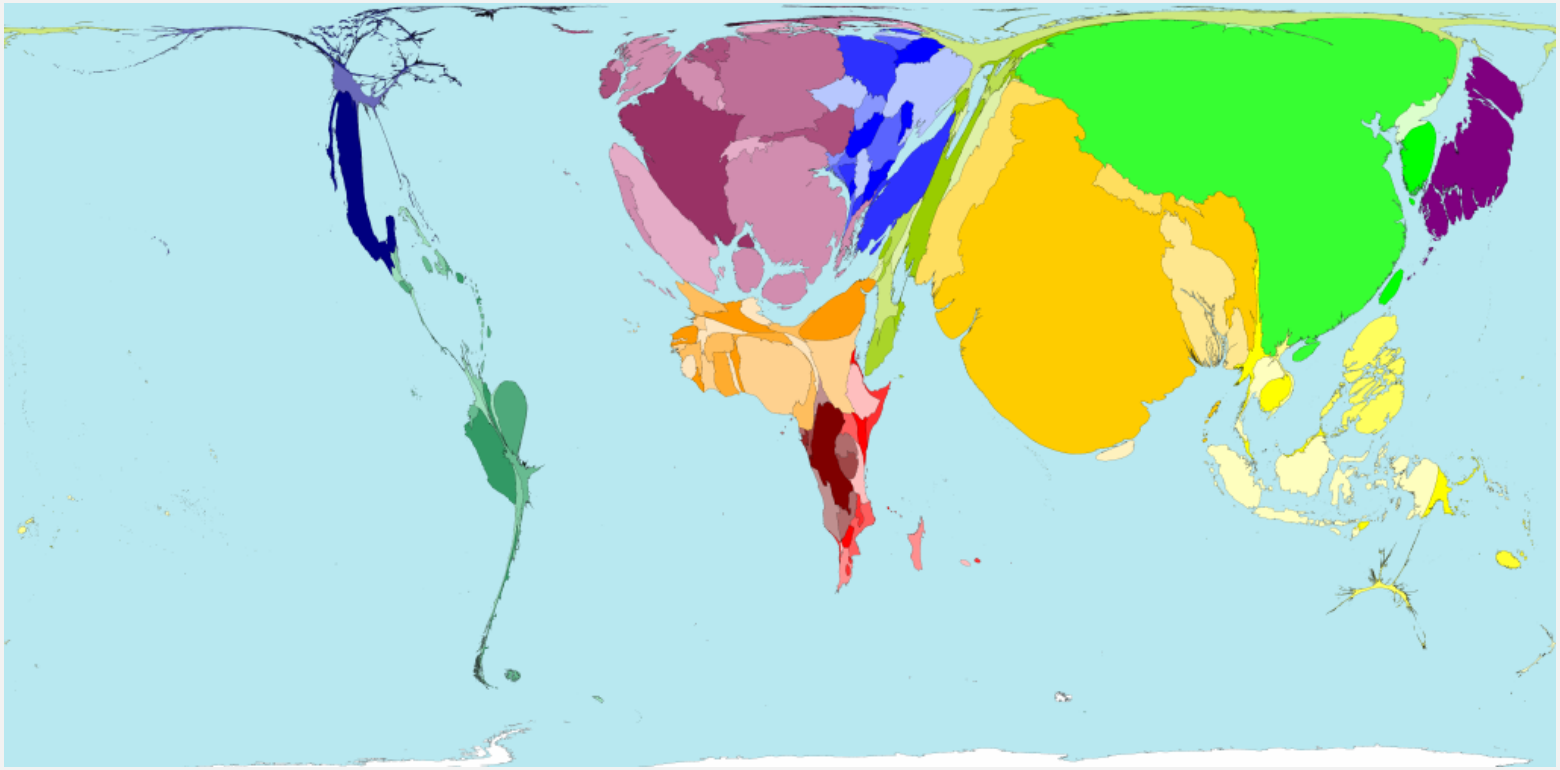
DEVELOPMENT ECONOMICS

EC310

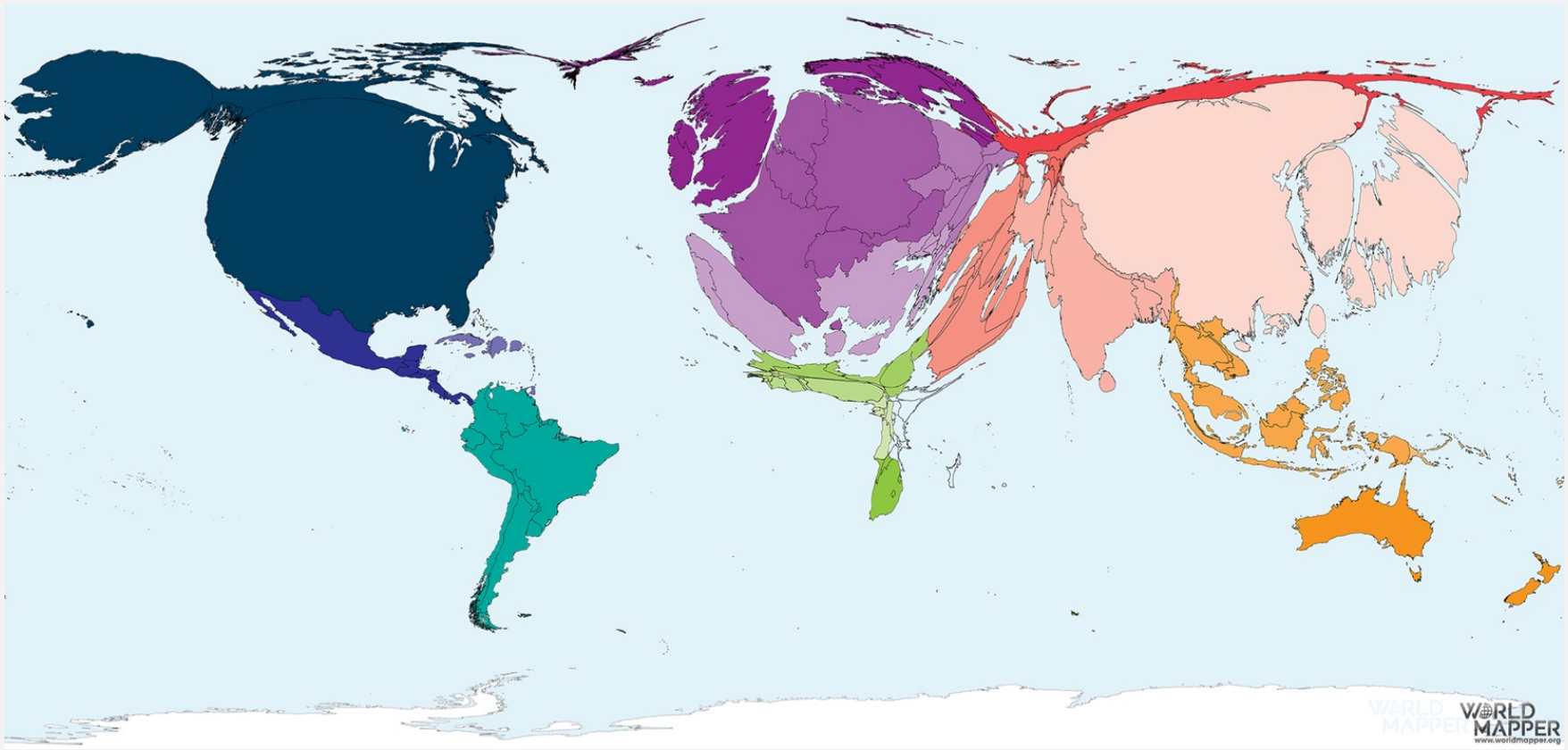
The Role of Institutions I

Professor Sharun W. Mukand

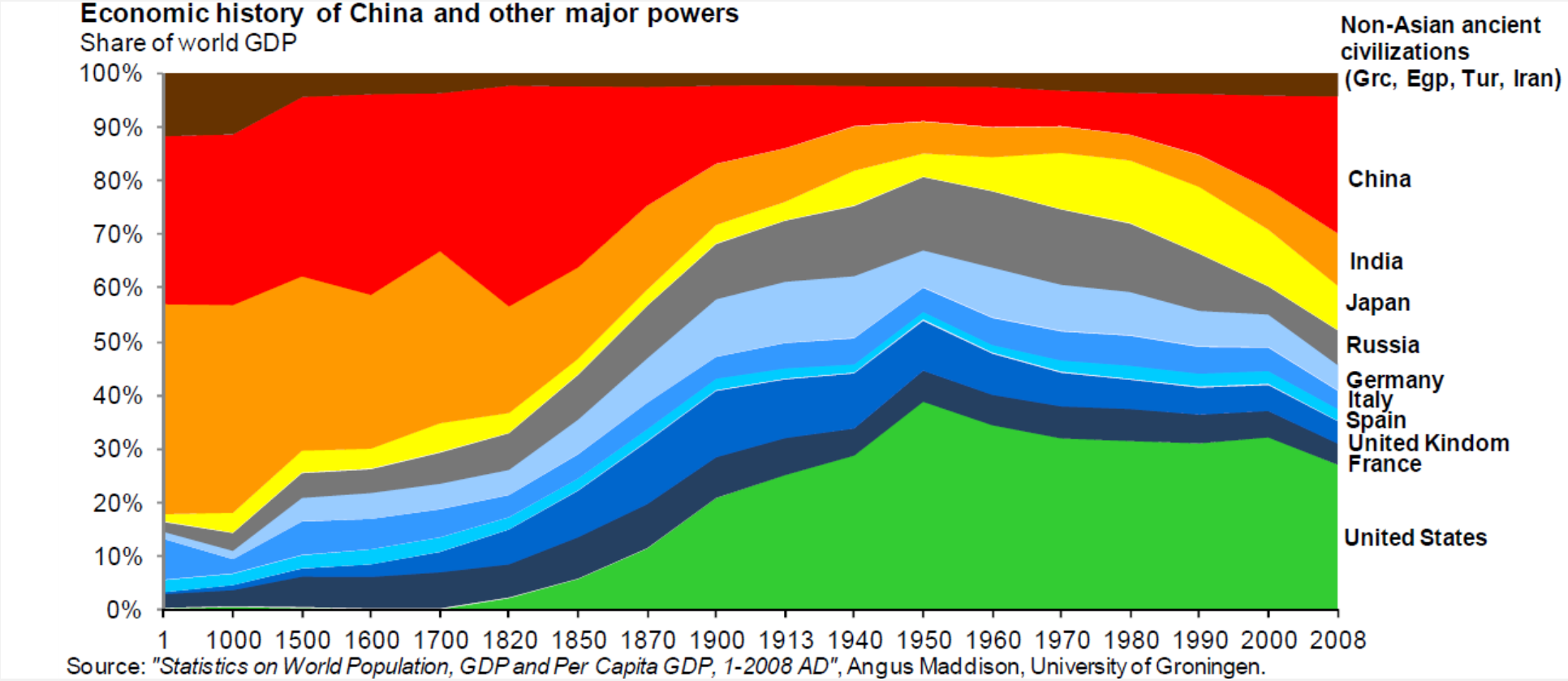
WEALTH (YEAR 1500)



WEALTH (YEAR 2018)



