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ABSTRACT

The New Institutional Economics (NIE) has its early roots in Cliometrics. Cliometrics began with a focus on using neoclassical theory to develop and test hypotheses in economic history. But empirical consideration of economic and political development within and across countries is limited, absent consideration of the institutional context. The NIE as applied in economic history first focused on the roles of transaction costs and property rights. From this micro-institutional perspective, the NIE expanded its focus to the role of institutions and norms on economic development as well as how economic forces along with political institutional variance influences outcomes both within and across countries. This involves considering both forces that impede and promote economic and political convergence across countries as well the forces that determine a transition to a new economic or political trajectory altogether. Testing for the determinants of economic and political development is plagued with omitted variables and endogeneity concerns, a constraint which has recently prompted scholars to draw on complexity theory to further supplement the NIE and Cliometrics.

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I. Introduction

New Institutional Economics (NIE) emerged directly from Cliometrics. Douglass North was one of the founders of Cliometrics and one of its more vocal proponents. North is also known as the Father of New Institutional Economics. In our publications in the area (Alston et al 2018), we use the term institutional analysis because it enables the analysis of social outcomes beyond just the economic, and therefore can draw upon insights from scholars in other fields who have also long studied governance. Early Cliometrics was about using neo-classical economics to frame a problem, develop hypotheses and test them - North measured changes in ocean shipping rates, Fogel the importance of the railroads and Fogel and Engerman the profitability of slavery (North 1958, 1968; Fogel, 1962,1964, Fogel and Engerman 1974). In the 1960s and 1970s North championed the importance of using relative prices to develop hypotheses and then test them quantitatively.[1] Throughout North's career, he was fundamentally interested in understanding the causes of economic (and later) political development. His emphasis on the use of relative prices to motivate and test hypotheses was driven by his sense that if we could measure how societies changed over time, we could better understand development.

By the late 1970s, North became disillusioned with the ability of standard neo-classical price theory to help in his pursuit. So, he drew on insights from his colleagues, Yoram Barzel and Steven Cheung to broaden theory to include transaction costs and property rights, two fundamental concepts in NIE. North's early work in NIE, e.g., *Rise of the Western World***,** with Robert Thomas, still relied on relative prices as the agent of change and how they impacted property rights. Over time, North found that his reasoning in *Rise of the Western World* was insufficient for understanding development. His next two books were much more pathbreaking with respect to NIE, *Structure and Change in Economic History and Institutions***,** *Institutional Change and Economic Performance*. In these works, North added to the concepts of transaction costs and property rights by zeroing in on institutions, ideology (beliefs), and a theory of the state, *inter alia.* North focused on institutions as given and traced out how they impacted economic development.

Meanwhile other scholars were working on the determinants of political institutions. Early pioneers in the 1960s include Buchanan and Tullock (1962), and Mancur Olson (1965),

[1] This draws from Lee Alston's experiences as a graduate student at the University of Washington from 1974-1978.

who questioned the "public interest" as the cause of laws (institutions) and instead discussed the roles of special interests. We consider this the demand side of institutions. Other scholars, many in political science, focused on the supply side of institutions, e.g., Congress, the executive branch, and the judiciary, and how they affected political institutions. In our essay, we join the conceptual forces from institutions to economic performance and then from economic performance to institutions to show a dynamic which generally sustains the status quo. But some countries break away from the status quo, and in Section IV we discuss the role of shocks, beliefs, and leadership in making a critical transition to a new dynamic, which can facilitate a departure to a higher or lower level of economic and political development.

II. Institutions and Norms to Economic Performance

Our starting point takes political institutions as given or fixed, which enables a fine-grained analysis of the impact of economic institutions and norms on transaction costs and ultimately economic performance. We use the term economic performance rather than economic growth because economic performance can be judged by economic growth, economic inequality, and economic opportunity. In Figure 1 we illustrate the concepts relevant to the linkage among norms and institutions and ultimately economic performance.

Our analysis of economic performance begins with how institutions and norms shape property rights. By institutions, we mean rules made by a recognized authority who chooses how and the extent to enforce the rules. Norms are beliefs that result in patterns of behaviour that a sufficient subset of the population follow. Littering is a case that illustrates the difference in institutions and norms. In most societies there are laws, i.e., an institutional rule stipulating that a person who litters may be subject to a fine. In many societies there are norms against littering: it is simply wrong to litter. In the case of littering, norms and laws are complementary but we believe that the norm against littering is more important than the law against littering because the law is difficult to enforce (Alston et al 2018).

Institutions and norms define property rights, the specification and enforcement of which – known as transaction costs – ultimately determine economic performance. "Property rights" describe the rights, privileges, and other relationships associated with property, not just physical property but rights in general. If transaction costs were zero, then it would not matter who received the initial rights because actors could bargain to put property rights into the hands of those who value them the most. But, as Coase (1960) forcefully argued,

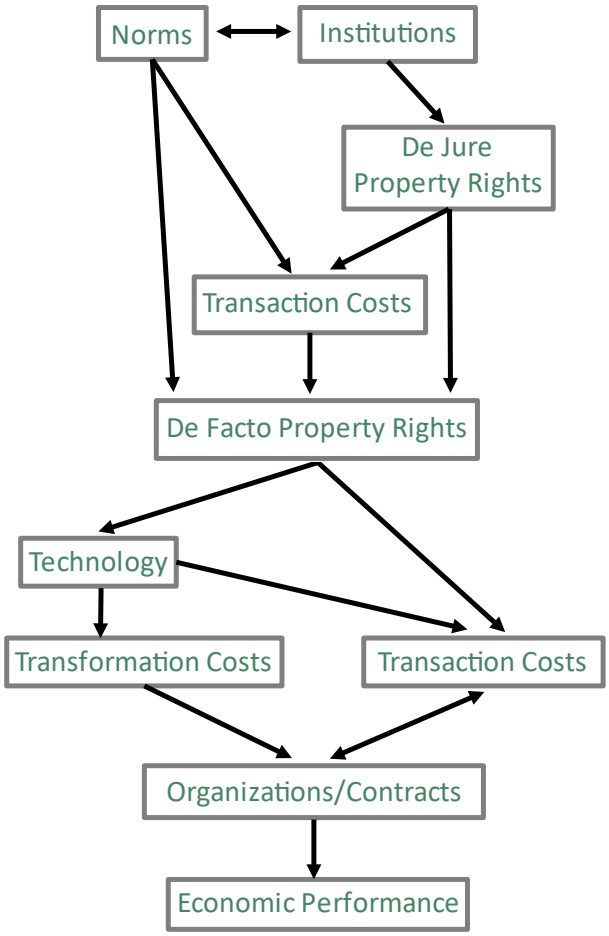
transaction costs are never zero, so it matters who holds the initial rights. Put differently, in a world of positive transaction costs, initial institutional choices can have profound distributional and allocational consequences due to the costs of "putting the matter right". This is known as the "Coase Theorem," even though Coase encouraged economists to study the world of positive transaction costs.

Institutions and norms result in a set of de facto property rights, defined as the rights to use, consume, obtain income from, and alienate the attributes of resources. De facto property rights differ from de jure property rights, which are the rules made by recognized authorities. Corporations and even families have de jure and de facto property rights. De facto property rights give rise to transaction costs: the costs of transfer, capture, and protection of property rights. De facto property rights represent the actual property rights in play. For example, there are laws prohibiting people from stealing your car or other possessions, yet laws are not enforced costlessly, and people supplement the law by not leaving keys in the car and locking the car to help deter thieves.

Our definition of transaction costs includes any costs associated with organizing human activity, regardless of whether the activity occurs in hierarchies or is coordinated via the price mechanism. Coase (1937) and Coase (1960) are the foundation of this analysis and are two sides of the same coin; Coase (1937) shows that if transaction costs are zero, the particular method of organizing production is irrelevant to economic efficiency, and Coase (1960) shows that if transaction costs are zero, the initial distribution of property rights is irrelevant to economic efficiency. The true lesson of Coase is that since transaction costs are never zero, the organization of economic activity and the distribution of property rights matter deeply for economic efficiency.

De facto property rights can directly impact technological change. For example, strong patent laws (a property right) can promote technological change because the pay-off to certain types of inventive activity are greater. For a discussion and tests of the impact of patents on inventive activity see Khan (2005), Kahn and Sokoloff (2001) Moser (2005) and Mokyr (1990). Technology can also impact transaction costs directly which in turn can affect contract choice. For example, Alston (1981) showed that mechanization (tractors) in Southern agriculture reduced the monitoring costs of labor compared to farms utilizing mules and horses and led to a relative increase in wage contracts over sharecrop and tenant contracts.

Figure 1. Institutions and Economic Performance



A. Transaction Costs

The relative lack of unitization of oil fields in the historical U.S. can be attributed directly to transaction costs (Libecap and Wiggins 1984, 1985; Wiggins and Libecap 1985; Libecap 1989). Unitization of oil fields is the most cost-effective method for pumping oil on fields that have multiple owners and unclear subsurface property rights which has been the case in many private fields in the United States. Unitization means that the decision on how many wells to place on a field and when to pump is made by a central authority who then pays to those on the field their proportional share typically based on the acreage that they have on the field.

