Introduction

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1. WHAT IS NEW INSTITUTIONAL ECONOMICS?

New institutional economics (NIE) studies institutions and how institutions interact with organizational arrangements. Institutions are the written and unwritten rules, norms and constraints that humans devise to reduce uncertainty and control their environment. These include (i) written rules and agreements that govern contractual relations and corporate governance, (ii) constitutions, laws and rules that govern politics, government, finance, and society more broadly, and (iii) unwritten codes of conduct, norms of behavior, and beliefs. Organizational arrangements are the different modes of governance that agents implement to support production and exchange. These include (i) markets, firms, and the various combinations of forms that economic actors develop to facilitate transactions and (ii) contractual agreements that provide a framework for organizing activities, as well as (iii) the behavioral traits that underlie the arrangements chosen. In studying institutions and their interaction with specific arrangements, new institutionalists have become increasingly concerned with mental models and other aspects of cognition that determine how humans interpret reality, which in turn shape the institutional environment they build (North 1990, p. 3–6; Williamson 2000).

New institutional economics abandons the standard neoclassical assumptions that individuals have perfect information and unbounded rationality and that transactions are costless and instantaneous. NIE assumes instead that individuals have incomplete information and limited mental capacity and because of this they face uncertainty about unforeseen events and outcomes and incur transaction costs to acquire information. To reduce risk and transaction costs humans create institutions, writing and enforcing constitutions, laws, contracts and regulations—so-called formal institutions—and structuring and inculcating norms of conduct, beliefs and habits of thought and behavior—or informal institutions. They develop modes of organization embedded in these settings that provide different incentives that vary in their capacity to motivate agents. For new institutionalists the performance of a market economy depends upon the formal and informal institutions and modes of organization that facilitate private transactions and cooperative behavior. NIE focuses on how such institutions

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emerge, operate, and evolve, how they shape the different arrangements that support production and exchange, as well as how these arrangements act in turn to change the rules of the game.

Because NIE considers choices to be embedded in institutions, it has a much broader reach than neoclassical economics, which has been largely concerned with prices and outcomes. But unlike old institutional economics, NIE does not abandon neoclassical economic theory. While new institutionalists reject the neoclassical assumption of perfect information and instrumental rationality, they accept orthodox assumptions of scarcity and competition. Both Arrow and Williamson have attributed the rising influence of NIE to its acceptance of the successful core of neoclassical economics. As Kenneth Arrow observed, unlike the older institutionalist school, New Institutional Economics does "... not consist of giving new answers to the traditional questions of economics—resource allocation and the degree of utilization. Rather it consists of answering new questions, why economic institutions emerged the way they did and not otherwise ... " (1987, p. 734).

NIE tries to answer questions that neoclassical economics does not address and this has given NIE a distinct identity and a strong following. As North has pointed out (North 2004, forthcoming) neoclassical economics was not created to explain the process of economic change, much less political or social change. Institutionalists in contrast aim to understand change by understanding human incentives and intentions and the beliefs, norms and rules that they create in pursuit of their goals (see North 2004, forthcoming).

Answering new questions requires institutionalists to devise new methodologies. Elinor Ostrom points out that unlike much of social science institutional analysis cannot simply hold constant other institutions because "the impact on incentives and behavior of one type of rule is not independent of other rules" (Ostrom, chapter 30). There are numerous examples of these interaction effects throughout this Handbook. For instance, the section on state institutions illustrates how electoral procedures, political party norms and constitutional laws and structures interact with one another to shape the incentives of politicians and voters and, ultimately, to influence policy decisions and organizational choices.

NIE's breadth and innovation have fostered a multi-disciplinary approach. Institutional analysts adapt useful concepts and methodology from political science, sociology, law, anthropology, cognitive science, evolutionary biology, and any other discipline that sheds light on the rules, norms and beliefs that govern human interactions in the process of production and exchange. A number of the authors in this Handbook are not economists, but all are social scientists who share an interest in the scientific analysis of institutions.

2. Why a Handbook on New Institutional Economics?

New institutional economics (NIE) has grown rapidly over the last three decades. Since the term was first coined by Oliver Williamson in 1975 (1975) the subject has exerted rapidly increasing influence over scholarly research.[1] This influence is not limited to economists. Increasing numbers of legal scholars, political scientists, sociologists, anthropologists, management specialists, and others are doing research in new institutional economics. NIE is also attracting new researchers, from many different countries.