(I) EVOLUTION OF SHARE OF WORLD GDP: (1AD – 2025)



THE GREAT DIVERGENCE!

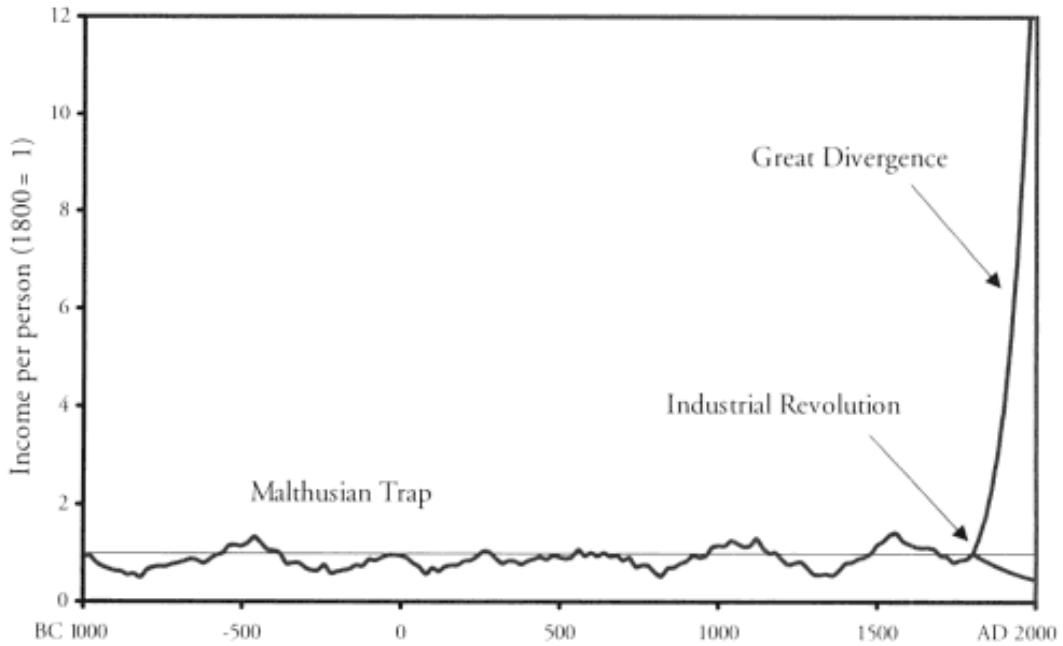


Figure 1.1 World economic history in one picture. Incomes rose sharply in many countries after 1800 but declined in others.