Unitization was rare in the U.S. despite the productivity gains because of the transaction costs associated with voting for unitization which effectively assigned unit shares or property rights.

The laws pertaining to oil production on private lands vary according to states but in all states rights to oil are based upon extraction which means considerable aggregate losses because of the incentives faced by surface holders over the oil field. Surface holders are motivated to pump as fast as possible to increase their share of oil field rents. Doing so results in huge aggregate losses. Losses occur for several reasons: 1) there are redundant wells with the U.S. having historically more wells than the rest of the world where unitization is the norm because oil production is typically on government land; 2) the price of oil was depressed relative to long run prices because of pumping too soon; 3) because of pumping early there was excessive above ground storage of oil relative to the cheaper alternative of leaving the oil in the ground; 4) there was reduced recovery of oil because of the dissipation of pressure from too many wells; and 5) because of the U.S. pumping too early it likely affected foreign policy with respect to the Middle East. To give but one example of economic losses associated with an inferior institutional status quo, the Director of U.S. Bureau of mines in 1914 estimated the annual losses of excessive drilling at $50 million (¼ of US production)

Why did dissipation last so long? What were the possible solutions? First, consolidation to one owner would have solved the problem but this seldom happened because of the hold-up problem with one or several surface rights holders refusing to sell. Limited information about potential subsurface values made it difficult for parties to reach agreement on unit shares. A second solution could have involved what is called pro-rationing whereby all parties remain over the field but fix total production and assign quotas based on surface rights, often determined by the number of existing wells. This second potential solution can help reduce dissipation but there would have still been excessive wells and an incentive to pump before one's neighbors. A third solution is that of unitization, whereby a single firm develops the field and all share in the returns, generally based on proportion of surface rights. These three solutions were rare and by the time they did occur most of the dissipation had already occurred.

The explanation in Libecap (1989) for why unitization (the most cost effective) was rare had to do with the transaction costs of determining the amount of oil underground and under any one surface holding. It was an information cost problem coupled with hold outs. The laws associated with unitization varied across oil producing states. Oklahoma, Texas and Wyoming

produced the bulk of U.S. oil in the 20th century and the laws for unitizing a field varied considerably. In Wyoming a simple majority of surface holders during exploration was sufficient to force unitization on surface holders. In Oklahoma 63% of landholder's assent was required for unitization. In Texas this required unanimity. The resulting production in 1975 varied predictably with the laws on unitization: Wyoming 82%; Oklahoma 38% and Texas 20%. These results show that the laws (institutions) for establishing property rights have important efficiency implications because of the incentives and resulting transaction costs limiting early unitization. This problem arises in almost any common pool setting, underlying the challenges faced to reducing the aggregate losses of open access production.

B. **Property Rights**

Similarly to how different institutional regimes can directly influence the transaction costs associated with developing a scarce resource, so too can analysis of institutional variation in de jure property rights shed light on comparative economic performance. Vexingly, though, just as changes in relative prices can change the benefits of additional institutional definition and enforcement of property rights, so too can anticipated gains from improved de jure rights lead economic actors to invest to secure these rights. This endogenous knot led to a lineage of studies seeking to identify the specific role of de jure property institutions on economic development. While a summary of all the studies in this literature exceeds the scope of this survey chapter, recent studies still display the richness of this analytical lens for understanding historical economic performance. In the US West, Alston and Smith (2022) display persistent negative effects (including spillovers) due to uncertainty in property title, while Leonard et al (2020) show how fractionation results in consistently inferior outcomes relative to privatization and tribal control on Native American reservations.

Taking a given set of property institutions as given, though, the economic benefits from more secure property rights have been summarized as decreased expropriation risk, enhanced access to credit, and greater expected gains from trade (Besley 1995). Each of the channels by which more secure rights can improve economic outcomes predicts greater levels of investment given more secure rights. With lower risk of expropriation, landowners are more willing to make durable investments that increase productive capacity. With greater access to credit, landowners will be able to secure the financing necessary to increase productive capacity in the medium term by promising the lender a share of increased future revenues with such loans secured by the land

as collateral. Finally, given more potential future purchasers due to the relative security of de jure rights, landowners should again be willing to invest more today in anticipation of selling the land in the future.

One example of empirical analysis in this area surrounds the comparison of different forms of land tenure in Ghana. Besley (1995) leverages variation in land tenure arrangements between a cocoa-growing region, Wassa, and a shallot-growing region, Anloga. Using a survey methodology, Besley derived a quantitative estimate of the extent of property rights enjoyed by individual land users, as well as whether these rights were subject to limitations on transfer to those within a particular familial lineage. For cocoa growers, land improvements were number of additional trees planted, while shallot growers' land improvements tended to involve fertilization, irrigation, and mulching in addition to planting additional shallot beds. The survey data Besley collected enables granular identification of the specific land rights present on a given plot, which coupled with reporting on aggregate land improvements and the last time a land improvement was made, enabled identification of the effect of more secure title to land on propensity to make productive investments.

In the case of cocoa farmers in Wassa, the results broadly suggest an effect of title security on propensity to invest in additional cocoa production. More specifically, though, the approval of familial lineage itself was predictive of greater investment, emphasizing once again the crucial role for transaction costs as an impediment to economic activity. Furthermore, Besley identifies significant clustering of tree cultivation, as well as a propensity to plant additional trees conditional on such an investment having been made previously. While outside the ability of Besley's data to identify, these are suggestive of reverse causality and potentially omitted variables that the endogenous knot of property rights and economic performance present to interested scholars. The case of Anloga's shallot growers initially seems to support the finding that greater investment follows greater levels of property rights but loses statistical significance when subject to a similar instrumentation technique as was used to identify the effects more clearly in Wassa. While possibly attributable to a small survey sample size weakening the statistical power of Besley's second regional case study, this early work on the effects of property rights on economic performance also displays how challenging rigorous identification can be in the face of the many confounding and endogenous factors that may determine economic development at a particular moment in time. Nonetheless, the findings are one early

example of how in certain contexts, better property rights have been shown to have an identifiable effect on economic activity.

C. ***De facto* Property Rights**

While de jure property rights can be an important determinant of economic performance, in almost all instances claimants of rights expend some resources to secure their rights – the study of *de facto* rights is therefore also an important pursuit for understanding comparative economic performance over time. Grazing on the public domain in the Western U.S. represents a case of *de facto* rights deviating considerably from *de jure* rights. Grazing was primarily on land west of the hundredth meridian and began in earnest in the 1860s. This land was west of the homesteaders at first. Cattlemen's associations formed throughout western ranges, but the associations did not own the land because the U.S. Government had established the price of land at $1.25/acre – at this price it was not profitable to buy but it was profitable to use provided you could internalize the externality caused by overgrazing by preventing new entrants of cattlemen and limiting livestock numbers for those ranchers on the range (Alston et al 2012). Ultimately, ranchers also had to prevent homesteaders from encroaching on their claims. The ranchers did not have a *de jure* property right to the land, but they had a *de facto* property right because until the early 20th century the federal government let the ranch industry use the federal land.

Those on the range received rights based on prior use to water and homestead claims. Cattlemen's associations limited overgrazing and overstocking by assigning ranchers a given number of cattle and enforcing the rights through a common roundup and separating cattle by their brands. The cattlemen's associations were successful in preventing overgrazing. On ranges with cattlemen's association, the cattle were heavier and could withstand hard winters better than on ranges that were overstocked. We can also infer success from the fact that owners of range rights could sell their rights and those with range rights made site-specific investments which they would not do if their rights were not secure.

As homesteaders moved westward from the 1870s on, they were prevented from settling through intimidation. Potential homesteaders were told by cattlemen that they would be shot if they tried to settle on their ranges. Cattlemen's associations had a much greater violence potential than the homesteaders. The homesteaders petitioned the General Land Office to enforce their *de jure* claims but the office ignored their pleas as did their representatives in Congress. Ultimately, President Theodore Roosevelt, ironically a former President of cattlemen's

association in North Dakota, enforced the rights of homesteaders by sending the U.S. Cavalry to cut fences and allow the homesteaders to enter. The cattlemen moved further west onto more arid land because the U.S. cavalry had a violence potential greater than the Cattlemen's associations (Alston et al 2012).

This example illustrates the large transaction costs to actors trying to establish de facto property rights. But this is not unusual, Libecap (1989) analyses the transaction costs to establishing property rights in mineral rights, land, fisheries, and oil. In all cases there is dissipation of the resource though the amount of the dissipation varies across the resources.