The time is ripe for a synthetic book that provides interested readers with an overview of recent developments and broad orientations of new institutional economics. Much institutional research is published in journals that may not be familiar to others working in the field, and new institutionalists may be unaware of discoveries from disciplines other than their own. This Handbook acquaints readers with the scope of NIE, the recent trends, and the progress made by scholars from other fields. Also, young researchers may want guidance about what the topic means and how it is being researched. This volume, written by some of the foremost NIE specialists, gives new researchers an introduction to the topic and a reference book for their research.[2]

The book opens with three chapters that give the reader a sense of the scope of new institutional economics and the issues fundamental to the study of economic institutions (Section I). One branch of NIE focuses on the macro institutions that shape the functioning of markets, firms, and other modes of organization: the state (Section II) and the legal system (Section III). Another branch concentrates on the micro institutions that govern firms (Section IV) and their contractual relations (Section V). New institutionalists are also much concerned with the interactions between state and firm (Section VI). Increasingly institutional economics has also focused on how institutions, both macro and micro, change: how they emerge, evolve and die (Section VII). Because NIE is addressing new questions or new aspects of old questions its future is being shaped by new methodologies and a multifaceted, multidisciplinary approach (Section VIII).

3. The Domain of NIE

Douglass North argues in his chapter that one of NIE's main inputs to economics has been to remove the fiction of the frictionless market by adding institutions, but that NIE has the potential to perform an equally, or more powerful service: changing neoclassical economics from a static to a dynamic theory. To understand economic change and how to improve economic performance it is not enough to understand the basic rules of the game or even customs, norms and habits, North maintains. We must also understand what people believe and how they arrive at those beliefs—how people learn. North has been leading the movement to study the broader institutional framework that shapes the functioning of markets, to add beliefs and norms to the study of institutions,

[1] Our thanks to Rudolf Richter for dating the use of the term.

[2] Useful background on NIE can be found in Furubotn and Richter, 1998.

and to incorporate aspects of cognition in order to understand institutional change.

Ronald Coase's chapter on the institutional structure of production hearkens back to his seminal work that lies at the heart of New Institutional Economics: "The Nature of the Firm" (1937) and "The Theory of Social Cost" (1960) (reprinted in Coase 1988). Coase describes his unwillingness to treat the firm as a "black box" that takes prices at one end and produces outputs at the other. This unwillingness led him famously to ask why firms exist, why are not all transactions done through the market? He famously answered that firms exist to economize on transaction costs. We find firms when it is cheaper to organize activities under a governing hierarchy than to try to conduct them in the market place and pay the costs to search, negotiate, monitor and enforce contracts. Coase's argument that the level of transaction costs depends upon the institutional setting within which economic actors operate set the stage for the NIE. Coase's emphasis on empirical analysis of real economic phenomena using practical, even if sometimes inelegant, methodologies has also been influential in the variety of themes, approaches and disciplines that characterize the NIE.

Transaction cost economics is a direct descendent of Coase's "Big Idea," as Oliver Williamson (following Varian) terms the theory of the firm in his chapter. Transaction cost economics is well named; it is concerned with transactions, specifically: (i) the extent to which the assets involved are specific to a transaction, (ii) how disturbances or changes may affect the transaction, and (iii) how frequently the transaction will reoccur. The nature of transactions affects contracts and the way in which economic activities are allocated between firms, markets or other modes of organization. These in turn affect whether incentives are high- or low-powered, whether administration is hands on or off; and whether dispute resolution relies on courts or private ordering. As a consequence, the relative advantages of a specific arrangement can only be assessed comparatively, taking into account the characteristics of the transactions at stake and the institutional environment within which they are conducted.

4. Political Institutions and the State

The level of transaction costs depends upon the institutional setting according to Ronald Coase, and political institutions are among the foremost factors that shape that setting. As North has pointed out, political institutions can play an important role in reducing transaction costs by improving the security of property rights and enforcement of contracts (North 1997, p. 150). But states do not necessarily play this role; indeed, many are ineffectual at protecting rights or securing contracts and many others are themselves an important threat to the security of property rights and a prime violator of contracts. Understanding how polities affect the transactional environment, how economic and political markets interact, and how, when and why states enforce or violate property rights and contracts are important tasks for NIE research.

As Barry Weingast makes clear in his chapter on federalism, NIE approaches these themes by dropping the traditional economic assumption of government as benevolent and the opposite assumption of government as Leviathan, focusing instead on how different institutional arrangements affect the incentives and performance of government. In particular NIE considers a fundamental dilemma: investment increases when property rights are protected, but a state strong enough to protect property rights is also strong enough to expropriate them (Weingast 1993). An underlying theme of all the chapters in this section is how to strike a balance between a state powerful enough to act decisively yet limited enough to prevent abuse of authority. One way to limit government is to separate state powers into branches (executive, legislative, judicial) or hierarchies (federal, provincial, local) and require them to compete or balance each other.

These chapters show how state performance in a democratic system is strongly influenced by the rules governing elections, the executive branch, the legislative branch and the division of power between federal and local governments. The large variation in rules that govern a democratic system documented in these chapters helps explains why measures of democracy have an ambiguous effect on growth or other performance variables in cross country regressions.[3] To describe and measure democracy we have to understand the devil in the details.