INSTITUTIONS II: THE 38TH PARALLEL

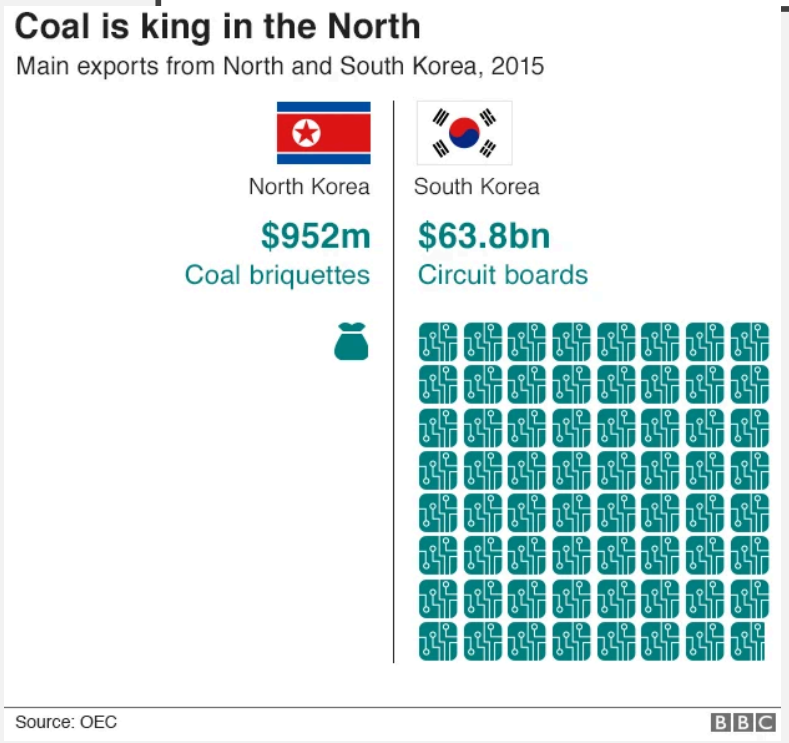
KOREAS: LEADERS SINCE 1948

3 VS 13+ AND COUNTING…

AFP

Protest organisers claimed 200,000 people turned out in Seoul

THE KOREAS….



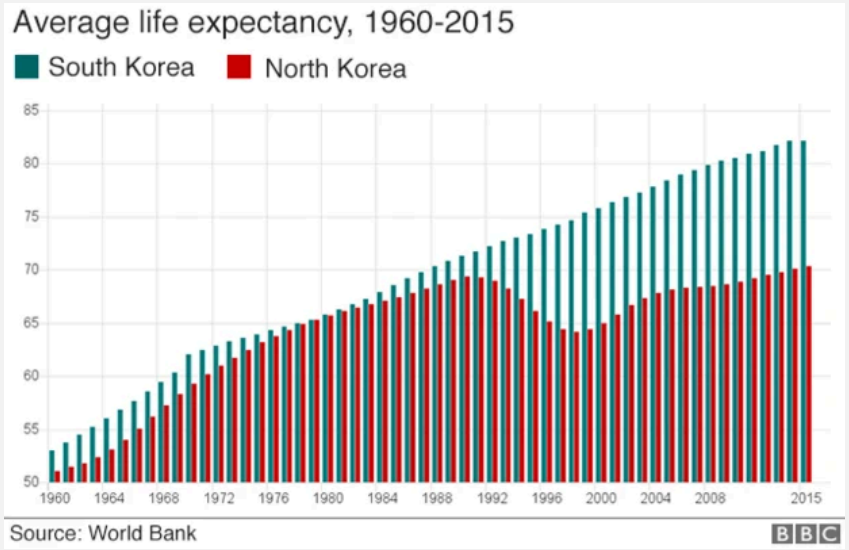
Military might

Active Personnel	North Korea	South Korea
Total	**1,190,000**	**630,000**
Army	1,020,000	495,000
Navy	60,000	70,000
Air force	110,000	65,000
Paramilitary	189,000	4,500
Reserves	5,700,000	4,500,000
Tanks	3,500	2,434
Aircraft	545	567
Submarines	73	23
Artillery	21,100	11,000

Source: The Military Balance 2017, IISS

BBC

SOUTH KOREANS LIVE LONGER…



BIRTH RATES…!!..


Birth rate per 1,000 people
S. Korea
North Korea
45
40
35
30
25
20
15
10
5
1960
1964
1968
1972
1976
1980
1984
1988
1992
1996
2000
2004
2008
2015
Source: World Bank
BBC

INSTITUTIONS: 38TH PARALLEL

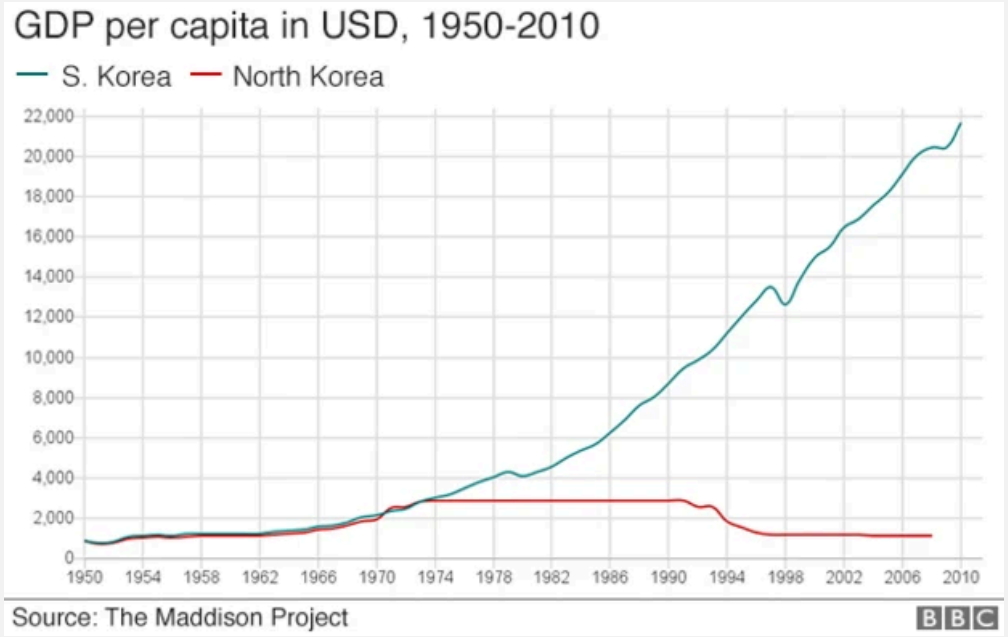
- 1945. Japanese colony in Korea collapses.
- Kim-il-Sung (anti-Japanese communist partisan) comes into power with help of USSR. Private property banned. Markets outlawed.
- South Korea was administered by the Americans.

NORTH KOREA

INSTITUTIONS?
II. THE KOREAN EXPERIMENT

- Korea: economically, culturally and ethnically homogeneous at the end of WWII.
- If anything, the North more industrialized.
- "Exogenous" separation of North and South, with radically different political and economic institutions.
  - Exogenous in the sense that institutional outcomes not related to the economic, cultural or geographic conditions in North and South.
  - Approximating an experiment where similar subjects are "treated" differently.
- Big differences in economic and political institutions.
  - Communism (planned economy) in the North.
  - Capitalism, albeit with government intervention and early on without democracy, in the South.
- Huge differences. *10 fold gap in incomes. (South Korea has incomes like Spain/Portugal. North Korea like a Sub-Saharan country).*

SOUTH & NORTH KOREA HAD SAME PER CAPITA INCOME IN 1973!



WHAT ARE INSTITUTIONS? (1)

- Institutions: the rules of the game in economic, political and social interactions.