D. **Norms**[2]

Henequen is a fiber extracted from the henequen agave plant cultivated primarily in the Yucatan in Mexico. Henequen was the leading agricultural export in Mexico from the mid-19th century to the early 20 century. By 1916 790,000 acres were under cultivation. Henequen was used to make twine for the McCormack harvester. Muckrakers in the U.S. denounced the *hacendados* for imposing "debt peonage" contracts on their workers. Without understanding norms, it is impossible to understand the debt contracts. Mayan workers were the primary workers in the henequen industry. In Mayan culture it was extremely important to have a large public wedding, which became a norm. Neither workers nor their families had resources for a wedding. To fill the void, *hacendados* paid for a lavish public wedding and recorded the wedding expense as a debt, though if the workers remained on the *hacienda,* they were not required to pay the debts. If a worker's spouse died and he remarried the *hacendado* would pay for another wedding. The debts expired with the death of workers. In rare instances some competing *hacendados* bought the debts of workers to secure their services. In addition to a wedding, workers received other paternalistic benefits from the *hacendado* including garden plots, care when sick and retirement. Why would most Mayan workers opt for a debt contract rather than alternative employment? First, there was little alternative employment in the Yucatan, and you could be forced to work on public projects. Even worse for workers was the high likelihood that they would be drafted into the military and sent to Northern Mexico to fight. Most Mayan workers opted for employment in the henequen industry as the best of their bad options. In return for paying for weddings what did the hacendado receive? A loyal work force and one that had lower monitoring costs for work effort because workers did not want to be fired.

[2] This section draws on Alston Mattiace and Nonnenmacher (2009) and Mattiace and Nonnenmacher (2014).

Without understanding the norms of the Mayan workers for a lavish public wedding, one could easily slip into thinking of the debt contracts as exclusively coercive.

E. Institutions and Overall Economic Performance

To enable economic prosperity, societies need to prevent expropriation by the powerful. That is, governments need to credibly commit to secure property rights for their citizens. In what is the most-cited article in the *Journal of Economic History*, North and Weingast (1989) chronicle the impact of institutions from the Glorious Revolution in 1688 that constrained the confiscatory behavior of the Crown. Prior to the Glorious Revolution, the Crown would tax the Lords to pay for war and other expenditures. Following the Glorious Revolution, taxes proposed by the Crown had to be approved by Parliament. Over this same period, the courts also became independent of the Crown. By vesting tax authority to Parliament, England could credibly commit to paying its debts because Parliament would not allow confiscatory expenditures. The result was that England could borrow at lower rates than France because lenders were more confident of being paid. This was one of the factors that enabled England to defeat France. It also led to greater investment overall and ultimately the industrial revolution. This interpretation is a dramatic example of the importance of secure property rights and its impact on overall economic and political development.

The storyline of North and Weingast has not gone uncontested ((Allen, 2011; Cox, 2012; Hodgson, 2017; McCloskey 2010; Pincus & Robinson, 2011; Stasavage, 2002; Sussman and Yafeh, 2004). We use the case because of its clear use of the concepts of time inconsistency and credible commitment with respect to secure property rights.

III. Economic Performance to Political Institutions

At any moment we can take economic performance as an outcome as shown in Section II and Figure 1 and trace how it determines political institutions in Figure 2 (i.e., the laws made by executive and legislative bodies). In this section we take as fixed the basic constitutional rules which are an umbrella constraining organizations and their actions. Political institutions include the laws and regulations emerging from the demand forces (special interests and citizens) and supply forces- the executive legislative process, the bureaucracy, and the judiciary. Using demand and supply does not connote that there is a unique outcome but allows us to separate the non-governmental actors, i.e., citizens and special interests, from the governmental actors, i.e., the executive, legislature, bureaucracies, and courts.

Many of the concepts used for economic exchange discussed in the previous section are relevant for political exchange, e.g., property rights and transaction costs. In Figure 2 we display a temporal framework for the process of determining political institutions. On the sidebar we show a constitution overshadowing the process which indicates that policy making occurs under an overarching set of constitutional secondary rules. In many countries the constitution is not binding but in the high-income countries the constitution tends to bind though legislation is passed that may be questionable and ends up in court to rule on its constitutionality. We start with a given level of economic performance which determines income growth, income distribution and a level of income inequality. These outcomes create relative winners and losers who may use the political system to redistribute in their favor.

In general, the more concentrated the special interests the more likely they are to lobby Congress. However, Libecap (1992) analyses the case of the Chicago meatpackers a highly concentrated group and they lost out to the more numerous but still powerful slaughterhouses and butchers. The result was the Meat Inspection Act which only affected those slaughtering meat and shipping interstate, i.e., the meatpackers. Moreover, these winners and losers to a particular legislative decision can include citizens at large as well as competing special interest groups. Citizens tend not to directly lobby but they have advocates to the extent that there is political competition (Denzau and Munger). Candidates and incumbents will alert citizens that they are their advocates and will distribute benefits to them. Economic performance benefits some groups and harms others. Both will lobby. Those who benefit will lobby government to

keep their benefits and those harmed will lobby government to change the institutions to reduce these harms.

The executive and legislature are the primary organizations for "supplying" legislation, i.e., political institutions. Most countries in the world have an executive and legislature though the executive is very dominant in authoritarian countries. Despite having seemingly similar functions, the executive and legislative rules can vary enormously. There are parliamentary systems versus presidential and within presidential there are strong or weak executive powers. Policies are not costlessly implemented by the executive and legislature. In most countries the executive appoints the high-level bureaucracy, appointments which may be subject to legislative approval. Lower-level bureaucrats are frequently insulated by a civil service. Implementation by bureaucracies itself matters. Bureaucracies can be inept or corrupt which drives a wedge between the institutions passed and their implementation. Bureaucracies vary enormously across countries but tend to be more honest and competent in more developed countries.

More observably given the role of the judiciary in interpreting law, legislation tends to face a judicial test in many countries. For this reason, it is also important to analyse how the judiciary functions. Like bureaucracies, judges can be competent or inept and honest or dishonest. Judiciaries across countries also vary in their independence. The incentives also vary depending on whether the judges are elected or appointed. All these factors will influence judicial decision making.

These overarching categories – citizens, special interests, executives, legislatures, judiciary, and bureaucracies – cover much of the process of determining political institutions. Other organizations, not covered here, may also play roles. Among other groups, these include the press, district attorneys, police and the military, to name but a few of the powerful organizations in society that we do not consider explicitly in our analysis here.

Figure 2. Determinants of Institutions

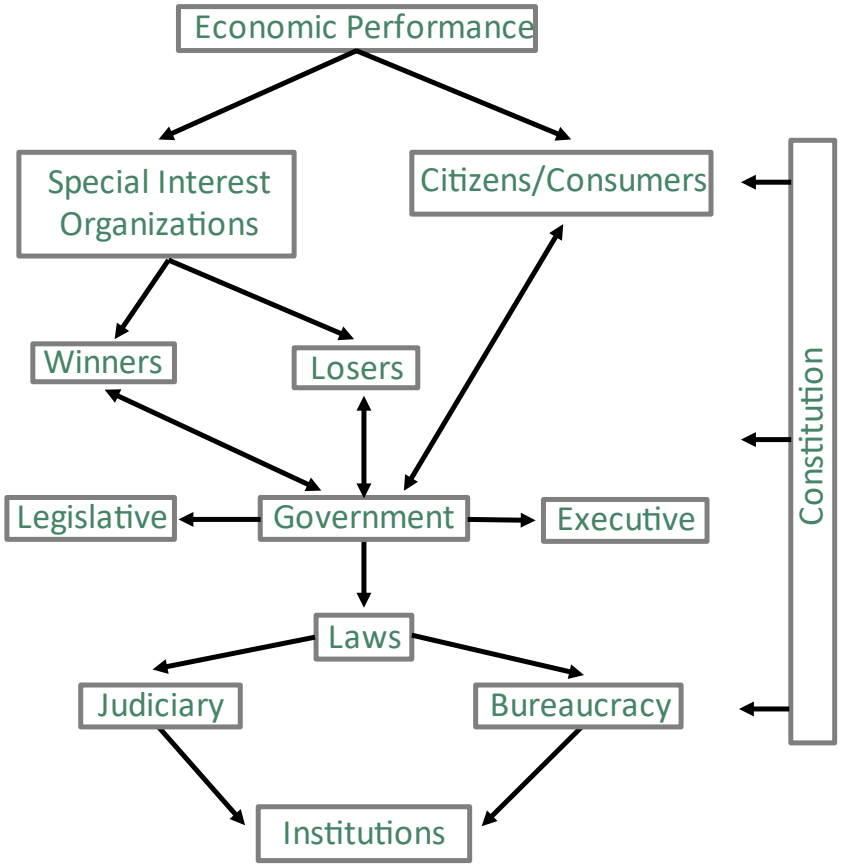


Figure 2 describes how political institutions emerge from the interaction of citizens, special interests, politicians, bureaucracies, judiciary, and others. These institutions then affect economic performance, as shown in Figure 1 and as discussed in the previous section. From this interaction between institutions and performance, it is common for many regularities to emerge across time and countries, leading researchers to make broad statements or even to claim general 'laws', such as, 'the more developed a country the greater the probability it is democratic' (modernization theory), or 'as country's income grows, pollution first increases but after a point it goes down' (environmental Kuznets curve), or 'there is a negative relationship between inflation and unemployment' (Phillips Curve). At times these results may seem pervasive, but it

is important to remember that the impact of institutions on performance is conditional on the higher order institutions that we have called 'constitutional rules' (see Figure 2). Different constitutional rules can lead to very different dynamics of the endogenous relationship between performance and institutions.