Electoral rules are a good example of this variance. As the chapter on electoral institutions by Gary Cox makes clear, the variance in electoral rules is large and the effects of different designs, significant. Yet electoral rules are not often analyzed as determinants of outcomes and few papers compare the effects of different electoral rules. This is a major gap. Within democracies, electoral systems differ in how they allocate the number of votes per voter, the number of seats per district, and the proportionality of votes to seats. These three factors—number of votes, district magnitude, and proportionality—affect how electoral competitors try to coordinate, persuade and mobilize voters, and this in turn has implications for who gets elected, the types of promises politicians make to voters, and both the extent of turnout and which groups are likely to vote. Policy choices are strongly influenced by which groups of constituents a policy maker must account to during elections, and this ultimately has a profound effect on economic performance. To see an example of how this works, consider Pablo Spiller and Mariano Tommasi's chapter on utility regulation. Spiller and Tommasi illustrate how political incentives affect government's willingness to abide by its contractual obligations to private providers,

[3] This section does not include an analysis of the institutions of dictatorships. Recently, as Carey's chapter documents, dictatorships have been increasingly replaced by democracies. Yet understanding the fundamentals of coercion is part of NIE and later in the Handbook Greif suggests a theoretical framework for incorporating coercion institutions into institutional analyses.

such as whether politicians will allow contracted price increases when these adversely affect their constituents. The credibility of a state's commitments to honor its contracts determines in turn whether or not the government can employ the more efficient and flexible regulation that enhances utility performance.

The choice between a presidential or parliamentary government is also highly consequential for any democracy. This seems like a stark choice between two polar options, but it is not. As John Carey's chapter shows there are many hybrid arrangements, especially in new democracies. New democracies have overwhelmingly adopted systems that directly elect the chief executive, but many have also adopted mechanisms to try to ensure that the president maintains support from the legislative body, by adding an office of prime minister or requiring the president to survive confidence votes, for example. Even more striking are recent actions by legislatures in Latin America to replace presidents. These hybrids between presidential and parliamentary systems are attempts to preserve a separation of powers while reducing the risk that a president loses all cooperation from the legislature, which can threaten the very survival of a fragile democratic system. The stability and policies of presidential and hybrid systems are affected by electoral rules, such as whether the president and legislature are elected at the same time, and by the rules governing the power of the president to set the legislative agenda, issue decrees, veto laws, and be reelected.

Given the previous discussion, it should be no surprise that there are many ways to organize the internal activities of legislatures and these various legislative organizations have systematic policy consequences. The most obvious variance is in how policy decisions are taken: what voting procedures are used; what types of amendments are allowed; what provisions are made for debate; whether the public can participate; etc. But as Mathew McCubbins' chapter makes clear there are two other important elements in the legislative process that vary across countries. One is how the legislative agenda is controlled—by the executive, by the lower or upper house, etc. The other is, what happens when no new laws are passed—does the status quo continue or does a program end?—and who decides. These internal legislative processes emerge from a complex interaction between constitutional and electoral institutions and the political environment. The political environment, in turn, is influenced by the constitutional separation of powers and purpose. Constitutional institutions affect the influence of different factions in society, but they themselves also mirror these influences. Polities with many diverse interests and factions have less unitary government institutions with more separation of power than more unified and homogeneous polities.

The design of federal systems, as Barry Weingast shows in his chapter, is another complex source of variance. Federalism varies in the number and character of layers in the hierarchy of a country's governments, the types of power delegated to its sub-national governments, the extent and regulation of the common market shared by its different sub-national governments, and the institutions that protect the federal arrangement from encroachment. These choices have profound implications for performance since they affect whether governments serve private or public ends. For example, Weingast shows how federal revenue sharing rules can affect levels of corruption. When local governments raise funds locally they have a stronger incentive to focus on market enhancing public goods because it increases their tax base and allow local governments to provide more of these goods. To the extent that revenues are raised nationally and distributed to the local governments according to national political criteria, this incentive is reduced and local governments will focus more on private rents. The design of the federal rules also determines whether federalism itself can survive. The center of a federal state needs sufficient power to police common pool problems among the sub-national governments, yet the more powerful the center, the more likely it is to abuse its power. In addressing this puzzle, Weingast's chapter exemplifies how an institutional focus poses different questions and seeks new answers. Traditionally economists asked what powers should be assigned to what level of government and answered variously that power should be assigned to the level with the most information, to maximize competition, to produce public goods most efficiently, etc. NIE asks instead how different federalist designs affect the incentives and objectives of government officials to further citizens' welfare and whether federalism is self-enforcing.

5. Legal Institutions of a Market Economy

An important regularity in NIE, that goes back to Coase (Coase 1960), is the critical role played by rule of law in the development and health of a market economy. The chapters in this section focus on how legal institutions support market economies by enforcing contractual obligations and protecting private property from state predation. Contractual agreements can be enforced in many ways, as Gillian Hadfield's chapter describes, but many forms of enforcement are not credible to all parties or have high costs. When enforcement is not credible or too costly, many otherwise lucrative transactions will not occur and economic performance will suffer. Even though very few disputes are actually pursued in court, an effective and efficient legal system alters people's incentives to behave opportunistically, improves the efficacy of other forms of contract enforcement, and increases the number of profitable transactions. Hadfield shows that the term "legal system" covers a complex, interwoven structure of laws, doctrines, norms, organizations, professions, and individuals facing major incentive and coordination problems, nicely illustrating Ostrom's argument that interactions between institutions cannot be safely ignored. In identifying clearly the different components of a legal system, Hadfield also suggests ways to approximate its costs and to compare different systems.