  "**Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction." (North, 1990, p.3)**

- Key point: institutions
  - are humanly devised
  - set constraints
  - shape incentives

WHAT ARE INSTITUTIONS? (2)

- Important distinction between:
  - **Formal institutions:** codified rules, e.g. in the constitution
  - **Informal institutions:** related to how formal institutions are used, to distribution of power, social norms, and equilibrium.
    - Constitutions in U.S. and many Latin American countries similar, but the practice of politics, and constraints on presidents and elites very different.

Why? Because distribution of *political power* can be very different even when formal institutions are similar.

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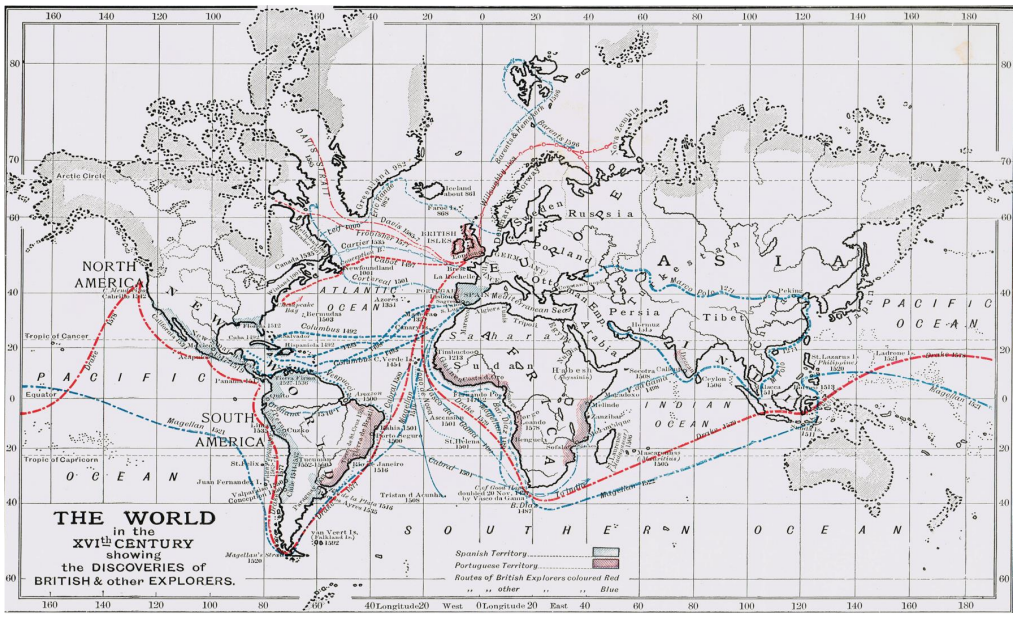
For five hundred years, Europeans tried to establish colonies everywhere, but with varying results…



Map of 16th Century European Exploration

CORTES AND MONTEZUMA

INSTITUTIONS OR SOMETHING ELSE…? LATIN AMERICA (DARON ACEMOGLU AND JIM ROBINSON, 2012)

- Juan Díaz de Solís explores Río de la Plata ("River of Silver") in 1516, and Pedro de Mendoza founds Buenos Aires in 1534.
- But Solís and de Mendoza unable to enslave and put to work the hunter gatherer Indians of the area, Charrúas and the Querandí. Starving Spaniards soon left the area.

- In 1537, Juan de Ayolas found the sedentary and more densely settled Guaraní up the Paraná river, in Paraguay. The Spaniards could successfully take over the Guaraní hierarchy, enslave them and put them to work to produce food for them.

- A very similar pattern to the colonization of the Aztecs and the Incas.

INSTITUTIONS OR SOMETHING ELSE…? UNITED STATES

- Colonization attempts of Virginia Company in Jamestown in early 17th century, attempting to re-create an authoritarian, "extractive" regime: complete and utter failure. Impossible to rule over the natives.
- *"No man or woman shall run away from the colony to the Indians, upon pain of death. Anyone who robs a garden, public or private, or a vineyard, or who steals ears of corn shall be punished with death. No member of the colony will sell or give any commodity of this country to a captain, mariner, master or sailor to transport out of the colony, for his own private uses, upon pain of death."*

[from the laws passed by Sir Thomas Gates and Sir Thomas Dale].

- But the Company was unsuccessful -- it could not force the English settlers into gang labor and low wages.

INSTITUTIONS OR SOMETHING ELSE…? UNITED STATES

- The Company switched to the "headright" system - giving all settlers 50 acres of land and then shortly thereafter also political rights, in the form of a General Assembly in 1619.

- Similar events unfolded in Pennsylvania, Maryland and the Carolinas. The chain of events that ultimately leading to the Declaration of Independence and the U.S. Constitution.

- The differences in the ways Latin America and North America were organized historically explain the differences in the ways they are organized today and their different levels of prosperity. (Acemoglu and Robinson, 2012)

INSTITUTIONS (PERU'S MINING MITA)

- The mita was a colonial system, begun in the 16th century, whereby villages in some areas were required to send a fraction of their working-age men to work in the state's silver and mercury mines (Potosi silver mines). Regions were sometimes included in the *mita* for geographical regions, but often were included solely because of their proximity to a colonial-era path leading to the mines.

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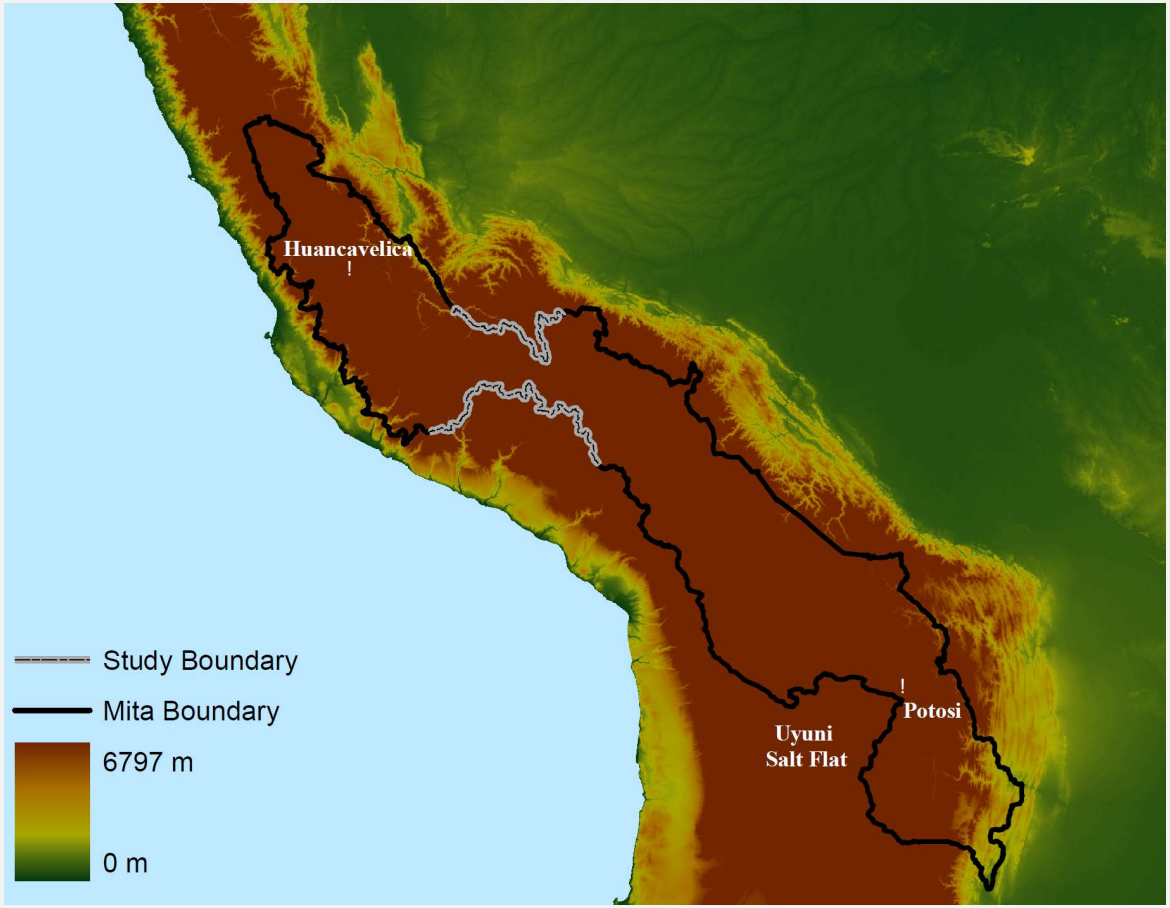
- There was (and is) no significant difference in language, percentage indigenous, etc. along the mita border.
- **Mita system abolished by 1812**: the mita boundary has had no official meaning in 200 years!

