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The Colonial Origins of Comparative Development: A Skeptical Note

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Abstract: »Die Kolonialursprünge der vergleichenden Entwicklungsforschung: Eine skeptische Anmerkung«. This note casts skepticism over various hypothesis formulated by Acemoglu, Johnson, and Robinson (2001) in reaching the conclusion that institutions cause economic development. I have identified four major issues in the study. It lacks adequate econometric specification and relies only on, what I termed, destiny variables. Secondly, the historical record does not support the author's theory that mortality rate determine Europeans strategy for institutions they intended to develop in the host country; thirdly, given current living standards and disease ridden environment in low and middle income countries, the claim that disease environment of early 19th century was neutral to economic development seems farfetched; finally, assuming that initial institutions caused present institutions put in question the developmental efforts of past half century and thus is more than a sweeping generalization.

Keywords: economic development, economic history, comparison.

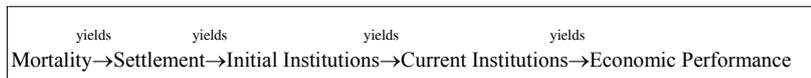
In the context of economic development, institutions are taken to be the sets of rules governing the actions of individuals and organizations, and the interaction of all relevant parties and the negotiations among the participants (World Development Report, 1999/2000, page 2). In recent years, there is an increasing emphasis on the role of institutions in the economic performance of countries. In particular, the institutions that ensure private property (both intellectual and physical), open and free trade of goods and services, and freedom to business and investment are generally considered as enabling institutions for economic growth. The paper by Acemogly, Johnson, and Robinson (2001) (henceforth, AJR) makes an empirical investigation of the effect of institutions on economic performance. However, the paper lacks in some important respects and, as I will argue, exaggerates the role of institutions. The reasoning put forward is not persuasive due to many statistical, economical, and historical counter examples.

In the following pages I would first summarize the main argument of AJR and then show the main weaknesses in their approach. A conclusion is given in the end.

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1. Summarizing the Argument of AJR

The principal hypothesis of AJR is that institutions cause economic performance. To infer causality from institutions to economic development authors assume the strategy of colonial rulers as the major determinant of initial institutional structure of a country. The idea is that Europeans opted for a settlement strategy on the basis of their mortality rates in the host environment. Thus, greater mortality rates discourage them from long term settlement and they opted for extractive strategy i.e. plundering of the host countries resources for the benefit of mother country. Durable and effective institutions were set up in regions where they found greater feasibility for settlement. In empirical analysis thus, the European mortality rate is taken as an exogenous predictor of the European settlement strategy vis-à-vis institutions, and this predictor is used to capture the variation in the present institutional setup due to this so called colonial origin which in turn explains the present economic performance of a sample of countries. In a simple path diagram we can show it as follows:



However each of the link in the above chain of reasoning is a multi-faceted hypothesis in itself. Before going into the details of this chain of reasoning it is appropriate to take a closer look at the econometric specification of the authors.

Their second stage equation of the 2SLS estimator is:

$$R_i = \zeta + \beta \log M_i + X_i' \delta + \vartheta_i$$

where R_i is the current economic performance (i.e. log GDP per capita in purchasing power parity dollars in 1995) and log of mortality rate M is used as an instrument for the institutional quality of the country. Authors take *average protection against expropriation* as a measure of the institutional quality. X_i' is a vector of other covariates, and ϑ_i is a random error term.

2. Econometric Specification Issues

Authors use instrumental variable 2SLS regression for causality analysis from institutions to economic performance. They use simple regression equation (i.e. only with one or two explanatory variables except in the robustness analysis, but more on it below) to prove their point that institutions cause economic performance. In their basic regression, using sole regressor which is the quality of institutions measured through protection against expropriation, results are valid. But this regression assumes away all the other determinants of economic development. In other words, it is assuming that economic performance takes-

place in isolation without any other factors determining its course. Applying this logic, it means that country A's performance has nothing to do with the innovativeness of their labor, the man hour that they put in factories and offices, the leadership that take decisions, and its external relations with the world. To the extent that these factors play their role, and it is difficult to say no both on theoretical and empirical basis, we cannot rule out the omitted variables bias.