Hadfield's chapter introduces us to a debate that is analyzed in all the chapters in this section: the effects of civil versus common law origins on the current performance of a country's economy and its legal, state, financial and other institutions. Common law, which originated in England and was implanted in its colonies, combines laws passed by the legislature with custom and rules made when judges decide cases that are treated by other judges as precedents for future decisions. Civil law requires judges to uphold laws as they were written by the legislature with less room for judicial interpretation or discretion. Civil code law is associated with Europe, originally the Roman Empire and subsequently France and the countries conquered by Napoleon and their colonies. A growing literature, summarized in the chapters by Paul Rubin and Thorsten Beck and Ross Levine, argues that civil law provides less protection for private property rights from state predation and is less flexible in the face of changing circumstances. All the chapters cite cross sectional studies that find common law is correlated with greater civil liberties, less government intervention, more developed financial systems, and higher rates of growth in per capita income. This remains a highly controversial issue.

Hadfield is skeptical about the claims for legal origin, noting that informal judicial norms of reasoning and the interaction of these norms with legal practice shape the character of legal systems far more than distant legal origins. She also points to the large body of code law present in common law countries today, and notes the potential inflexibility and bias of common law's precedent-based decisions.

Paul Rubin is more sympathetic to the argument that common law systems were once more efficient than civil law systems, although he too sees convergence between common and civil laws systems. In his discussion of the functions and mechanisms of a judicial system in a market economy, he emphasizes the protection of property rights from both private opportunism and state encroachment. It was the latter protection that functioned better in common law in his view, because judges were more independent of government. This argument has parallels with the previous chapters on the importance of separation of powers in limiting state predation. Rubin also cites intriguing evidence that some common law countries may have had more competition between different court systems and this may have been the source of their relatively higher efficiency.

Benito Arruñada and Veneta Andonova take up the same debate from a historical perspective. They document how common and civil laws were both attempts to install market-oriented legal systems and were both efficient in their particular circumstances during the 19^{th} century. Civil law countries wanted to restrain judicial discretion because the judges were aristocrats who purchased or inherited their position; they were the intellectual product of the ancient regime and would not have respected private property or contractual freedom if given freedom to choose. England's common law emerged gradually over a longer period of development of a modern market; English judges were former barristers who, because they had defended clients in contractual disputes, had a personal appreciation for the market economy. Like Hadfield and Rubin, Arruñada and Andonova see a growing convergence between civil and common law systems in the 20^{th} century. They are critical of this evolution (which they term an anti-market bias) because they view it as a restriction on market-oriented arrangements.

Beck and Levine trace the influence of legal origins on financial systems which they see as a prime mechanism by which law affects growth. They cite empirical evidence that common law origin is significantly correlated with indices measuring how much a country's current rules protect the rights of minority shareholders and creditors during reorganizations of firms. These indices are themselves highly correlated with measures of the development of equity markets and the availability and flexibility of financing for firms. They argue that historical difference in legal tradition led to differences in protection of investors, property and contractual rights and hence to differences in the willingness of savers to invest. They offer little empirical support for Rubin's view that the more important influence of legal origins is on protection of property rights from the state, perhaps because this is harder to measure.

All of these chapters suggest that imposition of legal rules in developing and transitional countries is fraught with problems. Rubin and Beck and Levine suggest that common law systems may export better than civil law systems because of their greater respect for jurisprudence and flexibility in the face of radically different circumstances. Nevertheless, Arruñada and Andonova note that most transitional countries chose civil law systems, perhaps because they face a problem of protecting the market from judicial encroachment similar to that of early Continental Europe, and perhaps because legal systems in developed countries, even the US and the UK, now resemble statute law more than common law.

The importance of legal institutions to market development has been soundly established, and new institutionalists have played a major role in putting that item on the research agenda. But this section suggests that the case for legal origins is still a matter for debate. The argument for common versus civil law origins suffers from a number of missing links. What is the causal path by which greater judicial discretion of judges in 19th century common law countries led to stronger rules protecting shareholders and creditors? The answer is not clear and much of the cross sectional evidence is correlation in search of a theory of causality. How well do the rules protecting shareholders and creditors predict actual enforcement of shareholder and creditor protection? An important strength of NIE is to search out the gap between de jure and de facto rules, but most of the studies of legal origin focus on rules-on-the-books, not rules-in-practice. Why does the convergence of legal systems in the 20th century not affect these correlations?[4] Are problems of adaptation (which are not measured) more important than legal origin in driving these outcomes? These chapters suggest that we have much to learn about the role and evolution of legal institutions.

