HS5.201 Growth and Development

Class Notes: Lecture 5

Institutions Matter, History and Economic Development

Institutions Matter

Readings:

- Acemoglu, Daron, Simon Johnson and James A. Robinson. 2005. "Institutions as a Fundamental Cause of Long-Run Growth" in Philippe Aghion and Steven Durlauf (edited) *Handbook of Economic Growth. Vol 1A. Elsevier. (page 388-407 for this lecture)*

Motivation:

- 'Why are some countries much poorer than others?'
- The growth models typically look at some determinants of growth: savings, population growth, human capital accumulation
- "the factors we have listed (innovation, economies of scale, education, capital accumulation, etc.) are not causes of growth; they *are* growth" (italics in original, North and Thomas, 1973). Factor accumulation and innovation are only *proximate* causes of growth. In North and Thomas's view, institutional differences fundamentally explain comparative growth. (Acemoglu et al 2005)

Institutions: How to define them?

- "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction…. Consequently, they structure the incentives in human exchange, whether political, social, or economic". (North, 1990)
- Common examples of economic institutions: Property rights
- How do property rights shape economic transactions and accumulation?

Neo-classical Economics and Property Rights:

- The starting point for any neo-classical model is preferences and endowments, which are placed in an environment that guarantees property rights.
- Property rights are, therefore, key in supporting investment and capital accumulation which provide the basis of growth in any capitalist economy.
- In economies where private property rights are not sacrosanct, accumulation or growth cannot be expected to occur through individual enterprise. The state or any such collective body has to be responsible for investment and capital accumulation. Ex: the Soviet System.

Institutions and Growth:

- Institutions are defined broadly as 'rules of the game' which govern economic transactions that are endogenous to a particular society.
- The connection between institution and growth.
- 'Better' institutions which are more conducive to an efficient allocation of resources, lead to a higher and more prosperous society.

- The laggards in the world economy are such because of 'worse' institutions.
- So the key to understanding divergence in the world is to understand the basis of the difference in institutional quality.

Other possible fundamental causes of growth:

- Geography: natural factors like climate and ecology determine the preferences as well as opportunity sets of economic agents
- This, in turn, determines the growth potential of a particular country or economy
- Examples: climate determines work effort and productivity; people in the tropics are lazy and less productive than people from temperate climates (some cultural prejudice is there as well)
- Climate restricts productivity in agriculture
- "By the start of the era of modem economic growth, if not much earlier, temperate-zone technologies were more productive than tropical-zone technologies . . ." [Sachs (2001].
- Geography and disease burden: certain climates are more susceptible to infectious diseases and, therefore, less favourable for growth
- Sub-Saharan Africa

Culture:

- Different societies have different cultural and religious roots, which inherently influence their growth processes
- Max Weber, the well-known sociologist, had the thesis of the 'Protestant ethic'- made up of thrift, hard work and contentment which has benefits for the advent of industrial capitalism in Europe
- On the other hand, caste-based discrimination in the Indian subcontinent was taken as a barrier to capitalist accumulation
- Various other theories on so-called 'backward' cultures in Asia and Africa explain their economic failure
- When Japan and other East Asian countries succeeded in increasing from the 1960s, that success was also related to Confucian values

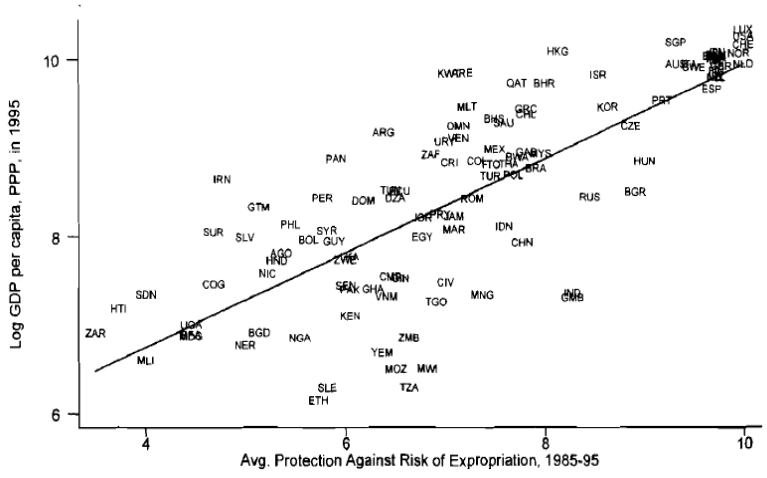

Figure 1. Average protection against risk of expropriation 1985–95 and log GDP per capita 1995.