INSTITUTIONS (PERU'S MINING MITA)

- Dell (2010) presents evidence on long-term impacts of institutions by studying the persistent impacts of Peru's mining *mita using a* ***regression discontinuity*** *design.*
  - Mining *mita* was instituted by the Spanish government in 1573 and abolished in 1812.
  - Required communities near Potosi and Huancavelica mines in Peru to send **one- seventh of their adult male** population to work in the mines

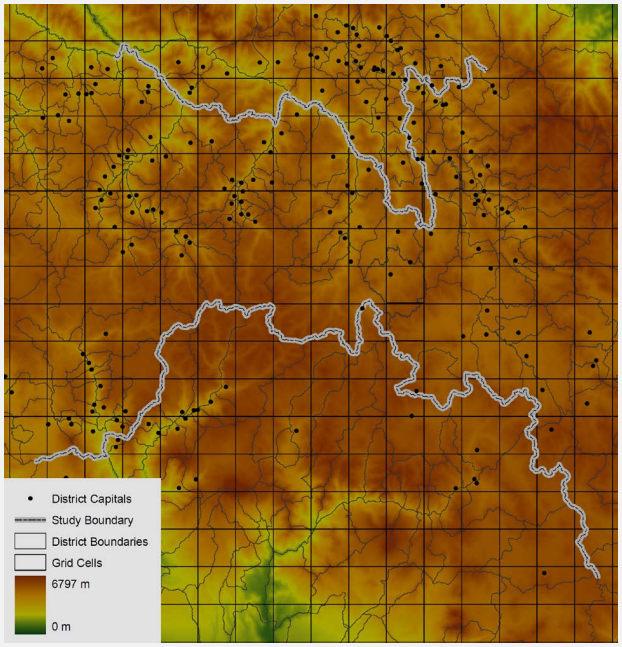
INSTITUTIONS AND PERU

MINING MITA



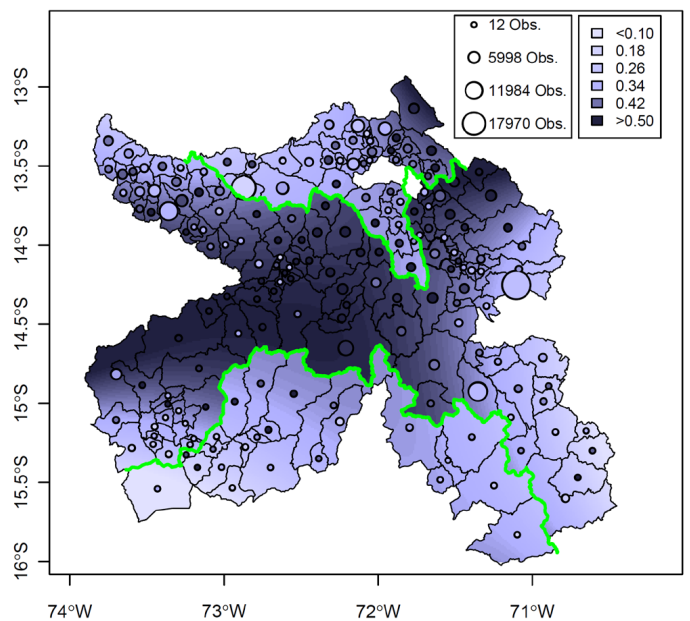
MELISSA DELL (2010)

Boundaries Used in Study

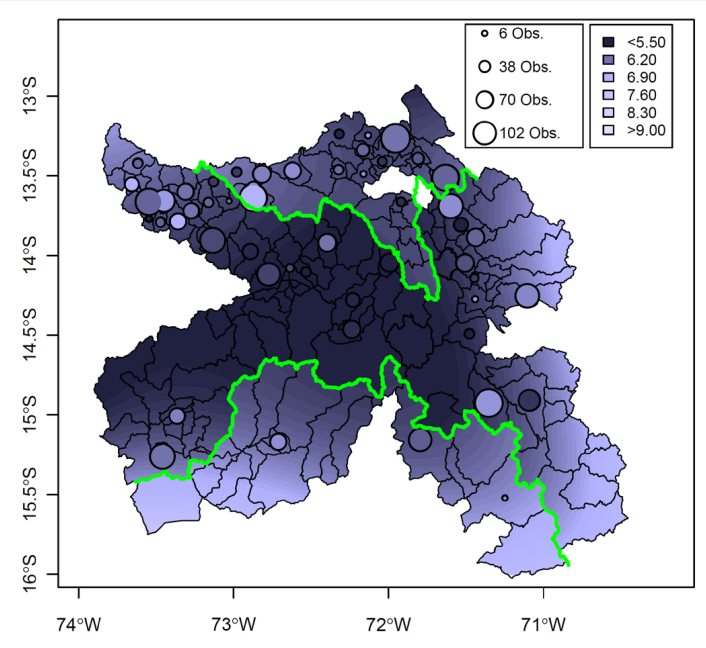


Source: Dell (2010)

Children's Heights in Present Day: Rates of Stunting



Household Consumption in 2001



Source: Dell (2010)

INSTITUTIONS AND PERU

Why is there a persistent effect of *mita* on present-day outcomes?