[4] Mark Roe has argued that US protection of minority shareholders was done by code—the creation of the Security and Exchange Commission—because US common law was seen as weak in protecting shareholders' rights.

6. Modes of Governance

Ronald Coase's query as to why some transactions are done in markets and others in firms seems deceptively simple. An important achievement of NIE in the years since Coase asked that question is to show how complex both question and answer really are. Claude Menard's chapter explores how command, control and cooperation might give firms an advantage over markets and argues that we must understand the internal costs of firms as well as transaction costs if we want to explain when they have an advantage over markets. Menard explores the many different ways of organizing activities that fall between the polar choices of vertically integrating the transaction into a firm or conducting trades on the spot market. NIE differs from traditional economics not just by peering into the black box of the firms; it also opens the black box of markets. Menard points out that to a new institutionalist markets are not costless, identical, or immediate; they are diverse in their costs because they vary in how they are organized, the rules that support them, and how those rules are enforced.

As Menard's chapter suggests, there are still many unanswered questions in the study of transactions and governance. Many of the insights about inter-firm transactions could apply to intra-firm governance, but so far the internal structure of firms has received less attention from new institutionalists. Exceptions can be found in Gary Miller's chapter on principal/agent problems in firms and Erin Anderson and Hubert Gatignon's chapter on the creation of new markets. The market is an alternative to hierarchy, but that does not mean it is institution free; yet to date there has been relatively little work on the micro-analytics of market governance structures. (Ostrom lists the rules required for a competitive market in her chapter, and the list is quite long.) Another gap in the literature emerges from the failure of many empirical studies of transaction costs and the firm adequately to account for the effects of the broader institutional environment, even though regulation or norms may be as important determinants of the choice of governance structure as asset specificity or uncertainty.

An area where NIE has proved particularly powerful is in explaining vertical integration. Paul Joskow's chapter contrasts traditional and so-called "new property rights" explanations for vertical integration with transaction cost explanations. One clear advantage of transaction cost explanations over alternative theories is that they have produced testable hypotheses and spawned a wealth of empirical studies, which Joskow summarizes and critiques. Transaction cost theories start with the recognition that contracts are incomplete and subject to both ex ante and ex post opportunism, and that transaction costs will vary both with the nature of the transaction and with the different modes of governance. In choosing whether to rely on markets, vertically integrate, or use some hybrid mode of governance, transacting parties consider both how well the various options mitigate opportunism and at what cost. Asset specificity is an important factor in this calculus and Joskow shows the many guises and roles of asset specificity. Such choices are not static, but we do not yet have a dynamic theory of why governance modes change and how contractual relations and organizations adapt to changing circumstances.

The difficulties of negotiating, monitoring and enforcing contracts and the problems of opportunism apply equally to transactions within a firm as to trade between firms according to Gary Miller. He links principal/agent theory to a NIE perspective in his chapter to explain how incentives, monitoring and cooperation interact with the varying nature of intra-firm transactions and to show why different types of contracts work better for different kinds of transactions in different settings. Firms use different mixes of solutions to the problem of motivating agents to do what their principal wants, and that creates different kinds of firms. Firms that rely principally on high-powered incentives tend to be risk-taking innovators; those that use monitoring most are cautious and bureaucratic; and those that rely mostly on cooperation are more closely-knit and team oriented. The variety of firms that Miller portrays has its parallel in the diversity of hybrid forms Menard describes and the multifarious solutions to the make-or-buy problem revealed by Joskow.

Miller focuses on the agency problem for managers at each level of the hierarchy within a firm to motivate their subordinates; Mark Roe focuses instead on the agency problems at the top levels of a firm. Corporate governance tries to solve a vertical problem: how do stockholders prevent stealing and shirking and assure competent senior managers? Corporate governance must also deal with a horizontal problem: how can distant, minority shareholders prevent close, controlling shareholders from shifting value to themselves? Corporate governance institutions also affect an external problem: how can outside or inside interests be deterred from using political means to intervene in the corporation? Roe describes the different institutions that can deal with corporate governance problems, including markets; boards of directors; executive incentives and norms; information disclosure mechanisms; takeovers, proxy fights, and shareholder voice; capital structure; bankruptcy; and lawsuits. His approach is comparative and illustrates nicely how rules of the game on the books and in practice depend on their institutional environment. Roe also shows how more sophisticated institutions must rest on a functioning system of corporate law and property rights to work effectively. In that respect, corporate governance interacts in complex ways with the legal and political institutions in which it is embedded.

