firm.[6]

Royer correctly recognizes that the primary focus of agency theory is on incentive and measurement problems, but he fails to point out the risk-sharing implications of incentive contracts. In fact, most applications of agency theory focus on the incentive vs. risk-sharing trade-off of contracts aimed at aligning the interests of the agent with those of the principal. Furthermore, by incorrectly identifying the individual as the unit of analysis in agency theory, Royer misses the rich applied literature (share-cropping contracts, rural credit, incentive contracts in corporations and cooperatives, insurance contracts, etc.) based on the transactional contract between principals and agents.

Property Rights/Incomplete Contracting Theory

The property rights theory (Grossman and Hart 1986; Hart and Moore 1990; Hart 1995) starts with the premise that contracts are necessarily incomplete, which, as Royer notes, means that the contract does not fully specify the division of value in an exchange relationship for every possible contingency. Contracts are necessarily incomplete because information is presumed to be asymmetric between trading parties and/or because signals regarding at least one party's performance and/or the state of the world are non-verifiable. Because transaction costs are positive, it is presumed impossible, or at least very costly, to eliminate these information and measurement problems. Consequently, the property rights theory of the firm described by Royer is also referred to as the incomplete contracting theory of the firm.[7]

Given this contractual incompleteness, ownership of the assets involved in the transaction becomes critical in determining how value is divided in the event a non-covered contingency arises. Ownership in this literature is defined by the *right of residual control*, i.e., who has property rights to control the assets' use in the absence of some other legal or contractual commitment. Hence, the property rights/incomplete contract theory suggests that ownership of assets (and thus, integration) should favor the party whose payoffs are most sensitive to the use of the assets. Using the jargon of the literature, the rights of residual control should be aligned with the rights of residual claim. By suggesting an optimal allocation of asset ownership, the theory claims to provide both a definition of as well as a determination of the boundaries of the firm. The theoretical framework suggests several testable hypotheses concerning the allocation of asset ownership given incompleteness in contractible terms.

Royer correctly notes that, in the absence of transaction costs, the property rights theory ceases to have any power since ownership would not matter. In a world of zero transaction costs, contracts would be fully specified (or, *complete*). Consequently, there would be no residual control issues since there would be no situations in which use of the assets was not contractually pre-committed. Moreover, any and all property rights

over the assets would be costlessly transferred to their highest valued use. This is the situation Royer describes in his opening paragraph on this topic.

This notion that the allocation of property rights would be irrelevant in a zero transaction cost world is commonly referred to as the *Coase Theorem*, after Ronald Coase's 1960 article on "The Problem of Social Cost," the second of the two papers for which he received the Nobel Prize. The more important implication of the Coase Theorem is exactly the type of argument suggested in this property rights/incomplete contracting theory: in a world of positive transaction costs, the allocation (and possible non-transferability) of property rights may have significant consequences for economic organization, behavior, and performance. Although Coase's "Problem of Social Cost" was aimed at the legal and political treatment of economic and environmental externalities, the same principles apply in the context of firm organization.

Transaction Cost Economics

Transaction cost-based theories of firm organization go back to Coase's 1937 article, which obviously predates the introduction of bounded rationality to the theoretical framework. Similarly, Cheung (1969, 1983), Alchian and Demsetz (1972), and Klein, Crawford, and Alchian (1978) each examine the role of transaction costs in explaining the existence and boundaries of firms without relying on the assumption of bounded rationality. So it is a misnomer to suggest that transaction cost economics is necessarily part of the new, as opposed to the neo-, institutional economics. However, the term "transaction cost economics," or TCE, was first introduced by Williamson and has since come to be associated with bounded rationality and the new institutional economics.

The notion of contractual completeness, as suggested by its prominence in the property rights theory, is not unique to TCE and does not require assumptions of bounded rationality (Hart 1990). In the TCE framework, however, the incompleteness of contracts is a result (to one degree or another) of both transaction costs and bounded rationality. Bounded rationality suggests it is impossible to write a perfectly complete contract because the individual decision makers are incapable of considering all the possible contingencies. Moreover, even within the realm of understood contingencies, transaction costs may make it prohibitively expensive to write a more complete contract (i.e., one that more fully specifies the foreseeable contingencies and resultant obligations of each party), just as in the property rights theory.