- Non-*mita* areas had a well-established system of land ownership and property rights. Why? Spanish settlers form haciendas…
- Most large rural estates in non-*mita* areas (*haciendas),* which provided employment opportunities and advocated for public goods

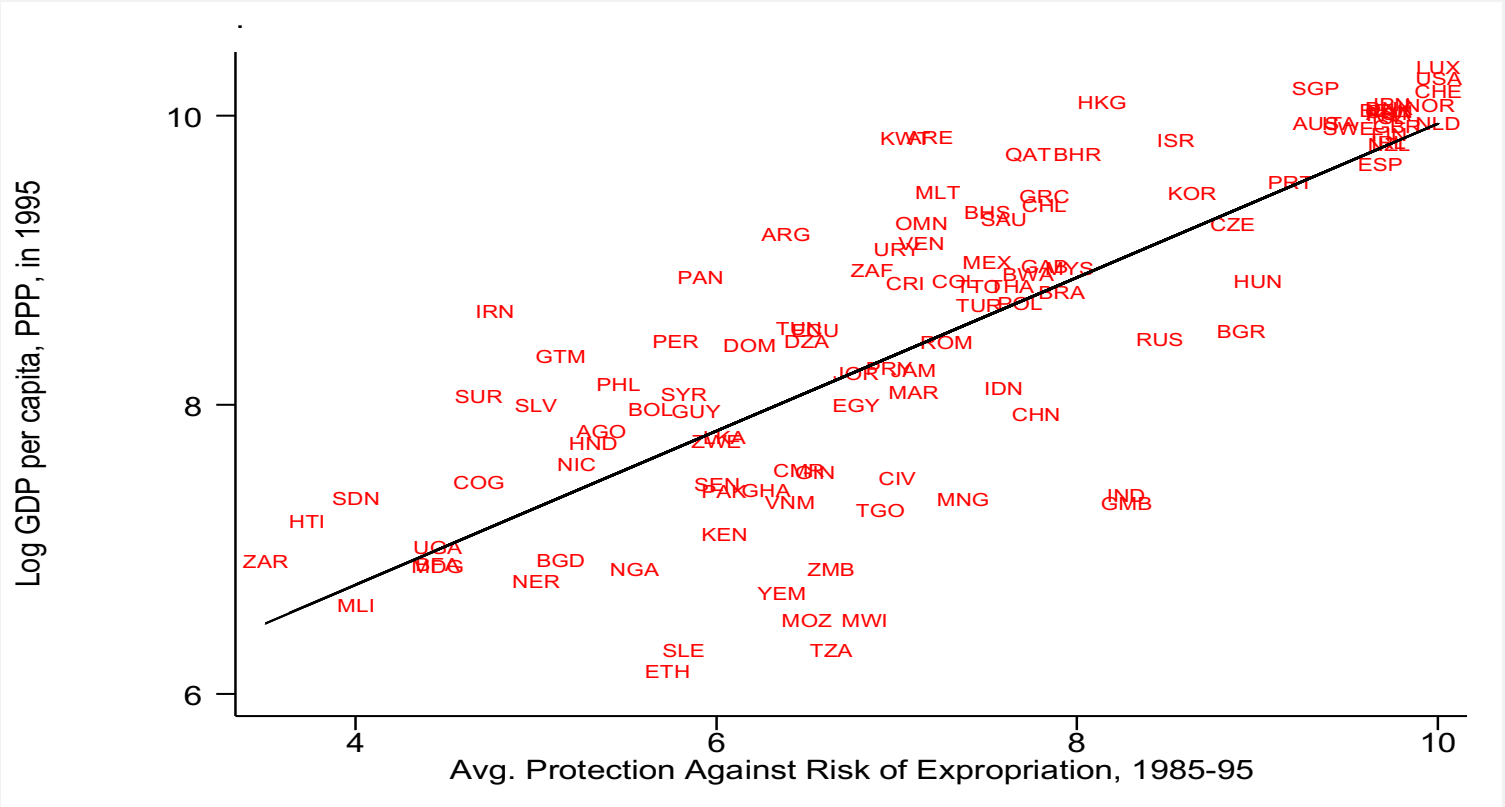
- But *mita* areas did not have clear property rights, and no system emerged even after *mita* system was ended.

LONG RUN IMPACT OF MITA INSTITUTIONS

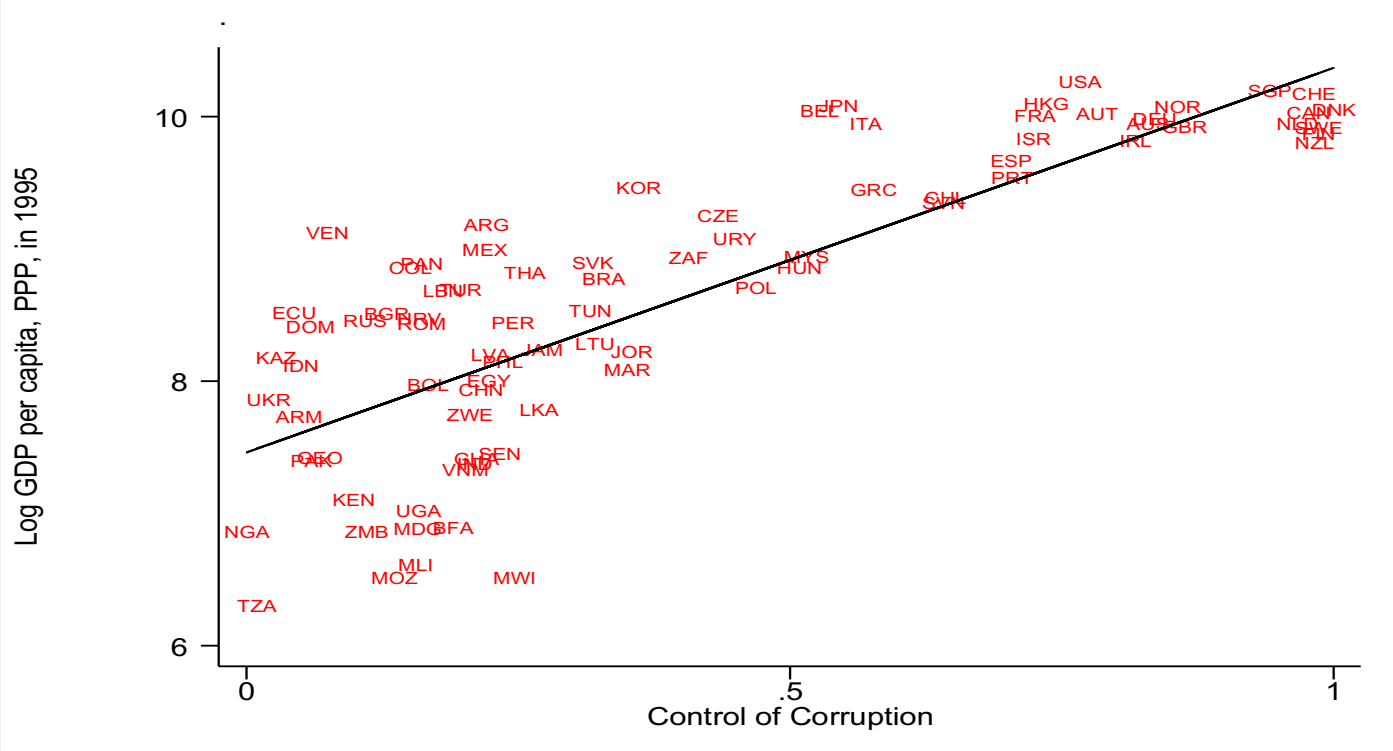
The *mita* system had substantial adverse impacts on economic outcomes by changing institutions:

