Comments

Miguel Urquiola: In their paper, Engerman and Sokoloff summarize the results of a productive research program, undertaken with the broad objective of understanding why some former colonies in America have grown so much more than others, producing the dispersion of incomes seen today. In seeking to answer this question, they emphasize how different colonies' factor endowments conditioned the early and subsequent development of their institutions and thereby affected their readiness for modern industrial growth. This work is not only interesting in and of itself, but it has also served as a building block for recent influential research that extends these ideas to other regions of the world.[1]

This note briefly summarizes the authors' argument and the facts they present and seek to explain. I then raise some identification issues and counterexamples that this work does not fully address, along with a couple of more specific issues to consider in future research.

Some Interesting History That Needs an Explanation

One of the key points that Engerman and Sokoloff seek to establish is that in the first century or two of European settlement in America, the southern English colonies (such as present-day Jamaica and the southern United States) and many of the Spanish colonies (such as Mexico and Peru) were just as well-off or even richer than northern colonies like the present-day northeastern United States or eastern Canada.[2] The large advantage in incomes that the latter have today did not begin to develop until the late eighteenth and nineteenth centuries.

Engerman and Sokoloff were among the first to make this point and document its validity across the Americas, which is an important contribution in itself. This assertion has gained wide acceptance, and as

1. For example, Acemoglu, Johnson, and Robinson (2001, 2002).

2. This assertion is in terms of wealth per capita. It holds even on considering slaves as part of the population, and it is definitely a feature if one considers only free people in per capita calculations.

Acemoglu, Johnson, and Robinson show, such drastic changes in the relative wealth of former European colonies are also a feature in other parts of the world.[3]

Accounting for the stark differences in growth experiences is the challenge that Engerman and Sokoloff face in their work. Their main emphasis is on the way colonies' factor endowments affected the development of their institutions, which in turn determined their readiness to take advantage of the industrial growth that started in the late eighteenth and nineteenth centuries. Put briefly, their argument is that in places such as the Caribbean or Brazil, soils and climate were suited to valuable crops with ample economies of scale, such as sugar, which stimulated the importation of slaves. This created a large, poor, and disenfranchised segment of the population. In other areas, like present-day Peru, the combination of factors like preexisting native populations, silver mining, and the awarding of large land holdings contributed to a similar outcome: highly unequal societies.

While the value of sugar or silver made such colonies wealthy in their early history, the resulting economic and political inequality facilitated the formation of institutions that made these areas ill-suited for more modern economic growth. In contrast, the northernmost colonies, namely, the northeastern United States and eastern Canada, had soils best suited for the production of wheat and other grains, which presented few economies of scale. The authors contend that this led to their settlement by European immigrants working with relatively small landholdings. These colonies therefore developed more egalitarian societies and better institutions, which put them in a position to benefit more from industrial growth.

A Strength in This Approach: Geography versus Institutions

From an analytical perspective, this approach is interesting because it provides an alternative to pure geographical hypotheses, which assign responsibility for most differences in income to factors broadly related to geography.[4] As emphasized by Acemoglu, Johnson, and Robinson geographical explanations for economic performance generally suggest that differences in income should be quite persistent.[5] Engerman and Sokoloff,

3. Acemoglu, Johnson, and Robinson (2001, 2002).
4. See, for instance, Gallup, Sachs, and Mellinger (1999); Diamond (1997).
5. Acemoglu, Johnson, and Robinson (2001, 2002).

however, show that something rather different is needed to account for differential paths of development in the Americas, and their argument outlines a theory that is consistent with the facts.