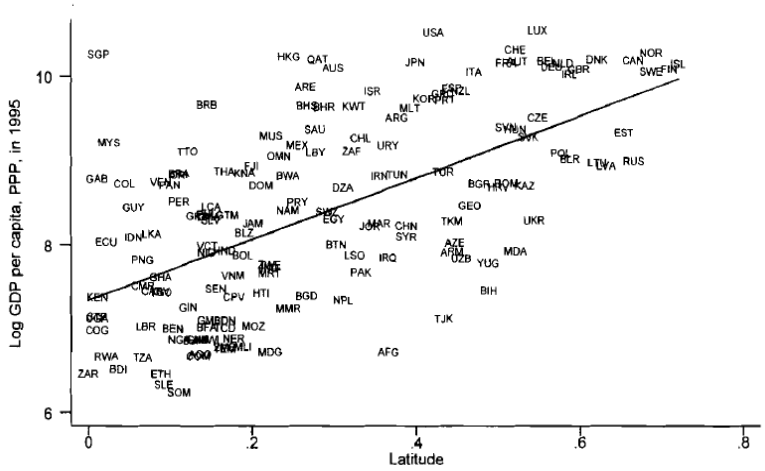

Figure 2. Latitude and log GDP per capita 1995.

The problems of establishing causality:

- The previous two scatterplots may be misinterpreted as definitive evidence of institutions or geographical factors determining income levels in different countries.
- But these are nothing but correlations.
- The question of omitted variable bias.
- How to establish causality empirically?
- Instrumental variables and natural experiments

Instrumental Variables:

- If y and x are correlated, to establish the causality of x on y, we identify an instrument z which is associated with x but not with y (except through x)
- Example: Settler mortality in different colonies was taken as an instrument to establish the causal relationship between institutions and development in a famous paper by Acemoglu, Johnson and Robinson (2001)

Natural Experiments

- Roots in scientific experiments, including medical trials.
- Compare treatment and control groups to understand the effect of a medicine.
- Pre-Condition: Control and treatment groups are otherwise identical
- In social science, natural experiments are harder to organise or even conceive
- Exception: Study the comparative development of North and South Korea since 1948
- Parts of the same country before that, similar in many ways in terms of culture, geography etc.
- Ruled under completely different institutional regimes
- Capitalist South vs Communist North

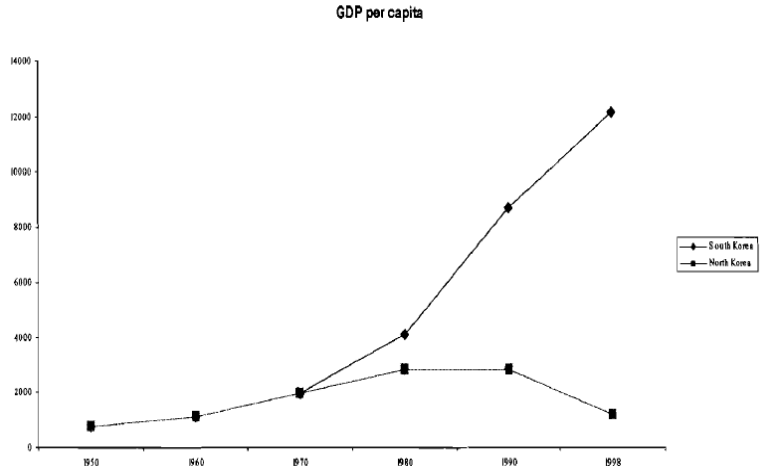

Figure 3. GDP per capita in North and South Korea, 1950–98.

Schematic framework showing how institutions matter:

Step 1: Economic institutions matter for economic growth

- They shape the economic incentives of agents in the economy and determine essential decisions regarding investment, technology and production patterns
- Apart from the extent of economic value generated, they also determine how this value is distributed among different classes/groups in the economy
- Economic Institutions (t) => Economic Performance (t) + Distribution of Value (t+1)

Step 2: Economic Institutions are endogenous

- They are determined by the collective choices made by the society
- However, since different sets of institutions yield different distributions of the value created, there is a scope for conflict of interest over the choice of institutions.
- The exact equilibrium of institutions is based on the configuration of political power between contending groups/classes.
- So, political power (t) => Economic Institutions (t)

Digression: Why do contending political groups not settle for the most efficient institutions?