Robinson and Torvik (2011) have a similar approach that emphasizes how many well-known and celebrated results in economic analysis and in economic history are often wrongly accepted and expressed as general and universal, when they are, in fact, conditional on quite specific institutional structures of that society. They call their approach 'institutional comparative statics' and describe their contribution as emphasizing "that institutional quality or strength influences the way that the political economy equilibrium will respond to shocks and changes in the economic environment" (Robinson and Torvik, 2011: 8). This is essentially the same point of Figure 2 with 'constitution' being understood as 'institutional quality or strength'. That is, depending on the constitutional rules that constrain and enable the interaction of the political actors, shocks to the system will lead to the emergence of very different institutions. It is useful to consider some of the examples explored by Robinson and Torvik to illustrate this principle.

The Turner hypothesis (Turner, 1920) postulates that American exceptionalism, development and democracy was to a large extent determined by the existence of a frontier of free land during much of the country's formative era. Frontiers, with all their harshness and possibilities, imbued settlers with a strong culture of individualism, grit, and drive for betterment without reliance on government or others. This idea is compelling and has influenced academic work, popular culture, political speech and American identity and self-perception more broadly. It is so compelling that it is often interpreted as applying generally to any context where there are frontiers. But examination of historical frontier processes in other countries quickly reveals very different dynamics and outcomes. Robinson and Torvik (2011: 3) point out that elsewhere in the Americas, where expansion into frontiers played a similarly important role in the development process, the result was not social mobility, equality, and democracy, but rather concentration of wealth and power in extractive elites, underdevelopment, and generalized poverty. The difference, of course, is due to the very different institutional contexts, as described in Figures 1 and 2, found in the United States and in much the rest of the Americas during those frontier periods. As noted by Robinson and Torvik (2011: 9), "we should stop hoping for unconditional

comparative static results and think about how institutions condition the impact of perturbations of an equilibrium".

Another example given by these authors is the notion of a resource curse, where the existence of large reserves of minerals and natural resources in a country, counterintuitively reduces economic growth and stifles development. Once again, the empirical regularity that high resource countries tend towards failing macroeconomic conditions, poverty, war, corruption, autocracy, inequality, and other perverse conditions is so compelling that it is hard not to take the notion of a resource curse as inexorable. But once again it is not hard to think of current countries (e.g., Norway) or historical processes (e.g., Britain and the US) where this dynamic did not play out and instead abundant natural resource were a crucial part of successful development. The difference, once again, lie in the 'constitutional rules' and the structure through which the supply and demand for institutions operate in each case. Countries with rule of law, checks and balances, and inclusive forms of economic and political participation have greater chances of turning the availability of natural resources into a blessing rather than a curse. Robinson and Torvik suggest that foreign aid to poor countries has much the same impact as a resource boom and can have positive or negative impact of economic growth depending on the recipient country's institutions.

The divergent impact of the Black Death in the fourteenth century Europe, which reduced the population by approximately half, is another stark example of institutional comparative statics. While in Western Europe this demographic shock increased the relative price of labor leading to greater bargaining power for workers and initiated the transition of feudalism to capitalism, in much of Eastern Europe it led to the second serfdom and greater oppression of workers (Robinson and Torvik, 2011: 27). Why did the same shock induce opposing effects in different parts of medieval Europe? While the detailed answer to this question is disputed and nuanced, the authors reiterate here the same fundamental explanation that "the impact of the Black Death was conditional on the initial institutional equilibrium" (pg. 29)

As a final example proposed by these authors, consider the new opportunities to colonizing European countries that were unleashed by the innovations in navigation and the discovery of the New World. The impact of these opportunities was very different in different countries, even among these Atlantic traders that had similar geographic access to the ocean (Acemoglu, Johnson and Robinson, 2005). While this shock initiated economic growth in Britain

and the Netherlands and propelled them towards the industrial revolution, in Spain and Portugal it did not have this effect, even though these countries had a great head start in the colonial race. The explanation for this differential impact, according to this analysis, is not in the direct effect of the wealth that was brought from the colonies to the metropolises. Rather, the important distinction lay in how the new wealth affected the political equilibrium in each country. While in Spain and Portugal the colonial enterprise belonged to the king, increasing their absolutist power, the British and Dutch colonies enriched a merchant class that increasingly sought checks and balances to constrain royal power. Where constitutional rather than absolutist monarchies were enabled, financial markets, investment and innovation developed and paved the way for the industrial revolution. In this example it is the greater pre-existence of a merchant class to be empowered by the colonial shock that differentiated the initial political equilibrium across the different countries and provides the different comparative statics results.

Robinson and Torvik provide several other examples, and it is not hard to think of many additional results in the literature that, though often treated as unconditional and general, on closer inspection rely on rather specific background institutional conditions to materialize. For example, the self-organization by communities of governance modes to efficiently manage common pool resources is conditional on a pre-existing political equilibrium, without which the tragedy of the commons is more likely (Ostrom, 1990). Or the differential impact of the fall of communism on different countries in Eastern Europe and Russia see (Djankov, et al. 2003).

A. Electoral Institutions and Economic Performance

Relaxing the assumption that political institutions are fixed enables interested scholars to explore the extent to which political institutional variation can influence economic outcomes. One long-studied example of this distinction surrounds political budget cycles (PBCs), which involve the idea that incumbent politicians (especially the executive) can use their discretion over public finances to increase government spending in advance of election years to enhance their chances of reelection (Alesina and Roubini 1992). One finding in the literature on political budget cycles is a link between election years and both gross national product (which includes public spending) and unemployment (Alesina and Roubini 1992). In the aggregate, government deficits also have been found to increase by approximately 1% of GDP in years in which there is an election (Shi and Svensson 2006).

At this level of aggregation, though, the uniformity of these results across nations and political contexts may not correspond to the way in which more specific political institutional variation can influence public fiscal outcomes. For example, party affiliation and term limits have also played an important role in determining economic policy itself. More specifically, in U.S. states, incumbent governors ineligible to stand for election due to a term limit have significant effects on taxes, minimum wages, and government expenditures. Consistent with the Democratic party's overarching ideology on the role of government in the economy, Democratic governors that were ineligible for election increased taxes, spending, and unemployment benefits. In contrast a Republican governor ineligible for election tended to be associated with reductions in minimum wages within the state (Case and Besley 1995).

Furthermore, from a global comparative perspective, political budget cycles have been found to be stronger in new democracies and developing countries (Shi and Svensson 2006). This is consistent with the related finding that divided government tends to make public debt limits more likely to bind in the face of political budget cycle pressures, though the effect of divided government on moderating PBCs is not present in developing countries where budget laws tend to be ignored (Streb and Torrens 2013). Taken together, all these findings suggest a significant, albeit complex, effect of electoral cycles on government spending, and therefore, economic outcomes more generally. The progression of this literature also displays the importance of considering granular political institutional variation to better understand the relationship between government processes and historical macro and micro economic performance.

B. Special interests

One of the early contributions in political economic theory surrounded the ability for smaller groups to influence democratic decisions in an outsized way (Buchanan and Tullock 1962; Olson 1965). This spurred the development of the field of public choice, understanding how government decisions are wrought the way they are in practice. Often deemed special interest capture, this important insight about concentrated interests led to the recognition that unexpected coalitions of these interests can be important determinants of unpopular outcomes. This phenomenon was deemed "bootleggers and Baptists" in reference to religious groups and illegal alcohol producers' aligned stance in support of alcohol prohibition (Yandle 1983) but can

be seen present in the coalition of interests that led to marijuana prohibition in the early 20th century as well (Alston et al 2018).

While the study of public choice processes spawned a journal dedicated to the topic (and many publications elsewhere), the coalition dynamics of special interests are a field of study that continues to generate insights about the complex interplay between political institutions and economic actors who stand to gain or lose from institutional change. While alcohol prohibition on the national level in the US was repealed in 1933, many counties and municipalities around the country still ban alcohol sales. A recent exploration of the dynamics of successful and failed changes to local alcohol prohibitions in Arkansas clearly indicates the importance of coalitions of special interests in determining public institutional definition of economic activity.