In their theoretical outline, the key line of causality runs from factor endowments to poor institutions to present-day economic performance. While factor endowments are, in a sense, geographic factors, the emphasis is that geography matters only through its effect on institutions, that is, through its indirect influences. Acemoglu, Johnson and Robinson make this point even more starkly, and one could argue that these two lines of research are similar in this regard.[6]

While the argument is elegant and consistent with many observations, the evidence Engerman and Sokoloff present is not sufficient to seal the issue of causality. To begin, it seems hard to rule out that geography is not exerting significant direct impacts on present day performance, over and above any effect on institutional formation. Consider two countries that the authors discuss, which form the core of the territory encompassed by the Inca empire: Peru and Bolivia. The armies led by Pizarro encountered a large part of the Inca population in the highlands of these countries. This proved auspicious for the Spanish: as the authors indicate, it put a large labor force close to the mines that they wished to exploit. The Incas, however, did not settle at high altitude because they wanted to mine for silver.[7] While I am not aware of a convincing case for why these societies settled at high altitude, one could venture that they did so because mortality was lower there than in the more tropical areas (which are often at the same latitude in these countries, just at a lower altitude).

Whatever the reason, a fact to consider is that the highlands of present day Peru and Bolivia are very poor, even by Latin American standards and compared to other areas within their own countries. Why are these regions so poor? In part, it seems to be because of low productivity in their agricultural sectors, which is, in turn, related to poor soil quality. Indeed, the recent demographic history of Bolivia is partially a process of moving the population from less productive highlands to lower areas where tropical mortality is no longer a concern.

Geography may thus be having direct effects on present-day performance in such cases, over and above the influence it had on institutional

6. Acemoglu, Johnson, and Robinson (2001, 2002).

7. As Engerman and Sokoloff point out, while the Inca Empire did engage in mining, this industry did not occupy the all-important position it came to have under Spanish rule.

development. If this is the case, then it is hard to isolate the effects of institutions in the manner the authors attempt. One would need a convincing instrumental variable for institutional quality, and this example shows that the factors the authors implicitly use as such (soil endowments and the crops to which they were conducive) might not be satisfying.[8]

Special Cases

Despite this important reservation, the hypotheses set forth by the authors are persuasive to the extent that the data points seem to fit; indeed most countries' experience seems to buttress their arguments. As always, however, there are outliers that one must strain to fit into the story. Two notable examples are the southern United States and Argentina. According to the arguments laid out in the paper, by its factor endowment and extensive importation of slaves, the southern United States should have ended up a relatively poor area. In contrast, Argentina should have met with relative success (a prediction shared by a general form of the geography hypothesis).

Engerman and Sokoloff contend that neither of these is, in fact, the case because institutions cannot be fully set at the local level. Put briefly, the argument is that institutions in the southern United States might have actually evolved to look more like those of Latin America, but their development was constrained because some of their key characteristics were determined at the national level and under the influence of northern preferences and realities. The civil war was the ultimate expression of that constraint.

Similarly, Argentina's poor institutions might reflect that the Spanish colonial authorities were more interested in designing institutions that would support an effective mining of Andean silver than institutions that would make exploitation of the Argentine pampas profitable or even feasible. Put otherwise, Richmond was lucky to have institutions designed for Boston thrust on it, while Buenos Aires was unlucky to receive those intended for Potosí or Asunción.

A problem in this case, however, is that Argentina does not fit the pattern well. The country was still relatively well off in the nineteenth and

8. See Acemoglu, Johnson, and Robinson (2001, 2002) for an example of using the instrumental variable approaches to deal with the endogeneity of institutions.

even the early twentieth century, when by some measures it did not lag far behind—or was even on par with—Canada. To explain the state of Argentina at the start of the twenty-first century, it thus seems necessary to explain why its institutions "went bad" in the late nineteenth and twentieth centuries, and the Engerman and Sokoloff hypothesis is, of course, about a much earlier period.

Migration

Finally, an important and promising component of the authors' research is the gradual opening of the "black box" of institutional development. In this paper, they study some historical aspects of policies in the areas of education, voting rights, land, and immigration. All of these are very interesting, but as usual opening a black box raises questions.