- In formal economics, why is there no separation of efficiency and distribution?
- The separability of efficiency and distribution is based on the assumption of a perfect compensatory (tax-transfer) mechanism after production
- However, in reality, there is a problem of commitment among contending groups about the use of value created
- There is no guarantee that the group in the power of resource use will not use it to further its interest.
- This is the reason we often end up with inefficient institutions, although the possibility of Pareto improvement is present by choosing 'better' institutions

Step 3: Distribution of political power is also endogenous

- De jure vs de facto political power
- Political institutions at any given point in time lead to de jure political power
- Example: democracy vs monarchy
- De facto power, however, depends more on access to economic resources
- There is also the possibility of a political ideology that can take along a large section of the population along and wield de facto political power
- Sticking to the first possibility, the distribution of resources/value determines de facto political power
- Political institutions (t) => de jure political power and distribution of value(t) => de facto political power
- Combining de jure and de facto political power, we have the determination of political power in a given period

History and Economic Development

Readings:

- Nunn, Nathan. 2009. "The Importance of History for Economic Development". *Annual Review of Economics*. 1: 65-92.(65-75 for this class)

Role of History:

- In the previous discussion, we dealt with the impact of institutions on growth and economic performance
- In a schematic framework, we looked at how this impact works itself out in stages
- This framework itself incorporates a time dimension
- In other words, history is inbuilt into this analysis in terms of the evolution of political and economic institutions
- However, in this lecture, we try to understand how specific historical events shape growth trajectories in different parts of the world

What kind of historical events matter?

- In this literature, the focus is on long-term impact, and short-term shocks are not considered.
- Major historical events which may be expected to change the economic structure or economic institutions fundamentally are typically analysed
- Example: Colonial rule in case of developing countries, significant conflicts, major natural disasters etc

Goals of this empirical literature:

- To establish a causal linkage between historical events and long-term economic outcomes, i.e. to verify if history matters
- Use of various empirical strategies, including IV
- Also, understand the channels through which the historical event affect economic performance
- Historical events may include relatively long-lasting phenomena like colonialism

Example: Impact of the slave trade on long-term development

- Nunn (2008) reconstructs archival data on external slave trades from different parts of Africa using different slave trading routes
- He finds a clear negative association between current economic performance (both levels and growth) and the extent of slave exports from countries within Africa
- Why this result may not imply causality?

Table 1: Total Slave Exports from Africa, 1400–1913

Slave Trade	1400–1599	1600–1699	1700–1799	1800–1913	1400–1913
trans-Atlantic	188,108	597,444	8,253,885	3,709,081	12,748,518
trans-Saharan	700,000	435,000	865,000	1,066,143	3,066,143
Red Sea	400,000	200,000	200,000	505,400	1,305,400
Indian Ocean	200,000	100,000	428,000	395,300	1,123,300
Total	1,488,108	1,332,444	9,746,885	5,675,924	18,243,361
Total/year	7,441	13,324	97,469	50,230	35,562

Table 2: Total Slave Exports, 1400–1913: Top 10 countries

Country	Number Exported	Percent of total
Nigeria	2,326,526	13%
Zaire	2,184,318	12%
Angola	2,095,149	12%
Ghana	1,459,691	8%
Ethiopia	1,217,724	7%
Sudan	1,174,049	7%
Benin	928,963	5%
Mozambique	710,657	4%
Congo	706,931	4%

Table 3: Income and slave exports, controlling for size with land area. Dependent variable is log real per capita GDP in 1998.

	(1)	(2)	(3)	(4)	(5)	(6)
ln(exports)	−.10	−.11		−.10	−.11	
	(−5.56)	(−4.93)		(−6.04)	(−5.11)	
ln(area)		.04			.03	
		(.74)			(.61)	
ln(exports/area)			−.12			−.12
			(−5.37)			(−5.68)
Britain				.18	.15	.15
				(.38)	(.33)	(.31)
France				.44	.44	.46
				(.96)	(.94)	(.97)
Portugal				−.08	−.07	.00
				(−.15)	(−.12)	(.00)
Belgium				−1.00	−1.00	−.94
				(−1.77)	(−1.75)	(−1.62)
Spain				.67	.72	.88
				(.89)	(.93)	(1.13)
U.N.				.71	.62	.47
				(.93)	(.79)	(.59)
Number obs.	50	50	50	50	50	50
R^2	.39	.40	.38	.57	.57	.54

Notes: t-statistics are reported in brackets.

Table 5: Growth and slave exports, controlling for size with land area. Dependent variable is per capita GDP growth from 1960 to 2000.