Due to reporting requirements for contributions to political activity in the state of Arkansas, the specific interests who have given funds related to a public petition process can be identified associated with their level of contribution. Horpedahl (2021) identifies more subtle coalitional dynamics than might first otherwise be expected from a simplistic public choice narrative. In cases where adjacent wet counties contribute financial support to a campaign opposing the permission of the alcohol sales in a currently dry county, religious groups opposed to alcohol consumption are less likely to contribute to such a campaign and instead provide non-financial support to the campaign. The non-financial support Horpedahl identifies included newsletters intended to coordinate voter opposition to legalization of alcohol sales, as well as advocacy from religious educational institutions such as universities. In cases of failed legalization attempts where alcohol sellers in adjacent counties did not contribute, this made financial contributions of religious organizations more likely to occur. Furthermore, in cases where alcohol sales were successfully legalized, Horpedahl (2021) documents a considerable financial presence in these initiatives on the part of alcohol sellers in wet counties that were likely to open branches of their stores in the counties where doing so was newly legal. While displaying the theory of bootleggers and Baptists at a granular county level, the case also emphasizes how these coalition dynamics of special interests may be subtle and not always directly financial, as well as how seemingly similar interests may have opposing incentives when it comes to a particular economic institutional change. Finally, the case stands as one of many where careful empirical analysis shows how special interests can greatly determine observed political outcomes.

C. **Executive legislative exchange**

In many countries the interaction between the Executive and the Legislative branch is the main determinant of the nature and quality of laws and policy. Correspondingly, the study of the institutions that shape this relation has been a major point of research. For years political scientists have debated the merits and impacts of presidential versus parliamentary systems, as if this simple dichotomy alone could explain the wide range of behaviors and outcomes across countries. Eventually, however, it became clear that the distinction was too coarse and that there was just as much variation within these two types as there was between them. The lesson has been that each country's legislative process must be analyzed considering the details and context of its political institutions.

Another debate that was once prominent in political science pitted against each other three general theories that sought to explain the driving force that shaped how the United States' Congress was organized and how it operates. Distributive theories focused on the potential gains from trade among legislators over policy and transfers. Legislators typically face constituents that demand non-exclusive benefits, that is, benefits that can be simultaneously provided within a given budget. It is possible for legislators to divide the budgetary pie so that each can provide some pork to their districts. The problem in striking such a deal is that the nature of intertemporal trade in votes and support makes it very hard to make terms incentive compatible. Transaction costs, time inconsistencies and perverse incentives mean that such a deal would require some mechanisms to tie legislators' hands so that they could not renege after having approved their own projects and transfers and before approving those of others. The distributive theory argues that most legislative rules, procedures, and structures can be explained as means of facilitating these legislative trades and providing credible commitment mechanisms to the political actors. For example, the distributive theory sees the committee system as a means to divide the pork barrel pie. Each committee is given exceptional power to veto or approve legislation in their specific policy area – agriculture, social security, foreign policy, etc. – while giving up influence over policy in other areas. Legislators are then allowed to self-select into their committee of interest. The result is that the credible distribution of resources becomes enshrined in the congressional rules and procedures (Weingast and Marshall, 1988; Shepsle and Weingast, 1988).

Informational theories focus instead on the risk to legislators posed by the uncertainty that accompanies any new policy proposal. Because policy can have unintended consequences

that might harm the sponsoring legislators, it is in their interest to bring into the policy design process people who have expertise and experience with the specific policy area. Doing so, however, can be hazardous for legislators, as these experts may exploit their informational advantages to propose policy that accords to their own interest instead of those of the committee or the party. Informational theories postulate that congress is organized to facilitate the uncovering and disclosure of the true policy consequences (Gilligan and Krehbiel, 1987; Krehbiel, 1992). This is done by conceding to policy specialists within congress, informational rents that make it incentive compatible for them to invest in producing the required knowledge and to reveal it truthfully. The majority party can grant some legislators from their party high profile positions on committees. The privileged position compensates the legislator for the costs of information acquisition and the fact that she is ideologically close assures against policy divergence. Note that the composition of the committees would be very different according to the distributive and the informational theories. The first would have committees stacked with legislators whose constituents care especially strongly about that theme, and the second would have committees composed of policy specialists from the majority party.

The third theory of congressional institutions centers on the fact that legislative and procedural rules concedes special powers and prerogatives to the majority party in congress. The Speaker of the House, for example, who holds exceptional power in legislative proceedings, typically belongs to the majority party and uses those powers to further the party's interests on all legislative fronts (Cox and McCubbins, 1993). Through this lens legislative institutions work as a procedural cartel, with the majority party leadership using its power not only to privilege its members but also to coordinate their collective action avoiding individualistic behavior that might generate externalities and inefficiencies for party interests. In this case the expectation would be that committee composition would reflect the interest of the majority party and its leadership.

Both the literature on parliamentary versus presidential systems and the debate over distributional versus informational versus majority party determinants of legislative procedures and behavior are institutionally rich approaches to understanding the role of the executive and the legislature in the supply of policy. These debates have been superseded by other lines of inquiry that remain institutionally focused but are more attuned to the importance of contextual

diversity, change over time and the difficulty to establish clear cause and effect. Among others, new issues of interest involve the role of culture, identity, leadership, and polarization.

D. Bureaucracies

Once the interaction between politicians, citizens, and interest groups has played out, there remains the task of implementation. This task is delegated to the bureaucracy. Because most studies in the literature focus on the process of policy decisions at the executive and legislative level, it is common to simply assume that bureaucracies faithfully implement what was determined at previous stages. But because delegation takes place, information asymmetries emerge and we are in the realm of principal-agent relations, which means that the details of how the delegation is made affects the strategic behavior of the political principals as well as that of the bureaucracy, with direct impact on the nature and impact of the policy that is effectively put in place. Because the institutional details of how the delegation is designed affect outcomes, these details are endogenously determined at constitutional moments to achieve the objectives of those with the power to affect the process. This contrasts with the standard views in the field of public administration that treats bureaucratic inefficiencies as ineffective implementation that can be remedied through better practices and management techniques.

One of the main themes in the institutional bureaucracy literature is the question of who controls the bureaucracy. The agency has its own policy preferences, as well as other objectives such as salaries, perks, workload, and prestige. If the principal-agent problem is sufficiently severe, that is, there are large information asymmetries and high monitoring costs, it may be the case that agencies are effectively free to pursue their own interests. Provided they do not cross any lines that brings the attention of their principals, they have great leeway to interpret legislation and policy commands in ways that steers outcomes to their own interests. James Q. Wilson (1989) is the classic statement for the degree of autonomy in many agencies in the United States.

An opposing view argues that most policy issues are too important for the fates of politicians to be left at the mercy of the bureaucracy, so they have developed sophisticated and effective ways to control agency behavior to assure their policy commands are implemented faithfully (Weingast and Moran, 1983). This is done through the careful design of institutional and governance details of the delegation to the agencies. The agencies' structure – its internal network or architecture of command – and its process – the rules that constrain how it must

proceed in pursuing its objectives – can be devised to block unwanted actions and to alert the heedless principals if the agency is about to deviate (McCubbins, Noll and Weingast, 1987). The structure involves the chain of command, veto points and dispersion of power within the agency. Process includes making some action out of bounds and establishing obligations to signal intent before implementing big changes, for example, by making public hearings mandatory.

For example, Weingast and Moran (1983) showed that the FTC (Federal Trade Commission in the US) was tightly dominated by its congressional oversight committee during the 1970s and 1980s, such that when the composition of the committee changed from Democratic to Republican control, due to electoral churn, the agency switched in tandem from highly interventionist behavior to a significantly more hands-off approach. Under this 'congressional dominance' approach it may seem as if the agency is pursuing its own interests, as there are rarely any sanctions or reprimands from the principal, such as firings or budgetary cuts. In fact, principals may often be too occupied with other issues to even be aware of what the agency is doing. However, this behavior arises because the institutional instruments are so effective in assuring agency compliance that the principals do not need to be constantly engaged and monitoring.

Most of the institutional bureaucracy literature was developed for the US context, thus the prominence of 'congressional' dominance rather than that of other powers. However, in different countries it may be that the main constraints on bureaucratic behavior are from the President or from the judiciary. More realistically, the principal-agent problem that determines how agencies behave and how policy gets implemented could be a multiple principal multiple agent problem, simultaneously involving several principals, each with their own policy preferences, as well as other competing and cooperating agencies, also with their own agendas. The result is that to understand what bureaucracies do and why they do it, it is necessary to understand the specific contextual institutions which shape the nature and structure of that networked set of relations.

E. Judiciary

A variety of political institutions have an observable influence on both political and economic outcomes. Considering political institutions as a choice margin subject to observable variation has considerable analytical value. While the judiciary is by design intended to be a less "political" branch of government, choice in judicial institutions also has considerable influence

over economic outcomes (Hanssen 2004). Of course, variation in judicial institutions has many margins tractable to empirical analysis, such that the study of judicial selection is a vibrant field, which at its most fundamental, can be described as intended to strike a balance between independence and accountability (Ginsburg and Garoupa 2009a). Unlike the comparative variation we discuss here in more detail, Ginsburg and Garoupa (2009a) find little identifiable effect of variation in judicial selection institutions: political appointments or election. Ginsburg and Garoupa (2009b) similarly find no impact from different judicial council designs. In this section, we consider judicial institutional variation on Native American reservations, which has been linked to a variety of outcomes associated with economic and financial development.