- Negative impact on property rights/land ownership
  - Large reduction in number of *haciendas (large rural landowner estates)* → Haciendas formed outside mita areas. The stable landowning system gave landowners incentive to invest in public goods…
  - Impact on public goods
    - Large property owners advocate for roads and public goods investment in their area
- Impact on markets and productivity
  - Residents of *mita* districts are substantially more likely to be subsistence farmers today because of lack of access to markets and human capital

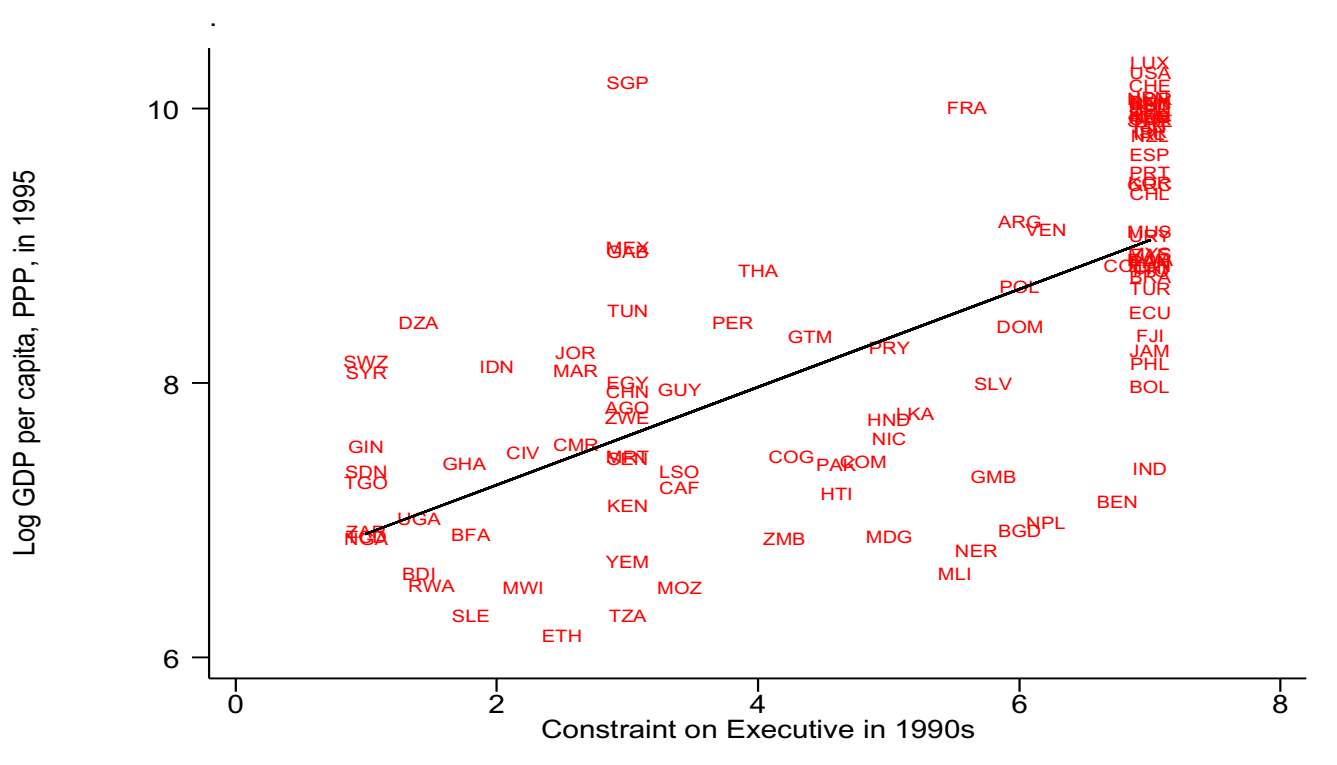
ECONOMIC INSTITUTIONS AND ECONOMIC PERFORMANCE (I)



ECONOMIC INSTITUTIONS AND ECONOMIC PERFORMANCE (2)



POLITICAL INSTITUTIONS AND ECONOMIC PERFORMANCE



BUT INSTITUTIONS ARE ENDOGENOUS

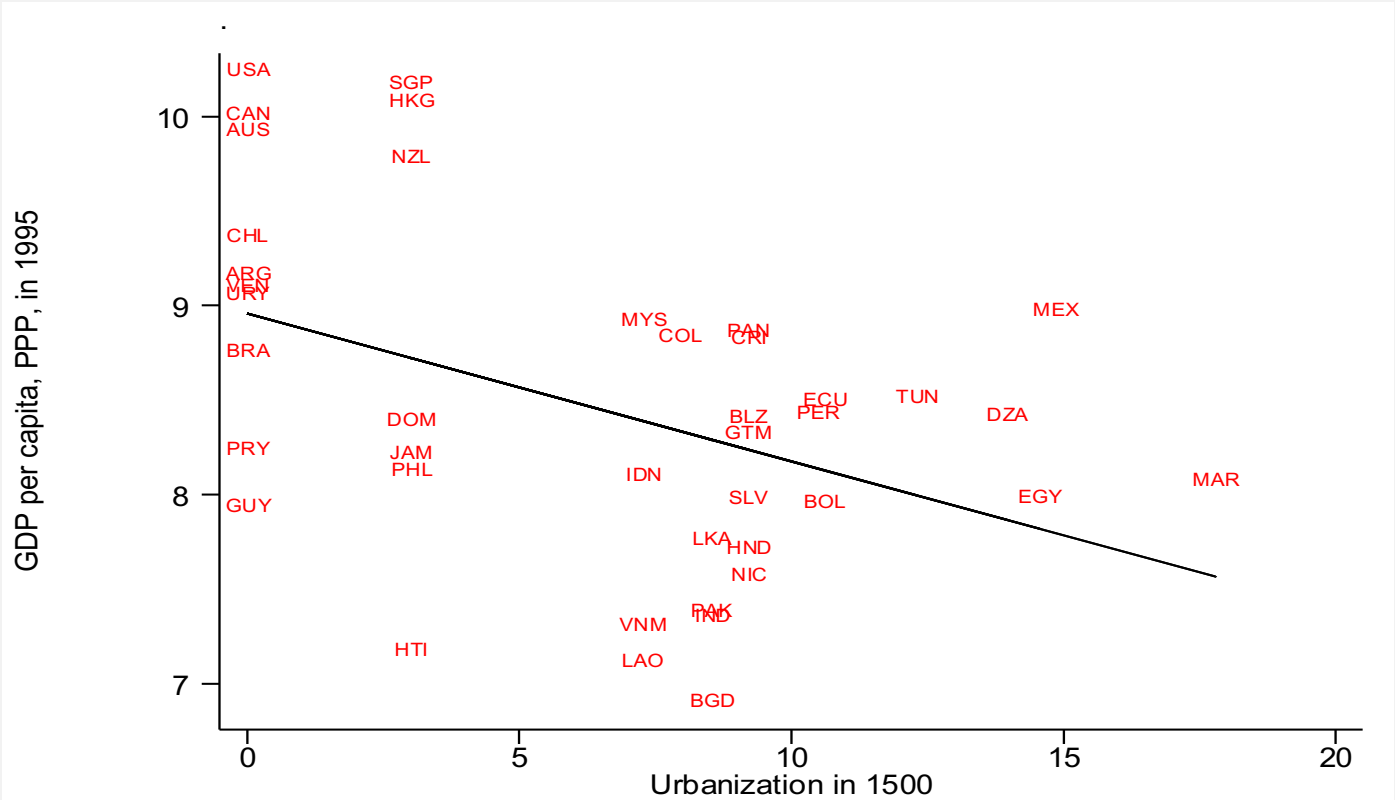
- Institutions could vary because underlying factors differ across countries.
  - Geography, ecology, climate
  - Culture
  - Perhaps other factors?
- Montesquieu's story:
  - Geography determines "human attitudes"
  - Human attitudes determine both economic performance and political system.
  - Institutions potentially influenced by the determinants of income.
- **Identification problem.**
  - We can learn only a limited amount from correlations and ordinary least square (OLS) regressions.