	(1)	(2)	(3)	(4)	(5)	(6)
ln(exports)	−.20	−.23		−.22	−.23	
	(−5.99)	(−5.34)		(−6.02)	(−5.09)	
ln(area)		.09			.07	
		(.81)			(.60)	
ln(exports/area)			−.25			−.25
			(−5.79)			(−5.66)
Britain				.29	.24	.23
				(.29)	(.24)	(.23)
France				.11	.11	.16
				(.12)	(.11)	(.16)
Portugal				−.18	−.15	−.01
				(−.16)	(−.14)	(−.01)
Belgium				−1.99	−1.98	−1.87
				(−1.68)	(−1.66)	(−1.54)
Spain				−.62	−.79	−.44
				(−.39)	(−.49)	(−.27)
U.N.				−.62	−.82	−1.13
				(−.39)	(−.50)	(−.68)
Number obs.	50	50	50	50	50	50
R^2	.42	.44	.41	.53	.53	.50

Notes: t-statistics are reported in brackets.

The problem of Selection bias:

- Were the largest slave-exporting regions also the most backward to start with?
- That could explain why these regions continue to do badly in economic terms.
- It could be a dual problem of selection bias and omitted variable

Identification Strategy:

- First, historical accounts of different regions were used to show that the most significant slave exports did not happen from particularly underdeveloped areas, i.e. selection bias was unlikely
- The second, more robust statistical method of instrumental variables
- Instruments: distance from various countries to major slave trading centres
- Correlated with a magnitude of slave exports but not with long-term economic performance

Table 11: IV Regressions.

	OLS (1)	IV (2)	IV (3)	OLS (4)	IV (5)	IV (6)
Second Stage. Dependent variable is Income						
ln(exports/area)	−.12	−.12	−.18	−.12	−.15	−.21
	(−5.37)	(−3.79)	−(4.56)	(−5.68)	(−4.97)	(−5.06)
Colonial dummies	No	No	No	Yes	Yes	Yes
F-stat	28.9	13.8	20.0	7.1	5.4	4.8
Number obs.	50	50	50	50	50	50
First Stage. Dependent variable is ln(exports/area)						
Interior distance		−.004			−.004	
		(−2.79)			(−2.80)	
Atlantic distance		−.002	−.001		−.002	−.001
		(−4.86)	(−3.78)		(−4.68)	(−3.50)
Indian distance		−.001	−.001		−.001	−.001
		(−3.58)	(−2.78)		(−3.25)	(−2.42)
Saharan distance		−.003	−.002		−.003	−.002
		(−3.55)	(−2.92)		(−3.09)	(−2.41)
Red Sea distance		−.002	−.001		−.002	−.001

How did extent of slave trade determine long term economic performance?

- Through institutions: robust evidence
- Through other channels: no statistically valid evidence
- No convincing theoretical explanation

Table 12: ln(exports/area) and various institutional measures.

	(1)				(2)			
Dependent Variable	beta coef	t-stat	N	R^2	beta coef	t-stat	N	R^2
Political Stability								
Military coups/year, independence to 2000	.32	2.39	52	.10	.32	2.19	52	.16
Avg number of revolutions per decade 1960–1990	.22	1.54	50	.05	.19	1.32	50	.15
Political Stability 2002	−.37	−2.80	52	.14	−.34	−2.57	52	.34
Quality of Government								
Government Effectiveness 2002	−.59	−5.21	52	.35	−.58	−5.10	52	.49
Regulatory Quality 2002	−.50	−4.08	52	.25	−.49	−4.28	52	.49
Control of Corruption 2002	−.57	−4.91	52	.33	−.62	−5.58	52	.53
Property Rights								
Average protection against expropriation risk	−.32	−2.18	43	.10	−.38	−2.42	43	.34
Rule of Law 2002	−.53	−4.39	52	.28	−.53	−4.41	52	.44
Accountability of Government								
Constraint on Executive 1990	−.31	−2.18	46	.10	−.30	−1.93	46	.21
Voice and Accountability 2002	−.37	−2.85	52	.14	−.34	−2.66	52	.38
Democracy Level in 1994 (1=low, 7=high)	−.42	−3.08	47	.17	−.44	−3.25	47	.41

History and Geography

- History matters vs geography matters
- Acemoglu et al. (2001) settler mortality rates in ex-colonies as an instrument to establish causality between institutions and economic performance
- Sachs (2003) argues that the instrument is flawed as high settler mortality implies unhealthy habitat, which is detrimental to long-term growth, i.e. the instrument is correlated with present-day economic performance
- Acemoglu et al. make a distinction between settler mortality vs native mortality
- Interaction of Geography and History
- Geography works through its influence on historical events