The final chapter in this section turns to the dynamic problem of how firms create new markets for both existing and new products. Erin Anderson and Hubert Gatignon consider markets as institutional arrangements resulting from interactions among firms and between firms and potential customers. Market creation thus results from both the internal challenge of governing to encourage innovation and the external challenge of acquiring innovations through acquisition or appropriation. New markets can be developed through in-house marketing efforts or by franchising or other forms of partnership, all requiring safeguards against the risk of opportunism. Uncertainty in the firm's environment as well as internally is a key issue here. This analysis substantiates the NIE perspective that markets should not be treated as black boxes: they can be analyzed as diverse outcomes of complex adjustments and innovations over time. Anderson and Gatignon show how NIE is the right analytical tool to understand the comparative business logic of these governance choices and the effects of path dependence and bounded rationality.

7. Contractual Arrangements

In the previous section we saw the many organizational forms that transactions can engender. New institutionalists also analyze the variety of contractual arrangements these organizations conclude. Much of the empirical literature on contracts has been concerned with the fundamental question—make or buy? As Peter Klein describes in his chapter on this literature, empirical studies of how transaction costs influence this decision have had to overcome serious data, methodology, and conceptual problems. Yet these problems have been far less formidable than those posed by rival theories. Property rights models focus exclusively on how inefficient ownership arrangements cause ex ante underinvestment in relationship-specific human capital. As Klein shows, few studies have managed to measure ex ante human capital investment, much less compare it to some optimal estimate. Transactions cost models, with their focus on ex post execution of the contract, are empirically more tractable, and in the few studies that have compared them, win out over rival theories, including market power, resourced-based, or strategic management explanations.

Douglas Allen and Dean Lueck reach similar conclusions for agricultural contracts. Agriculture is another area where transaction cost models have generated a large empirical literature and trumped rival explanations, such as principal/agent models, in comparative studies. For example, principal/agent theory argues that contracts such as sharecropping contracts are designed to balance risk against moral hazard incentives, yet empirical tests find no support for the hypothesis that share contracts are likely to be chosen over cash rent contracts as crop risk increases. Transaction cost analyses do not treat contracting parties as principal and agent, but instead examine the incentives of both parties to maximize wealth in an uncertain environment, where inputs and outputs are complex and hard to specify in the contract, options are limited by seasonality, and delays in some activities can raise costs and reduce yields or quality. Allen and Lueck argue that the focus of the transaction cost approach on incentives, realism, and testable hypotheses have generated robust and empirically supported explanations for the structure of agricultural contracts.

Notwithstanding the successes cited by Klein and Allen and Lueck, there is much room for further development. One problem, not unique to NIE, is that contracts are often confidential. Another problem is measurement. Recall that Williamson argued that three variables of a transaction affect transaction costs and the design of the contract: frequency, asset specificity and uncertainty. Frequency can produce ambiguous results, while both asset specificity and uncertainty have proved hard to measure leading many researchers to resort to proxies, with mixed success. Linking transaction costs to contractual design or contractual design to performance is also tough, and success varies. Moreover, few studies have connected contractual choice to changes in the broader institutional environment or tried to test transaction cost results against alternative theories. Recent research has begun to address these issues, by empirically testing competing theories (as Klein and Allen and Lueck describe), and by comparing the performance of similar contracts in different environments (as referenced by Spiller and Tommasi and Shirley).

The effects of contracts on performance depend not just on how they are written and implemented. How they are enforced is also significant as Victor Goldberg's chapter reminds us. NIE's emphasis on the importance of enforcement was an early development and made an important contribution to an issue largely ignored by the standard approach. The NIE view—that contracts are usually not fully self-enforcing and ex post conditions of implementation need to be seriously taken into account—has led to greater attention to the role of courts. While thus far the economic analysis of ex-post conditions has had limited effect on how courts interpret contracts, Goldberg is optimistic that the success of the economic approach as a framework for analyzing contracts will eventually have influence.

8. Regulation

The chapters in this section show how NIE has proved a powerful approach for the study of regulation, both theoretically and in comparative empirical studies. We have already discussed how transaction costs analysis led to a reexamination of anti-trust regulation; it has begun to have a similar influence on other regulations as well, especially utility regulation. Institutionalists reject the notion that state ownership and state regulation of utilities are substitutes, arguing instead that they are polar options with radically different incentive and efficiency properties and that their feasibility depends on political circumstances. As Pablo Spiller and Mariano Tommasi discuss in their chapter, institutionalists also reject the traditional view that the only problem of utility regulation is opportunistic behavior of the regulated firm, and turn the spotlight on opportunism of politicians. Government opportunism is a general problem, but is especially relevant for poor countries trying to privatize their state owned utilities since these countries lack the institutions to enforce government commitments and ensure that policies are stable through regime changes. Spiller and Tommasi discuss the differences between regulatory governance regimes relying on formal administrative procedures, such as those that predominate in the US, and contract law, such as in the UK. They also examine the sorts of constitutional institutions that are required to make these governance modes function effectively and the options for countries that lack these supportive institutions. They show that in order to better understand regulations and their successes and failures we need to treat regulations as a mode of governance rather than pure incentive mechanisms, an approach distinct to NIE.