More specifically, predictability in contract enforcement institutions is an input to incentives to invest in durable long-lived economic projects, especially those that involve coordination among parties (Alston and Smith 2022) or are subject to hold-up challenges due to sunk costs of investment weakening commitment credibility (Williamson 1983; 2010). Relatedly, credit markets are particularly subject to information asymmetries between creditors and debtors, and so are themselves particularly sensitive to institutional interventions (Alston 1984), as well as uncertainty more generally (Beber and Brandt 2009). In contexts ranging from the property institutions described earlier in Section II, to sunk cost investments, to credit markets, incentives to invest in productive economic and financial activity hinge on sufficient institutional certainty, especially with respect to the enforcement of contractual terms. Judicial institutions are therefore plausibly linked to economic development more generally, due to the way in which any more complex or intertemporal forms of economic exchange hinge on the credibility of impartial enforcement by the judiciary (de Soto 2000).

Due to the imposed administrative control of policy on Native American reservations, one subset of these reservations uses state courts, while another subset relies on tribal judiciaries. This plausibly exogenous variation in legal institutions presents a natural experiment by which to consider their comparative effect based upon institutional economic theory. A recent series of papers explores the preceding hypothesized relationships between economic activity and judicial institutions. First, the set of reservations with tribal courts is closely associated with lower levels of economic development (Brown et al 2017a), an effect consistent with direct economic consequences to the less reliable (for outside investors) enforcement associated with these courts. A possible explanation for this surrounds the way in which credit markets are both a direct input

to and proxy of economic activity more broadly, such that this distinction in judicial institutions has also been linked to weaker credit markets, as well as lower per capita income (Brown et al 2017b). Specific examples of economic activity also track with these findings at coarser levels of aggregation, such that casinos (Cookson 2010) and golf courses also are less likely to be located on reservations with tribal courts, perhaps due to holdup (Cookson 2018) or external financing (Brown et al 2017b) concerns.

This distinction between macro and micro variation also exemplifies a major tradeoff for empirical institutional scholars in terms of a more general tradeoff with respect to the scope of a research question and its tractability to empirical identification. Quantitative tests of broader theories linking specific institutional variation to economic growth or human development writ large face significant critiques in general as to the strength of their causal identification due to endogeneity and omitted variable concerns (in addition to specific critiques that the various macro growth and development studies face that are particular to each research design). An additional example pertinent to the context described here suggests that "chronic" uncertainty in the legal and administrative regimes governing Native American reservations also is a significant input to the underdevelopment of these reservations writ large (Alston et al 2021), notwithstanding the fact that a centuries long claim of relative underdevelopment at this level of generality is not as tractable to empirical identification as were the studies related to variation in judicial institutions specifically. This is consistent with the previously discussed null results of Ginsburg and Garoupa with respect to variation in judicial selection and judicial council institutions (2009a; 2009b). The pursuit of empirically identifiable generally applicable rules will become harder as the source of institutional variation or causally-linked outcome scales from the micro to the macro. Nonetheless, the discussion of judicial institutional variation on reservations is consistent with this broader theory, and once again shows how taking political institutions as a choice margin (and therefore, a plausible source of identifiable variation across contexts) has proven a fruitful institutional foundation for cliometricians and scholars in NIE.

IV. Beliefs, Leadership and Critical Transitions Toward Better Institutions

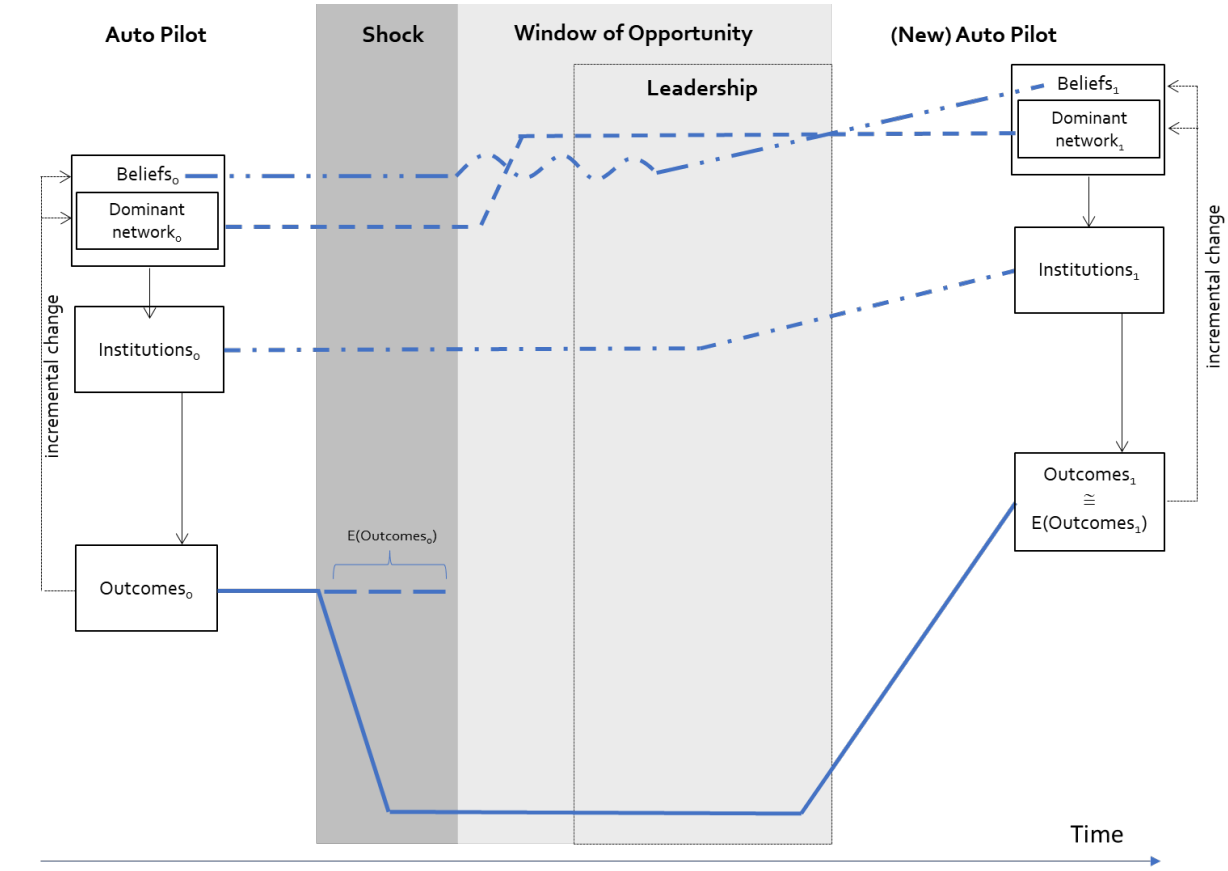
In the previous two sections we sketched out a dynamic from institutions to economic performance and then economic performance to the institutions of government. The dynamic occurred under the umbrella of a constitution, taking that set of secondary rules as essentially fixed for the purposes of analysis. The dynamic helps explain why there has been remarkable stability in the developmental trajectories of most countries. Over the past hundred-plus years, most countries can be categorized as lower, middle, or upper income. Nonetheless, there have been entrants and exits from these categories and it is on this transition that our third part focuses. There is a consensus that institutions are critical for development. Yet very few countries enact major institutional reforms. The reason for this is that those in power, or what is often called the dominant network, have no reason to enact major changes because it would affect the political and economic rents that they receive. Yet, some countries in the 20th century changed their developmental paths dramatically. South Korea in the early 1960s was a middle-income country but by the end of the century was solidly a high-income country. On the other hand, Argentina which had been in the top ten per capita income countries in the first half of the 20th century, fell from grace and now is situated squarely among middle-income countries.

In this section we wed the concepts from the previous two sections to illustrate why most countries across all income ranges only change institutions on the margin. We will then add to the concepts new ones to explain what forces prompt major institutional changes that enable countries to move to a new trajectory. These concepts include: a dominant network; beliefs; institutions; economic and political outcomes; shocks; windows of opportunity; leadership and critical transitions.

The dominant network consists of the set of organizations that have the power to change and implement institutions. This can include the special interests discussed in the previous section as well as government actors, the military, the press and so forth. The organizations in the dominant network are country specific. For instance, in some cases the military is powerful and in other cases they are outside the dominant network. The dominant network continually advances changes in institutions, but they do so based on their beliefs about how institutions will impact economic and political outcomes and the rents that those in the network expect to receive. Those in the dominant network have preferences over numerous outcomes, e.g., political, and economic rents, income growth, income inequality, economic opportunity, political competition,

inter alia. Different organizations in the dominant network have both different preferences and beliefs about how institutions will affect outcomes so there is bargaining within the dominant network. To the extent that outcomes match expectations there will not be an impetus for the dominant network to embark on major institutional changes. We call this process auto-pilot. In Figure 3 we depict the process.

Figure 3 – The impact of beliefs, dominant network, and leadership in the critical transition



Source: Created by the authors.