Contractual incompleteness gives rise to the possibility of opportunistic behavior, particularly when relationship-specific assets are involved. Royer defines a relationship-specific asset as one "that is purchased in support of a specific transaction." However, an asset's specificity is determined not so much by the motivation for its purchase, but by its value outside the specific relationship. An asset is said to be relationship-specific if its value in any other use is significantly lower. In fact, the degree of asset specificity is best measured by the decrease in the asset's net value if it is re-deployed to its next-best use. It is this decrease in value that creates the quasi-rents that entice opportunistic behavior on the part of either contracting party.

As Royer indicates, four types of asset specificity include geographic or site specificity, physical asset specificity, human asset specificity, and dedicated assets. Of these, site specificity is of obvious interest in agriculture and collective action, as producers are tied to the local market (local buyer) by virtue of geography and transportation costs. A fifth form of specificity, introduced by Masten (1991), is also of particular importance in agricultural transactions: the idea of temporal specificity. The time-sensitive value of

agricultural products and production processes creates another margin on which trading parties might opportunistically demand ex post renegotiations of contract terms.

Given the potential for opportunism resulting from contractual incompleteness, one might surmise that the solution is to write the most complete contract possible. However, as indicated above, more complete contracts are more costly to write, and perfectly complete contracts are beyond the purview of rationally bounded mortals. One, then, must balance the increase in ex ante negotiation and contracting costs associated with more completeness with the decreases in expected ex post opportunism and re-negotiation costs. As in all economic theory, the trade-off between the marginal costs and benefits determines the optimal completeness of contracts (see, Crocker and Reynolds 1993).

Because the ex ante costs of contracting and the expected costs of opportunism are associated with observable characteristics of the transaction and the transacting parties, several testable hypotheses present themselves concerning both the choice and the effects of different governance structures for any given transaction. Shelanski and Klein (1995) provide a detailed review of empirical TCE research, focusing specifically on five major areas in which they felt TCE had made considerable progress in improving our understanding: vertical integration, "hybrid" contracting modes, long-term commercial contracts, informal agreements, and franchise contracting. They further broke down the research by two lines of analysis: studies of comparative contracting and studies of the effects of organizational form. Although they admit to include a relatively small portion of the total available literature, they still cite over 120 previously published empirical studies.

The Prognosis for NIE Research

Despite the numerous empirical studies cited by Shelanski and Klein, and the even greater number of articles excluded from that review, much work remains. There is a wealth of testable hypotheses in the existing literature, and the theoretical framework continues to evolve. There are innumerable institutional and market environments that have yet to be examined in a systematic fashion. The interplay between institutional structure, organizational form, and the costs of contractual exchange has only begun to be explored. The application of these theories to cooperative organizations is but one of the many areas of fertile ground for research.

Notes

1. The December 1998 issue of the *Journal of Institutional and Theoretical Economics* contains several articles by political scientists, sociologists, and anthropologists on the impact of new institutionalism on those fields.
2. Different authors use different definitions of transaction costs. We chose Dahlman's definition because Coase (1988, 6) cites it as crystallizing the concept he had in mind as he wrote "The Nature of the Firm."
3. Two collections of readings illustrate this breadth in application. Masten (1996) includes thirteen case studies of contracting and organization studies at the firm or industry level. Alston (1996), Eggertsson (1990) and North (1994) include nine studies of institutional change in political and economic systems.
4. Coase's (1992) and North's Nobel Prize acceptance addresses provide wonderful summaries of their respective contributions and how they fit into the ongoing research agenda of the NIE.
5. This idea of the manager as the central figure in a network of contracts gave rise to the idea of the firm as "a nexus of contracts," a term first coined by Jensen and Meckling (1976).

6. Ownership structure, as defined by Jensen and Meckling, is "the relative amounts of ownership claims held by insiders (management) and outsiders (investors with no direct role in the management of the firm)." Capital structure, on the other hand, refers to the manner in which the firm's value is distributed between debt and equity claims.
7. Note that this incomplete contracts theory is different than the traditional property rights literature characterized by Demsetz (1967) and De Alessi (1983). Although the concept that incentives and property rights need to be aligned, the incomplete contract theory includes a much more specific notion of ownership and its implication for structuring organizations.

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