NIE is similarly distinct in its approach to open-access, common-pool resources, such as fisheries, aquifers, oil pools, and the atmosphere, and to problems of property rights more generally. Indeed, from the outset an important focus of the NIE research agenda was analysis of the issues surrounding the delineation, allocation and implementation of property rights. Many regulations deal primarily with these issues.

Gary Libecap describes in his chapter how transaction costs create the tragedy of the commons, which arises when it is too costly to put boundaries around the resource, secure agreement to limit individual actions, and obtain enough information to design, motivate and monitor possible solutions. The transaction costs of gathering, interpreting, and conveying information about the common resource and of negotiating among the relevant parties also help explain why private agreements and state regulations of common-pool resources take the forms they do. For example, side payments are often proposed as a way to mitigate opposition from those who might be harmed, but side payments are not feasible if it is costly to reach agreement on what is the magnitude of the harms involved, whether compensation is warranted, who should be compensated, and what should be the size, source, and form of the compensation. Some parties who may be harmed, such as politicians who lose constituents, cannot legally receive compensating side payments. Libecap illustrates how NIE analyses of regulation consider bargaining among all affected parties, as well as the role of cultural, legal, and political precedents in determining regulatory outcomes.

Libecap examines state regulation of resources where private property rights are not feasible; Lee Alston and Bernardo Mueller examine the state's role in the opposite case where private property rights **are** feasible. Early theories argued that scarcity in resources would make secure property more valuable and create demand for the state to protect property rights. But many states do not supply secure property rights nor do they change property rights when changes in scarcity value demand it. There are political and economic transaction costs associated with the state establishing or changing property rights that are very similar to those described in other chapters of this Handbook for other actions. Alston and Mueller's chapter shows how NIE illuminates the causes and consequences of insecure and inefficient property rights.

A hallmark of NIE is its concern with how and why ex post behavior differs from ex ante rules, assumptions or agreements. Lee Benham's chapter illustrates how regulation can have a number of consequences that were not anticipated in standard neoclassical models. Regulation can lead to a number of licit responses such as substituting unregulated goods for regulated ones, or barter for regulated money exchange, or altering the organization of the market in response to regulations that raise or lower transaction costs. Regulation also stimulates a number of illicit responses, such as extralegal activity (the informal or underground economy) or corruption. Benham shows how regulation is path dependent and its long-run consequences depend heavily on the context and time period, leading to outcomes in which the effects on allocation are only a small part of regulation's total impact. His conclusions substantiate a central theme of NIE: the effects of institutions need to be assessed comparatively.

9. Institutional Change

The contributions in this section confront the challenge that Doug North posed at the outset: move economics from a static to a dynamic theory by explaining how institutions change. There is no clear evidence on how long institutions persist or why and how they change. Like North, Mary M. Shirley's chapter on institutions and development agrees that we have a long way to go in understanding how institutions change. Her chapter deals with two questions: why have so few countries been able to create and sustain institutions favorable to growth and how can institutions be changed to support economic development rather than hinder it? Although great strides have been made in identifying the core institutions that are correlated with economic growth and the historical circumstances that explain why these supportive institutions are weak or absent in some countries, her review shows how far we are from being able to answer the two questions she raises. Empirical studies exhibit significant regularities; in particular institutional variables systematically dominate other variables in explaining growth and social progress. But these studies lack a theory that would transform regularities into causal explanations. Her analysis also emphasizes the failure of outsiders in trying to reform institutions and the difficulty of introducing specific and sustainable micro reforms when the broader institutional framework and society's belief systems are hostile to change. Shirley argues that cross-sectional studies would need to become more specific about the institutions and settings they measure while case studies would need to become more comparative if we are to bridge the gap between observed regularities and adequate theorizing.

Stanley Engerman and Kenneth Sokoloff concur that institutions are critical to any explanation of economic development, but also find that institutions are to some extent endogenous to changing circumstances. They argue that colonists from Britain or Spain arrived in the New World with similar beliefs and cultural heritage to individuals in their home countries, but confronted different conditions and as a result evolved different institutions. If institutions are indeed endogenous, then those who make strong claims for the effects of institutions on economic growth face a challenge to defend their thesis. Advocates for institutional determinants of growth also face a challenge: to explain why very different institutional structures are sometimes equally conducive to growth and, symmetrically, why similar institutions lead to very disparate outcomes. Engerman and Sokoloff suggest that perhaps what matters for growth is not any particular institutional design but how well institutions are adapted to their specific settings and how flexible they are in adapting to changing circumstances.