To illustrate, one issue they emphasize with respect to immigration is how Spain's policies restricted the arrival of additional European immigrants after the early stages of colonial rule. They argue that this helped to perpetuate the unequal distribution of economic and political power, and that in part it was an effort by first or second generation Spanish migrants (*peninsulares* and *criollos*) to maintain their positions of privilege. One can see why the early European immigrants might have had an incentive to restrain further immigration, but it is not clear why the Spanish crown's incentives would necessarily align with these. If European immigration could have made Argentina or Chile early success stories, why was this not in the crown's interest? Why did it not want the tax revenues that might have been generated in such societies? Even if the crown did wish to restrain immigration, it seems that this would be easier said than done. It is hard to fully control the flow of people even with modern technologies, as evidenced by recent history in the United States and Europe. From a layman's perspective, Spain does not give the impression of a power that could effectively control its vast colonies, when at times it seems to have had trouble protecting the ships carrying the king's silver.

Beginning to explore these specifics is a fruitful line of work, one that will shed further light on key issues, such as why Latin America developed unsuccessful educational systems. It is another challenging area of work the authors have entered.

Conclusion

In short, Engerman and Sokoloff have produced stimulating and elegant research, and I appreciate the opportunity to comment on it. While fully establishing many of the key causal links they propose will require further work, the foundation they have laid is impressive and will surely influence economic historians for years to come.

Daron Acemoglu: It is a pleasure to discuss this paper by Engerman and Sokoloff, which forms part of an important research program that the authors have been pursuing for over five years now.[1] Their research has been influential for many economists, and for me in particular, so this is a great opportunity for me to comment on their broad agenda and specific contribution.

The question that motivates this research program is why some countries are much poorer than others. Every social scientist dreams of answering this question, though few are brave enough to tackle it, and far fewer are successful enough to give useful answers. Engerman and Sokoloff not only make the attempt but are successful.

A little background would be useful. If a development economist of the 1970s were asked this question (and many of them were), their answer would include geographic factors, cultural differences, policies, and especially capital accumulation. One view that arose in opposition to this perspective of economic development emphasizes institutional differences. What's important is the social organization of society, which determines what types of policies politicians and elites adopt, whether agents invest in human and physical capital, whether they adopt new technologies, and so forth. According to this new view, geography is not a major factor, except through its effect on institutions. (It is not yet clear how culture fits into this equation.) The importance of institutions is highlighted by Douglass North and Mancur Olson, among others.[2] The distinctive nature of Engerman and Sokoloff's work, however, lies in their emphasis on the historical roots of institutional differences. Their research program thus complements and completes the picture that North and others initiated. Institu-

1. See, for example, Engerman and Sokoloff (1997); Sokoloff and Engerman (2000).
2. North (1981); Olson (1982).

tions matter, and they matter a lot, and history is the key to understanding where they come from and how they are shaped.

In the rest of this discussion, I first summarize the argument in the paper. I then step back and briefly discuss the major facts of long-run development among the former colonies. These facts are based both on work by Engerman and Sokoloff and on recent work that Simon Johnson, James Robinson, and I have been doing.[3] Next, I discuss how we interpret these facts, emphasizing the broad areas of agreement between our team and Engerman and Sokoloff, as well as what major areas of uncertainty and disagreement remain.

Summary of Engerman and Sokoloff's Basic Argument

Here is the basic argument. Europeans came to dominate the New World at the beginning of the sixteenth century. They used profit-maximizing incentives to structure the organization of production and the social arrangements, but they faced different circumstances in different colonies.[4] In some colonies, the most profitable option was to produce crops with considerable economies of scale, such as sugar or cotton, while in others, mining was a feasible option. A third category of colonies was best suited to crops that required smallholder production, such as grain. In places with crops exhibiting economies of scale, Europeans set up very unequal systems, with economic and political power concentrated in the hands of a few white slave owners, whereas in North America, where grain was best farmed by smallholders and land was abundant, the methods of production and the social system were more egalitarian.

These social systems and the degree of economic inequality were mutually reinforcing in both North America and the Caribbean, and they led to divergent paths of institutional and economic development. The smallholder societies, with their greater economic and political equality, prospered in the nineteenth century, while the slave societies stagnated. Engerman and Sokoloff suggest that these historical paths of institutional and economic development are of first-order importance in understanding the current differences in economic success across countries.