Figure 3 shows the dynamic of critical transitions through which beliefs, institutions and the dominant network can change non-incrementally. Time moves from left to right in the figure. The dominant network uses its beliefs about how institutions will the outcomes they prefer. We call these core beliefs. For the most part, core beliefs are quite stable. The horizontal lines indicate that each of these elements does not change significantly over time. If outcomes are in line with what was expected given beliefs, there will be little pressure for change (indicated in the figure by horizontal lines moving right). This is the auto pilot phase in the sense that beliefs

are well established and there is no role for leadership to forge and coordinate new beliefs. But when hit by a shock (technological, demographic, climatic, hyperinflations, recessions etc.), outcomes may differ from what was expected, and beliefs may be challenged. Shocks can cause some in the dominant network to question their beliefs. Others may stay firm in sticking with the status quo given that major changes in institutions will have an uncertain impact on outcomes. Shocks bring to the fore coordination issues among those in the dominant network. This is where leadership can play a role by persuading others in the dominant network to go along with changes. The dominant network may also be contested and overthrown or reshuffled. This creates a window of opportunity for new beliefs to emerge, leading to new institutions. This process may happen spontaneously or through the guidance and persuasion of a leader. Leaders can sometimes point to impending shocks as way to enact substantive institutional reforms.

The attributes of leadership that can matter to sway others will vary by country but include a recognition that the extant outcomes (or portending outcomes) require major changes. To be successful in bringing about change will require coordination amongst the members in the dominant network. A leader sets the agenda, generally through their position, e.g., heads of state typically have agenda setting power. Successful agenda setting entails framing an issue to persuade others at the table. Even with framing the issues, leadership will typically require some compromises to the initial proposed changes to get major institutional changes implemented. Some leaders can better forecast downstream consequences from major institutional changes. It is easier for leadership to succeed if leaders have moral authority such that others do not question their motives as self-dealing. Some leaders come to their position with moral authority, e.g., war heroes and others can earn authority through their actions.

Belief changes in the dominant network often result in a new constitution or constitutional amendments. We term the changes constitutional moments. But major legislative changes can also be a constitutional moment. For example, in 1964 and 1965 the U.S. passed the Civil Rights Act and the Voting Rights Act which can be considered constitutional moments. A constitutional moment is not sufficient to bring about a critical transition. A critical transition occurs over time with belief deepening and accompanying marginal institutional changes to buttress the constitutional moment. Not all critical transitions result in further economic development but those that do will lower transaction costs of economic exchange and tend to

make societies more resilient. Resilience comes in part through the ability of political and economic actors to make credible commitments.

Change in each element is indicated in the figure by lines moving right that are no longer horizontal. In the right hand of the figure change has taken place and a new auto pilot phase ensues, with new dominant network, beliefs, institutions, and outcomes, which persist over time, changing only incrementally, until a new shock ignites a new window of opportunity. Note how this process is distinctly Darwinian, following an algorithm that contains variation, selection, and replication, where the fitness function is measured in deviation of outcomes from expectation.

For the purposes of this analysis, linking empirically identifiable institutional variation to economic and social outcomes, these critical transitions and constitutional moments are themselves tractable to identification using econometric techniques. In the following subsections, we discuss how constitutional moments have become subject to empirical consideration, and how understanding critical transitions in social orders has increasingly drawn from the field of complexity theory to describe processes occurring at such a grand scale.

A. Constitutional Moments

Major changes in a nation's constitutional firmament itself are uncommon relative to the status quo set of institutional arrangements within a given nation. But across the history of the world, constitutional change is the norm, albeit at a much slower scale than typical economic or legislative change. This has led to the application of empirical techniques to studies of constitutional change. An early work in this field approached the question of constitutional endurance, considering whether structural features of constitutions themselves were an input to the length of time a particular constitution endured (Elkins et al 2009). Inspired by commentary from Thomas Jefferson about a national constitution's need for representativeness cutting toward a new constitution every generation, Elkins et al found that on average a nation's constitution endures roughly nineteen years. But beyond the uncanny correspondence to Jefferson's conjecture, the authors found a constitution's endurance was related to how easy or hard the document was to amend. Sufficient rigidity in a constitution leads to wholesale constitutional turnover with greater likelihood.

A related finding surrounds how constitutions that are amended are less likely to be replaced altogether (Law and Whalen 2020), which suggests a mechanism by which the constitutional endurance finding occurs. Nations that cannot accommodate demands for change

in constitutional moments are more likely to replace the constitutional document altogether. These studies of endurance and amendment typify a tendency in empirical constitutional studies to describe constitutions' systematic characteristics globally, and another study indicates that constitutions are getting longer and more specific across countries and time (Versteeg and Zackin 2016), which the studies' authors consider as evidence of functional benefits of greater specificity in terms of constraining government authorities. Relatedly, through use of computational text analysis techniques, distinct substantive families of constitutions have been uncovered, with considerable similarity within each substantive group relative to others (Rockmore et al 2018). Thus, a given family of constitutions is likely to contain similar rights protections and similar choices as to form of government relative to other such families.

The identification of constitutional patterns related to structural characteristics of constitutions has proven fruitful in these studies and others in terms of understanding how these characteristics influence other constitutional outcomes. Amendment flexibility is related to endurance such that more amendments are linked to less constitutional replacement. Constitutions have gotten longer over time, and specific constitutions display substantive similarities with other subsets of constitutions. This tendency to identify constitutional outcomes as a function of specific constitutional characteristics contains a more general lesson for comparative empirical scholars surrounding research design when comparing constitutions at a global level and long temporal scale: the ability to control for all relevant variables of interest and endogeneity is diminished as one examines a global question at a time scale spanning well over a hundred years. This makes identification of outcomes beyond those formalized in the text itself a challenging empirical exercise. While this is not to argue that no identifiable outcomes can be tied to specific constitutional characteristics, the fact that the empirical constitutional literature has more slowly moved toward identification of constitutionally exogenous outcomes is a testament to the challenge of rigorous identification as the spatial and temporal scale of the research question increases. One path forward surrounds a more limited set of constitutions as the set from which causal inferences are drawn, such that scholars have pursued questions surrounding U.S. state constitutions and tendency to default (Dove and Young 2019), as well as amendment propensity (Negretto 2012) and corruption (de Viteri Vázquez and Bjørnskov 2020) in Latin American countries as a function of their constitution's characteristics.

While institutions as fundamental as constitutions are clearly bound up in the development processes of nations worldwide, the generalizable lesson from their empirical study is one of humility with respect to the extent of causal identification that is possible at a global level. This is due to the complex nature of human social orders, wherein identification of the numerous forces influencing outcomes at the level of societal comparison across decades, if not centuries are stymied due to this very complexity. This recognition has led to the increasing salience of complexity theory to scholars of institutions and economic history alike. Accordingly, in the following section we consider examples of empirical institutional scholarship that draw upon concepts from complexity theory to uncover development patterns of interest.

B. Institutions and Complexity Theory

Understanding institutions as providing governance in complex social orders follows if one considers modern societies as complex orders. This makes understanding the role of institutions in these complex systems central to understanding what makes some institutions better than others. An early application of complexity theory to studies of economic growth suggests that cities around the world display a predictable numerical relationship in that the number of cities with a population above a certain number is proportional to one divided by that same number (Gabaix 1999a; 1999b). This is an indication of how growth of human social orders is governed by power law distributions. While itself noteworthy, this ordered relationship between size of cities and the number of cities within a given nation indicates an ordered predictable relationship between these two forces in observable demographic outcomes.

If all social orders were subject to identical power laws, though, then comparative economic performance would simply be a function of the society with the greater demographic and natural resource inputs. But the study of economic performance over the past 200 years suggests that instead some countries have achieved far higher levels of development than others, even when controlling for demographics and natural resource endowments (Koyama and Rubin 2022). The fact that governance is emergent in social groups above a certain size indicates a more universal fact about institutions in terms of the benefits they provide – rule-based social ordering acts as a scalar mechanism in terms of facilitating the growth of social groups beyond the level of personal knowledge. This concept is closely tied to that of Dunbar's number, which is the upper limit on the number of individuals any one person can know personally (Dunbar 1993a; Dunbar 1993b). Therefore, institutions in general, as the deliberately articulated rules of

formally constituted organizations, can be understood as a scalar mechanism in human social orders, facilitating the transition from personal to impersonal as groups grow in scale and complexity.

This view of institutions grounded in complexity theory also sheds light on normatively preferable institutions. A way to understand "good" institutions is thus given the same demographic, natural resource, and technological inputs within a particular social order, better institutions facilitate a greater scale, scope and intensity of voluntary productive interactions within that social order (Alston et al 2018, 308-311). This view of institutions naturally tracks with the understanding that better institutions are associated with higher levels of economic growth (North 1997). A related concept to the positive margin of human and economic development is that of resilience, though, such that another way in which institutions can be understood through the lens of complexity theory is that beneficial institutions provide resilience in the face of unanticipated shocks (Broadberry and Wallis 2016). Two means by which preferable institutional orders facilitate this resilience surrounds how comparatively developed institutional orders tend to develop a much greater diversity of institutional forms, which can prove to be an input to weathering unanticipated shocks due to the greater likelihood that a set of governance processes will successfully map to the unforeseen in such social orders (Alston et al 2018, 313-314). Relatedly, beneficial institutions can create a virtuous cycle, where the governed's faith in those institutions due to prior performance is an input to their success in an instance of the unanticipated (Alston et al 2018, 315). Thus, institutions act as a scalar mechanism by facilitating a governance transition to the impersonal and providing resilience in the face of unforeseen circumstances.