Peter Murrell's chapter on transitional economies challenges the pessimism inherent in much of the literature, which assumes that basic institutions usually change only very slowly. Although he finds that the transition experience supports many of the premises of NIE, he also presents evidence that institutions in the transitional economies of Eastern Europe have improved very rapidly, thanks in part to political consensus on the need for change. The demand for institutional change from voters and businesses was an important stimulus in Eastern Europe, but it was influential politicians, academics, and state officials who designed the details of institutional transformation in these countries according to Murrell. These "institutional entrepreneurs," acting with advice from foreign actors, altered institutions in a process that was surprisingly insulated from politics and demand pressures. Even more strikingly at odds with the assumptions of much of the literature on development and institutions is his finding that firm governance changed more slowly than some state and state supported institutions such as political institutions (e.g. election processes), the legal system (e.g. laws protecting property rights, corporate governance, rules for courts), and regulation and enforcement by quasi-government bodies (e.g. central banks) and private bodies (e.g. arbitration courts or accounting standard boards).

Philip Keefer and Steven Knack analyze social capital and norms, which are often assumed to be among the most rigid of institutions. Looking in particular at norms of trust and trustworthiness, they find that these vary widely across countries and have a significant effect on economic outcomes and development. Although written laws and rules enforced by government, courts, or other third parties and by reputation can affect or substitute for trust, these are not the only explanation for why levels of trust and trustworthiness vary so widely. Social homogeneity and membership in groups or networks also affect trust norms. Although that suggests that norms of trust will be difficult to instill where these forces are absent, Keefer and Knack argue (as does Keefer, 2000) that family, religious or ethnic norms sometimes substitute for wider norms. They also point to evidence that income equality and education affect trust and other development-producing norms, suggesting that norms are not as immutable as they are sometimes portrayed.

In the last chapter of this section, Avner Greif examines the factors determining the dynamics of markets and market-supporting institutions. His analysis describes the key role played by two sets of institutions. First are "contract-enforcement institutions", the complex set of institutions required for securing exchanges. "Contract-enforcement institutions" can be organic, private-order institutions that arise spontaneously from the pursuit of individual interests or designed private- or public-order institutions that are intentionally created to secure contracts. Second are "coercion-constraining institutions," rules that constrain those with coercive power from abusing the property rights of others. Without coercion-constraining institutions economic actors will be unwilling to bring their goods to market for fear that the rulers or other powerful actors will expropriate them. Greif describes how markets and political institutions co-evolve through the dynamic interaction of these two sets of institutions. Referring to historical examples, such as the contrast in the organic institutions implemented by the Maghribi traders and the designed institutions used by the Genoese, he shows the different forms that contract enforcement and coercion constraining institutions can take and how they explain the dynamics of markets and political institutions. As we described earlier, this problem of controlling coercive power is an issue central to several other contributions as well.

10. PERSPECTIVES

The last section of the Handbook deals with new ideas and approaches, suggestive of NIE's future paths. A clear track toward greater interdisciplinary approaches is exemplified in both chapters in this section.

In their chapter, Nee and Swedberg examine the complex relationship between new institutional economics and economic sociology. They argue that there is much less interaction between these fields than there should be and that both sides would gain from deeper exchanges. A short review of recent developments in economic sociology confirms the existence of significant overlapping areas. Economic sociology's critical perspective on behavioral assumptions in mainstream economics and its emphasis on the need to embed individual choices in the social networks that shape them are surely mirrored in similar concerns among new institutionalists. Similarly the analysis of networks, markets, and firms as social constructions rooted in institutional settings, the sociological approach to law and economics or finance, and other recent themes in economic sociology overlap with ongoing research in NIE. Nee and Swedberg propose a sociological analysis of how formal and informal rules are shaped by norms and conventions, which themselves manifest shared mental models, an analysis that could substantiate North's concept of institutions. The authors conclude with a challenging model of interactions between institutional environments, modes of organization, and social groups that builds on and expands the model proposed by Williamson.

We conclude with Elinor Ostrom's chapter, which presents a challenge to new institutionalists as daunting as North's challenge at the outset of this Handbook. Ostrom calls for institutionalists in all social sciences to seek out universal components for markets and hierarchies and develop theories of human behavior in diverse settings. Ostrom draws on the foundations of many disciplines to devise a framework (IAD, Institutional Analysis and Development) that can be used in analyzing any type of institutional arrangement, which she and others have applied to a variety of different arenas. The theoretical and empirical tasks she sets are difficult and complex, but her own large body of research shows that they are feasible if social scientists are ready to rise above the specialized language, knowledge and assumptions of their sub-disciplines.

Reading these chapters, one gets a sense of the richness of new institutional economics. Notwithstanding the diversity in themes and approaches from different disciplines, a hard core emerges. Transaction cost is a key concept that has surpassed the limited role it initially played in economics, nurturing new avenues of research in political science, sociology, legal studies, management, etc. Also at the core of NIE is a common methodological concern with comparative analysis of institutions at all levels, from broad societal norms or rules governing the polity to specific details of contracts and firms and all that lies between. At the same time many puzzles are still to be solved and these chapters define an ambitious research agenda. From the outset this Handbook intended to summarize the developments in the subfields of New Institutional Economics, raise questions that leaders in the field consider crucial, and supply scholars with tools for exploring answers to these questions. The future task—to fill in the blanks—now belongs to the readers of this Handbook.

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