3. Acemoglu, Johnson, and Robinson (2001, 2002).
4. See also Acemoglu, Johnson, and Robinson (2001, 2002).

Accepted Facts regarding Long-Term Development in the Colonies

The basic argument advanced by Engerman and Sokoloff is motivated, and supported, by a set of facts. Three broad facts, in particular, emerge from Engerman and Sokoloff's work, as well as from work I have done with Simon Johnson and James Robinson.[5] First, both in the New World and among Old World colonies, the places that were relatively rich in 1500 or in 1700 are relatively poor today. Second, the areas that became relatively poor over the past 300 to 500 years are the places where Europeans set up extractive institutions with power in the hands of a small elite. Third, the big divergence among the colonies took place in the late eighteenth and nineteenth centuries, when areas with institutions protecting property rights took advantage of industrialization opportunities and grew rapidly, whereas areas that inherited extractive institutions from Europeans (or were under European control with extractive institutions at the time) stagnated.

In our work, we documented these facts for all the countries colonized by European powers, and we did so making use of two proxies for economic prosperity, urbanization, and population density. Engerman and Sokoloff focus on New World countries and bring a variety of evidence that are qualitative as well as quantitative.

The places with high urbanization in 1500 are much poorer today, as are the places that had high population density in 1500 (see figures I and II in Acemoglu, Johnson, and Robinson, 2002). Divergence does not occur between 1500 and 1700, but between 1700 and today (see figure IVa in Acemoglu, Johnson, and Robinson, 2002).

Looking at other time series data, it is also possible to date the time when colonies that were initially poor took over the colonies that were more developed to sometime around the late eighteenth to the early nineteenth century. And this process is associated with rapid industrialization in places such as the United States, Canada, and even Australia (see figure IVb in Acemoglu, Johnson, and Robinson, 2002).

Interpretation

The facts discussed in the previous section are relatively uncontroversial now. But what is the interpretation? Clearly, the story suggested by Enger-

5. Especially, Acemoglu, Johnson, and Robinson (2002).

man and Sokoloff is broadly consistent with these facts. The interpretation that Simon Johnson, James Robinson, and I offer has a lot in common with Engerman and Sokoloff's hypothesis. Places that were initially rich, for some reason or another, ended up with much worse institutions, while the places that were initially sparsely settled and poor, such as the United States, developed institutions that protected property rights, especially the property rights of a broad cross-section of society. This enabled many potential investors to take advantage of economic opportunities. In contrast, places with extractive institutions were characterized by a concentration of political power in the hands of a small elite (ranging from Caribbean planters to a monarchy or corrupt tyrants), and the vast majority of the population had no effective rights or protection.

In explaining these institutional differences, Engerman and Sokoloff place special emphasis on the type of crops that could be grown in different areas. In Acemoglu, Johnson, and Robinson, we instead highlight a number of factors that are similar to those highlighted by Engerman and Sokoloff but that differ in emphasis.[6] In particular, our work focuses much more on European settlements. In places where Europeans settled, it was in their interest to develop better institutions—or more specifically, to set up institutions that would protect them. This natural impetus toward good institutions was absent in places where they didn't settle.[7] The population density of the area at the time the Europeans arrived had an effect on the path of institutional development through its effect on settlement, since Europeans were more likely to settle in places that were sparsely populated. Population density also had a first-order effect over and above its effect through settlement: in places where there were more people, it was more profitable for Europeans to set up extractive institutions to exploit the existing population. Finally, richer places (that is, areas with great existing urbanization) probably offered good opportunities for extraction, making it more likely that colonizers would opt for extractive institutions.

In contrast, Engerman and Sokoloff emphasize factor endowments. Broadly construed, factor endowments could encompass population density and the disease environment affecting settlements. Engerman and

6. Acemoglu, Johnson, and Robinson (2001, 2002)

7. Based on this reasoning, Acemoglu, Johnson, and Robinson (2001) exploit differences in mortality rates faced by first settlers as a source of variation in institutions.