The margins between institutions and complexity theory continue to be a fruitful area of study beyond the broad theory discussed here. However, adopting a complexity approach to understanding the emergence, evolution, and impact of institutions requires a very specific scientific mindset. Economists are typically trained to view the world as a linear, mechanical system, whose working can be understood by reductively studying each micro element and then reassembling those parts to understand the macro whole. This view harbors the expectation that the system can be fully understood, predicted, and controlled. Such a Newtonian approach is fruitful for linear systems and has, for example, helped place a person on the moon. But for complex systems composed of the interaction of many diverse agents acting only on local

information and with no central command or control – such as an anthill, a mob, a brain, an ecology or an economy – this clockwork mindset is a bad fit. With complex systems it is often impossible or uninteresting to find equilibria, and due to their coevolving nature, it is often not possible to establish clear cause and effect relations. Because linearity, equilibria and causality are such fundamental concepts for economists, the complexity approach requires a drastic change in outlook. But given that the economy is a prototypical complex system – diverse, informationally constrained, interacting agents, with no central control leading to emergent phenomena, e.g., the invisible hand – this shift in perception is worth the effort.

A complexity lens is particularly useful for economic history. Although historical events are clearly contingent and subject to multiple and hard to ascertain causes, economic historians often a take deterministic and reductionist perspective that seeks to explain historical patterns as caused by few salient and well-defined economic forces. Notwithstanding this general disposition, several renowned economic historians have emphasized the dangers of trying to shoehorn history into simple, deterministic and inevitable patterns. McCloskey's (1991) essay *History, Differential Equations, and the Problem of Narration*, is an early example of the application of a complexity and chaos theory perspective to economic history. She notes that history is a non-linear system often characterized by positive feedback, where previous events iterate into current events. Such systems, depending on parameters that capture how interconnected and diverse the agents are, can produce periods of stasis, periods of chaos and complexity at the edge of chaos, which is where much of what's interesting in history happens. As McCloskey notes (pg. 32) this "introduces a sense of magic, a sense of many possibilities" that may look like randomness but is wholly generated within the system. It means that the system is highly sensitive to initial conditions, so that small causes – the flap of a butterfly's wing – can have large impacts to how history unfolds. The point, stresses McCloskey, is not that great oaks from little acorns grow, but rather that it is very hard to figure out which is the right acorn. She notes, for example, how Robert Fogel stressed that there was nothing inevitable in Lincoln's election and the resulting secession as the precarious balance of American politics in the 1850's could have been turned one way or the other by minor events (McCloskey, 1991: 26). Because what happened, happened, it is difficult not to put together narratives that over emphasize those events and not what might have happened but didn't.

An example of an extreme complexity approach to economic history is Joel Mokyr's conjecture that maybe historians should not try to rationalize the Great Enrichment and the Industrial Revolution happening when and where it did by searching for grand causes and a clean discernable buildup of one thing after another leading to the inevitable observed outcomes.[3] He proposes instead considering whether these events were ineluctable, as they often seem to be in retrospect, or rather if they might have happened at some other time, or elsewhere, or not at all. This is a fully complex system approach, that accepts the incapacity of understanding what a system will do, except by running the system and always aware that in another run things might have played out very differently. Mokyr points out that since the outset humans have been subject to negative feedback in the form of (i) Malthusian pressures, (ii) predators, invaders, and rent-seekers, (iii) exogenous shocks such as epidemics and climate change, and (iv) what he calls the curse of concavity, that is, the diminishing returns of things such as gains to trade and capital accumulation. These negative returns acted through history to contain or suppress any instance in which growth and prosperity were devised or stumbled upon. But then, in the 18th century with the emergence of the Enlightenment, reduced fertility and beliefs in useful knowledge, positive returns kicked in due to the public good nature through which knowledge begets more knowledge. Though sources of negative feedback persisted, conditions in Europe, i.e., political fragmentation and the networked Republic of Letters, favored the positive feedback. Under such unprecedented and chance conditions, knowledge led to the Scientific Revolution which in turn generated practical innovation, growth and the concurrent coevolving changes in culture and attitudes that feedback to make the process resilient and dominant. He highlights how this process was not inevitable or obvious, and small changes such as the Inquisition having taken over Britain in 1588 with the Spanish Armada could have pushed history in a very different direction, possibly one in which the Great Enrichment would not have happened.

Douglass North (1990: 137) similarly emphasized the importance of approaching history as a system characterized by positive feedback and increasing returns:

> An overall contribution that institutional analysis can make to U.S. economic history is to make it a truly historical story, something that has been lost with cliometrics. Much of that history is path dependent simply by nature of constraints from the past imposing limits on current choices and

[3] See Mokyr's comments starting on minute 55:23 of the Hayek Program podcast of the Mercatus Center discussing the book *How the World Became Rich* by Mark Koyama and Jared Rubin https://www.mercatus.org/hayekprogram/hayek-program-podcast/how-world-became-rich-book-panel

> therefore making the current choice set intelligible. But much of it reflects a more fundamental role of path dependence as a consequence of the increasing returns characteristics of the institutional matrix. The reinforcing role that the political and economic organizations provided the institutional matrix via network externalities and other sources of increasing returns provided the decisive stamp to U.S. economic history. But the organizations were also inducing incremental change and that blend of underlying stability and incremental change can give us a deeper and more satisfying account of that history.

The view that institutions are emergent instead of purposefully humanly devised, and that their effects can be impossible to predict or control, contrasts with the way institutions are often understood and used in economic analysis, either as a dependent variable to be explained, a treatment, a source of exogenous variation or a control. But as McCloskey, Fogel, Mokyr and North, among others have shown, treating institutions explicitly as a part of a complex system can be a fruitful mode of analysis. This approach has made many gains in recent years, but there is still much to be discovered and developed. The reader interested in the state of the art of this research is referred to our *Handbook on Institutions and Complexity* where different authors explore different synergies across these approaches (Alston, Alston, and Mueller, forthcoming).

V. Conclusion

New Institutional Economics had its roots in Cliometrics, but developed over time with input from a diverse set of scholars across numerous disciplines. When taking institutions to mean the rules articulated by recognized authorities, this makes our approach to NIE broadly include any analysis of the complex interplay between observed institutional variation and economic outcomes, whether macro or micro. NIE can thus be understood as a toolkit with a set of concepts applicable to specific contractual arrangements in economics and politics as well as economic and political performance overall. Within Cliometrics, the application of empirical techniques to research questions in economic history led some scholars to focus first on transaction costs and property rights as a source of historical and cross-national variation tractable to identification. But to focus on transaction costs and property rights in isolation was insufficient to explain macroeconomic variation and so scholars turned to analyzing the role of political institutions to shed light on comparative historical economic performance. This is because political institutions, the laws of societies, are themselves determinants, along with norms, of property rights and transaction costs. Abstracting upwards one institutional layer further subjects even constitutional institutions to empirical investigation as to their cross-

national variation, a mode of analysis which has also shed light on comparative historical performance across nations and time.

Consistent with this view of distinct levels of analysis of institutional variation, our discussion has been divided into three parts (each of which corresponds to a given figure drawn from our institutional textbook (Alston et al 2018)): 1) Institutions and norms to property rights to transaction costs to contractual arrangements to economic performance; 2) Economic performance to special interests/citizens to executive and legislative activity to bureaucracies to the judiciary and finally to political institutions; 3) Endogenous and exogenous shocks to windows of opportunity to changes in beliefs to a possible critical transition (with complexity theory providing a general theoretical basis by which to understand the expected benefits of such fundamental institutional change). Parts 1 and 2 forms a dynamic loop that tends to produce stasis in that economies change institutions on the margin but not in a way that produces convergence in economic and political outcomes across nations and time. In Part 3 we discuss the factors that can lead to a critical transition that puts societies on a new economic and political trajectory which can be positive or negative. Considering social orders in their full complexity involves a recognition that there is nothing predetermined in the system; we should consider what did not happen as much as what did happen for there was little that was inevitable in the way that societies developed.

Better countenancing complexity theory therefore changes how we view institutions and institutional change. At each stage of conceptual abstraction from the micro to the macro institutional in terms of the effect of institutional variation on social outcomes of interest, the ability to exclude omitted variables or endogeneity diminishes. Rather than stymy inquiry, this has led institutional scholars to increasingly draw from complexity theory to better understand and describe variation in historical economic performance. Even as institutional economics drew heavy inspiration from cliometrics in the field's first phases, the two fields will continue to inform their respective pursuit of explaining observable variation in economic performance within complex social orders over time.

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