Table 1: AJR's Regressors in Various Specifications

Regression	Economic variables	Destiny variables	Other variables
Table 4 Regressors	Institutions	Latitude, Asia dummy, Africa dummy, Other continent dummy	
Table 5 Regressors			British Colonial dummy, French Colonial dummy, French legal origin dummy
Table 6 Regressors		Temperature, humidity, population with European decent (%), soil quality, Natural resources, landlocked, Ethno linguistic fragmentation	
Table 7 Regressors		Malaria, Life expectancy, Infant mortality	

Going beyond the basic regression issues, authors include other variables in their various specifications. However, one astonishing feature of the various specifications that authors employed in their analysis is the conspicuous absence of any long term determinant of economic performance like productivity growth, population growth, and human capital, as shown in Table 1. On the contrary, the major group of explanatory variables is destiny variables i.e. geographical and climatic variables. Given this scheme, one can never be sure that the causal relation, as concluded by the authors, would hold in a more generalized setting (due to omitted variable effects, see Stock and Watson, 2007, chapter 6). To give an alternative, one can hypothesize, with reference to chain of causality I mentioned above, that European settlements were low in those countries because they faced stiff competition by other colonizers and also by the host populations, these conditions does not permit them long term settlement, and created political divisions and rifts in the host countries which resulted in the weakness of institutions at the time of independence. One can provide, as I will do to some minor extent below, evidence and data in favor of all these claims.

Thirdly, even if we embrace the authors' econometric specifications, we have to face very un-economic implications of this reasoning. For example, it

implies that economic performance is determined by exogenous factors such as regional and geographical ones and the institutional set up whose existence too depend on climatic conditions that colonial rulers faced! In other words, this reasoning implies that poor economic performance is the fate and destiny of the poor nations rather than an outcome of economic factors!

3. Settlement as a Function of Mortality Rate

One weakness with the study is the data set that it has used for European mortality. This data set is based on mortality rates of European soldiers in colonies and not the mortality rate of a representative European settler. Authors themselves aware of this weakness as they write (section III.B page. 1382):

Curtin (1989), 'Death by Migration', deals primarily with the mortality of European troops from 1817 to 1848. At this time modern medicine was still in its infancy, and the European militaries did not yet understand how to control malaria and yellow fever. These mortality rates can therefore be interpreted as reasonable estimates of settler mortality.

The living conditions faced by a soldier are dramatically different from the ordinary person. For example, soldiers spend most of their time on field, traveling from one base to another, and in battle fields. In sum, the large proportion of an active soldier's life spent in outdoors. It is possible that soldier's mortality rate is higher than the mortality rate of the ordinary Europeans in the same colony. If that is the case then the use of this instrument make the estimates biased. As this biased is upward, so it will invoke an upward biased in the parameter estimates of 2SLS regression equation I mentioned above.

It left one wondering also on many other accounts. For example, if local people were immune to those diseases, as authors argued, then why did not Europeans also adopted their methods of keeping themselves safe from local diseases? Secondly, and more importantly, the colonizers were not going to live in the lands of Asia and Africa for the first time. There were European settlers in Asia, Africa, and Latin America well before the beginning of 17th century (the time period for which the mortality data, that authors' used, is available). For example, as mentioned in the Philip's Atlas of the World History (henceforth PAWH):

Spanish exploitation of the Caribbean islands began with the settlement of Hispaniola in 1493, followed by that of Cuba and Puerto Rico. These islands provided a base for the exploration of Central America, and the failure of the Spanish to find a sea route to Asia encouraged further colonization and plunder. Mainland settlement began in 1509-10 on the isthmus of Panama. (p. 117).

In the case of Asia, the record goes like that:

Over the next hundred years [from 1498] a Portuguese 'seaborne empire' spread around the coasts of the Indian Ocean, moving ever further east and developing a chain of forts linking Ormuz, Goa, Cochin, Ceylon (Sri Lanka),

Melaka, and Ternate. Japan was reached in 1542 and a settlement established in China, at Macau, in 1555. (p. 118).

That was not the case that only Portuguese were settled down in India, but it is true for other European colonizers. Thus, Dutch established their East India Company in 1602, and first French settlement in India dated back to 1664.