Sokoloff, however, are emphasizing a narrower set of factor endowments—namely, the types of crops that could be grown productively. Their argument is that crops like sugar and cotton have substantial economies of scale that foster the development of extractive institutions. Crops like grains, which exhibit weaker economies of scale, encourage a freeholder society that protects the rights of a broad cross-section, especially in areas with abundant land.

Which of these two views is more likely to be true? The answer is that it is hard to tell. To start with, the two stories are quite similar, and an analysis of individual cases shows that all of these factors seem to be important. For example, the development of slave societies in the Caribbean fits the Engerman-Sokoloff theory very well, in that these places had relatively high population density at the time Europeans arrived (although the population quickly disappeared because of European diseases). On the other hand, the type of crops seems to matter less in the colonization of the Old World areas, whereas population density and mortality rates appear to be very important both within the New World and the Old World.[8]

The two lines of study are thus drawing close to an interpretation that is supported both empirically and historically and on which a number of researchers broadly agree. Institutional differences emerging from differences in colonization strategy have had an important effect on the economic development of these societies. Moreover, the general consensus is that the right way to think about the sources of the differences in colonization strategies is to consider which strategies were more profitable or more natural in different environments.

Institutional Persistence

This story is not complete, however. It can explain why Europeans set up extractive institutions in certain places in 1600, but why did these places continue to have extractive institutions in 1900 or even today? In other words, underlying the different views is a theory of institutional persistence—and this theory is hard to come by, hard to test, and often implicit.

Why do institutions persist? Engerman and Sokoloff emphasize economic inequality as the key intervening variable. In their theory, high economic inequality leads to bad institutions; bad institutions, in turn, support high economic inequality, which leads to the persistence of bad

8. See Acemoglu, Johnson, and Robinson (2001, 2002); Easterly and Levine (2002).

institutions. Economic inequality is also bad for economic performance, and bad institutions might also have a negative effect on economic performance.

The key point in this representation is that economic inequality is the state variable. If one were to write down a full-fledged dynamic model, the state variable that shapes the equilibrium in a given period and transmits incentives from one period to another would be economic inequality.

This view is fashionable in economics today, which is a plus—but it is also perhaps a cause for concern, given the tendency of our profession to form herds. Evidence in support of this view is actually scarce. Engerman and Sokoloff show evidence consistent with this view, but their evidence is also consistent with many alternatives. For example, they show how extension of the franchise in Latin America increased schooling, and they interpret the relatively late arrival of consolidated democracy in many Latin American countries as a form of bad institutions supporting economic inequality.[9] These examples, however, raise the typical problem of what is the cause and what is the effect. It could well be that the key issue is *political* inequality. In many places, only a small fraction of the population had access to political voice. More explicitly, a small elite controlled the state apparatus, with little constraints or checks and balances. This type of political inequality leads to a lot of distortions. It also regenerates itself: those who hold political power today are likely to hold it tomorrow, and if a new group manages to come to political power, they will make use of existing institutions to dominate the rest of the society.

An alternative theory might thus be one in which the state variable is political inequality rather than economic inequality. It can account for many of the regularities discussed above, and the existing evidence cannot distinguish between the political inequality view and the economic inequality view. Since I am more sympathetic to the former perspective, let me elaborate a bit. If political power is concentrated in the hands of a small elite, and if few constraints limit what this political elite can do, then this creates three major problems. First, agents with economic opportunities are unlikely to use the opportunities, since they are afraid that their efforts will be blocked because political power is vested in the hands of others. Second, given the rents associated with political power when only

9. Extension of the franchise also increased schooling in Europe; see Acemoglu and Robinson (2000b).

a few people dominate the society, there will be continuous infighting and instability when different groups fight to take control of the state. Third, elites who have political power today may want to block innovation because they fear losing their power.[10] According to this view, then, unequal wealth and income distribution could be the consequence, while persistent political inequality is the cause.

Overall, for this whole research program to generate a more complete account of the historical roots of institutional differences (and consequently of economic differences), it needs a good theory of institutional persistence, and it needs to empirically substantiate the different implications of such a theory. We are not at that point yet, but I am sure that future work by Engerman and Sokoloff, and others, will take us closer to this objective.

Other Questions

Advances in social sciences often pose more questions than they answer. The above facts and interpretations provide an interesting picture of the historical roots of institutional differences, but they give rise to many other questions that economists would not have asked before. In this last part of my discussion, I highlight some of these questions in the hope that economists, political scientists, and economic historians will consider them more carefully.

The first question is related to the discussion in the previous section. Why do bad institutions persist? Haiti serves as an interesting example of institutional persistence. Eighteenth-century Haiti was dominated by a few large slave owners, and the society was the archetypal plantation economy. Then the existing system was overthrown by a revolution. One might think that this would have been the ideal time for a large institutional change toward better institutions, but instead, things went from bad to worse. Why?

The second question stems from Engerman and Sokoloff's argument that endowments affect institutions. The link is far from deterministic. Two cases are extremely interesting in showing how the same endowments can lead to different production structures and different institutions. The first is smallholder production of sugar in Queensland, Australia.[11] Is

10. Acemoglu and Robinson (2000a, 2002).
11. See, for example, Denoon (1983).

this the exception that proves the rule? Very special circumstances predominated in Australia, related to immigration policy and the conflict between smallholders and potential large landowners. Irrespective of the specific circumstances, however, the effects of narrow factor endowments appear to have been dominated by other factors. Engerman and Sokoloff need to account for why sugar can be produced by smallholders as well as on plantations as in the Caribbean.

The other interesting example is that of a sugar producer that became an institutionally successful economy—namely, Mauritius. Mauritius grew very rapidly in the postwar period, largely because of good policies supported by relatively stable institutions. In fact, a socialist party was responsible for expanding the export processing zones and encouraging rapid growth.[12] How did this work, given that the factor endowments in Mauritius should have encouraged the establishment of extractive institutions?

An important point in Engerman and Sokoloff's argument is that economic inequality is an important factor in economic failures. This raises the third question: is there direct evidence that lack of human capital and other problems associated with economic inequality were important in the economic history of the Caribbean? In particular, did they play an important role in the lack of industrialization in the Caribbean?

Finally, was the United States really economically equal at the end of the eighteenth century? If so, was this economic equality important for industrialization? Or was it that the political environment was conducive to investment? Other work by Sokoloff points to some initial answers.[13] It seems that new entrepreneurs were extremely important in the industrialization experience of the United States. But does this indicate that an equal distribution of human capital is essential, or that the investment incentives of potential entrepreneurs need to be supported?

Institutions: More than a Black Box?

I close by posing the most important question of all: what are institutions? Engerman and Sokoloff's paper, my own work in conjunction with Johnson and Robinson, and many other research projects treat institutions as a black box. In Acemoglu, Johnson, and Robinson, we explicitly state that we think of institutions as a cluster of social arrangements, including

12. See, for example, Bowman (1991).
13. For example, Khan and Sokoloff (1998).

property rights, equal opportunity for a broad cross-section of the population, rule of law, and constraints on politicians.[14] But which of these different dimensions matter more than the others? Is it the judiciary procedures, as many law and economic scholars would claim? Is it protection for shareholders and creditors? Is it institutions of conflict management?

At the moment, no one knows. History seems to offer important lessons, however, since many of these different dimensions of institutions changed at different points and, more generally, typically followed different broad trajectories. In this regard, the substantial historical variation within the Caribbean economies is pertinent, although it is difficult to capture with standard quantitative measures. This is the type of variation that Engerman and Sokoloff are very well placed to exploit. I look forward to seeing more research on this and other topics from Ken and Stan.

14. Acemoglu, Johnson, and Robinson (2001, 2002).

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