It is incomprehensible for a well-informed reader why authors exaggerated the Europeans lack of immunity against local diseases and local peoples immunity against them. On the contrary, a converse of this statement is supported from historical records mentioned in the PAWH page 114:

the Spanish conquest of Central and South America from the end of the 15th century was accompanied by the decimation of the native Indian population—not as a deliberate act of genocide but mainly as a result of diseases imported from Europe and a regime of forced labor. The estimated pre-conquest population of about 57 million was reduced to less than 6 million by the late 16th century. A similar fate awaited the smaller North American population when European colonists began to arrive in the 17th century.

This amounts to about 90 percent reduction in population!

The above mentioned facts imply that European mortality rate was not the main determinant of the European settlements. Then what determines the European preference for settlement? Although this question is outside the scope of this note, but we can sneak ample evidence about some cogent determinants. To this end, consider first that in North America, Canada, Australia, and New Zealand the population density was far less than what it was in India, Africa and many other Asian and Latin American countries. And in some cases this already meager population in the former group of countries, was reduced by the dying away of locals either at the hands of their colonial masters or because of the diseases that they brought with them, as mentioned in the quote above. Further evidence is given by Robinson and Breasted (1921) in their authentic history of Europe, noting that at the beginning of 18th century, the North America was inhabited by just half million red Indians, while Indian subcontinent had a bustling populace of more than 200 million. For Canada, Robinson and Breasted wrote that

when it came into the hands of the English during the Seven Years' War, it was inhabited by some sixty-five thousand French colonists ... [During] the American Revolution many people from the United States fled to Canada, and, with the addition of immigrants from England, an English speaking population has gradually been built-up, — mostly outside of what is now the province of Quebec,— so that Canada now has eight million inhabitants. (p. 543).

Thus, one can detect the regularity easily: higher population density areas were not considered appropriate for settlement by the Europeans and vice versa.

The density of population deter Europeans but what lures them to 'Neo Europes'? The Europeans who preferred to settle in so called Neo Europes were those trying to escape from either religious persecution or were enticed by the fortune that they expected from the new lands (mostly in the form of gold and

diamonds). For example, Atlas of the World History mentioned, “the division of the Church during the 16th century Reformation, between Catholic and Protestant believers, encouraged international rivalry and emigration to the New World.” (page 15). Similarly, for Australia, no European power has made any serious attempt to settle down until the discovery of gold in 1851 which caused a rush of immigrants to Australia (Robinson and Breasted 1921).

4. Initial Institutions as a Function of European Settlement

As I mentioned previously, institutions are extremely difficult to define. They range from as diverse phenomena as institution of marriage at an individual level to such encompassing phenomena as freedom to govern at social level. In a sweeping generalization, authors assume that protection against the expropriation is the most important for development.

Authors proxied institutions to mean protection of property rights against expropriation which is not quite satisfactory for many reasons. First, it leaves one wondering about the implied type of property rights that are conducive to economic development. Definition of property has changed since the colonial era. In most of the colonial era and even in the 19th century, the slaves were considered a part of one’s property. Even just before the French revolution, as Taine (1899) reports in his account of the economic conditions before revolution, the nobility and the king were the absolute owners of property and industry and commerce were also in their hands. Such excessive property rights lead eventually to revolution and destabilization of the polity. The point is that property rights are not always same. And at many occasions can prove destabilizing.

Besides all the confusions related with the concept of institutions the historical evidence does not provide any support to the view that institutions cause good economic performance. Examples abound. An insightful account of Britain’s import substitution policy to established its woolen industry is provided by Chang (2007) to shatter the myth that UK’s economic developed was based on free market and free trade. In the same vain, Alexander Hamilton’s *The Report on the subject of manufacturers* that set the ideological stage for US industrialization recommended a heavy protection of domestic industries, the policy that is followed by all the presidents until the first quarter of 20th century (Chang 2007 and 2010).

If we take institutions as a government effectiveness and endearment of meritocracy, even then we cannot conclude anything. Because until 1870,

appointments of high-ranking civil servants in Britain were made on the basis of patronage, rather than merit. The government chief whip (equivalent to the majority leader in the US Congress) was then actually called the patronage secretary of the Treasury, because distributing patronage was his main job. In the USA, the ‘spoils’ system, where public offices were allocated to the loyal-

ists of the ruling party regardless of their professional qualifications, became entrenched in the early 19th century and was particularly rampant for a few decades after the Civil War. Not a single US federal bureaucrat was appointed through an open, competitive process until the 1883 Pendleton Act. But this was a period when the US was one of the fastest growing economies in the world. (Chang 2007, 148).

Another determinant of institutional development that authors considered is democracy. Democracy is generally hailed as an institution that can provide a shield against discretionary expropriations. Perhaps, because of this Acemoglu, Johnson, and Robinson have used protection against expropriation as a measure of institutional quality, it appears appropriate to consider this important ingredient of institutional black box. Defining democracy at the face value i.e. by the right to vote, we come to know that most of the today's developed countries have adopted universal suffrage only after Second World War. Included in this list are Australia, Canada, Belgium, Finland, France, Germany, Italy, Japan, Switzerland, and the US. On the other hand many dictatorial regimes deliver best economic outcomes for their populace. For example, S Korea, Taiwan, Singapore, China, Brazil, Pakistan posted their best economic performances under dictatorships and not under democracy.

5. Present Economic Performance as a Function of Initial (Colonial) Institutions

This assumption encapsulates many assumptions in itself. To take most important of them, it implies that effect of interventions on the systems in ex-colonized countries after their independence, is insignificant. It means that all the policies and programs being undertaken in itself by the governments of those countries or at the behest of IMF or World Bank were unable to have any macroeconomic affect so much so that today's economic performance is determined, in a statistically significant way, by the legacy of colonial institutions. Noting that a statistically significant relation implies that the joint distribution of variables entangled in a statistical model follows some assumptions, notably invariance over the period (see Spinos 2007). One feels bewildered that the impact of initial institutions as captured by Europeans mortality rate remains invariant over the decades.

A closer look is really warranted to evaluate this farfetched reasoning. Authors mentioned that two great causes of European mortality were Malaria and Yellow fever and that "these diseases were fatal to Europeans who had no immunity, they had limited effect on indigenous adults who had developed various types of immunities". Therefore, these diseases are unlikely to be the reason why many countries in Africa and Asia are at a relatively lower level of development. In other words, greater immunity of 19th century inhabitants of ex-colonial countries against malaria and yellow fever implies that these dis-

eases have no effect on their economic performance today. This claim appears at odds with World Health Organization's World Malaria Report (2010). In 2008, according to this report, mortality rate from malaria alone (i.e. deaths per 100,000 population) was 58 among low income countries while it is zero in high income and 0.2 in middle income countries. While annual death toll from Malaria over 1991 to 2009 period in Africa is 70584 while in South East Asia it is 4073. These figures are in sharp contrast to European countries average death rate of only 3 deaths on annual basis over the same period. One really requires a strong conviction on institution's impact on economic performance to agree with this assumption that such a disease environment has no effect on today's economic performance in those countries.

More importantly, the economic performance itself has not been invariant over the countries included in the sample of this study. To take just a broad category of African countries, they had respectable growth rates during 1950s and 1960s i.e. decades immediately after their independence. But their growth rates fall below 1 percent after 1980s. Similarly, the performances of Asian economies have diverse and variable patterns and cannot fall in line with the assumption of invariance as required by statistical specification (detailed analysis of development record in developing and developed countries can be found in Chang 2007).

Conclusion

My principal disagreement with ARJ is the chain of reasoning they devised and its negative implications for the developing countries. Although econometric specification can be improved upon to strengthen the inference but it is less important than the crux of the argument itself. The role of institutions in the process of economic development is difficult to disentangle because of the many sided nature of institutions. To put it mildly, it is incomprehensible that while Europeans could not settle down in foreign environment but local people, despite of their centuries old customs and institutions, readily embraced the European practices and institutions and which, up to the present day, continue to bear on their institutional set up and economic development. Moreover, some institutions acquire importance and power only after a society crosses some specific threshold of economic development. In other words, the causality runs from the development to institutions, though in an encompassing phenomena like economic development, the issue of causality is no less than the Holy Grail of our profession.

Above all, to attribute the low income countries' prevailing poor conditions to destiny variables rather than by taking responsibility for the policy mistakes and miscalculations, is not an appropriate scientific approach.

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