"REVERSAL OF FORTUNE: GEOGRAPHY AND INSTITUTIONS IN THE MAKING OF THE MODERN WORLD INCOME DISTRIBUTION" ACEMOGLU, JOHNSON AND ROBINSON, QJE (2002)

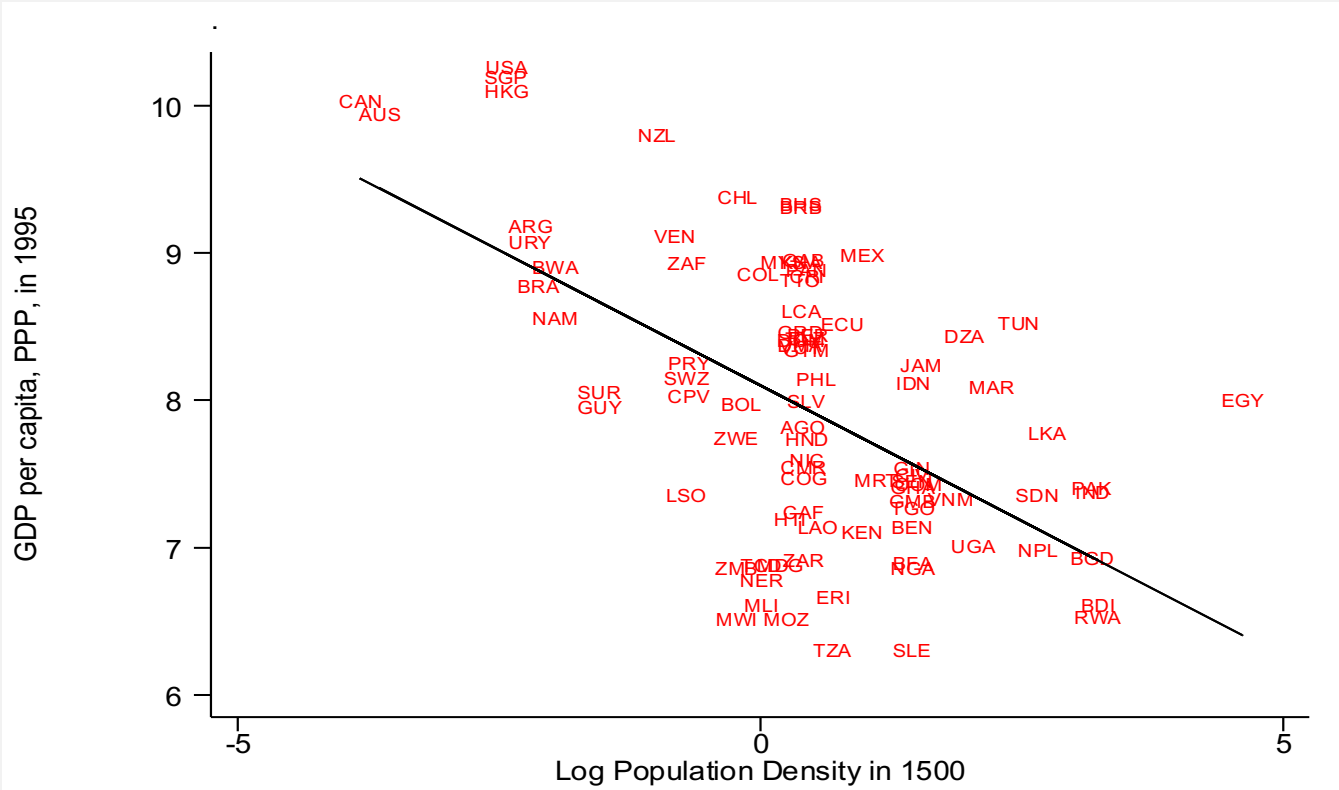
RESULTS: UNTIL 1500

- Persistence is the usual state of the world.
  - There is "mean reversion" and rise and decline of nations, and certainly of cities.
  - But countries that are relatively rich at a point in time tend to remain relatively rich.
- The data confirm this persistence.
  - After the initial spread of agriculture, there was remarkable persistence in urbanization and population density.
  - Largely true from 1000 BC to 1500 AD, and also for subperiods.
  - More important, true also in the former colonies sample.

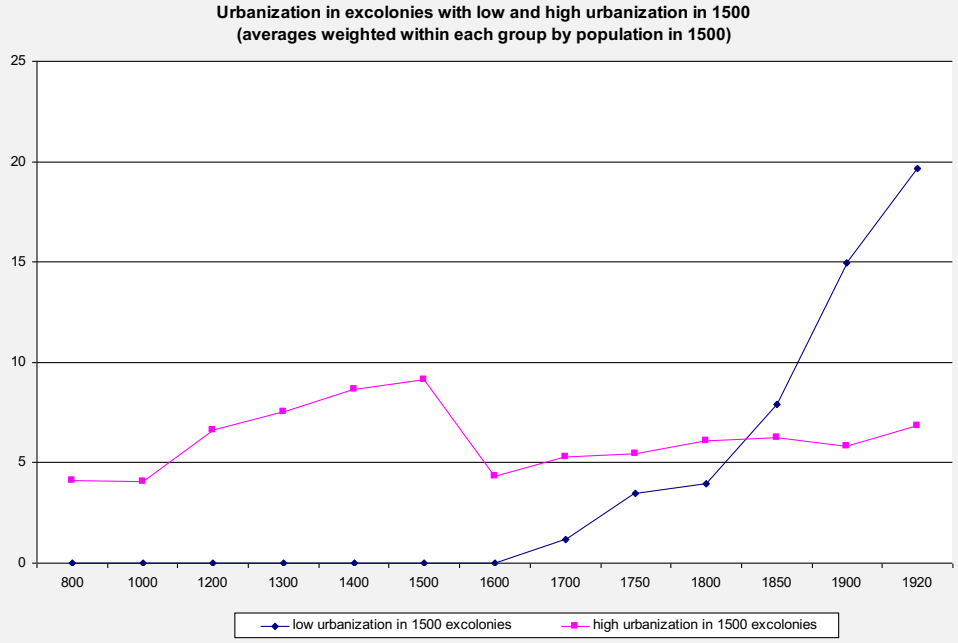
REVERSAL SINCE 1500 (1)



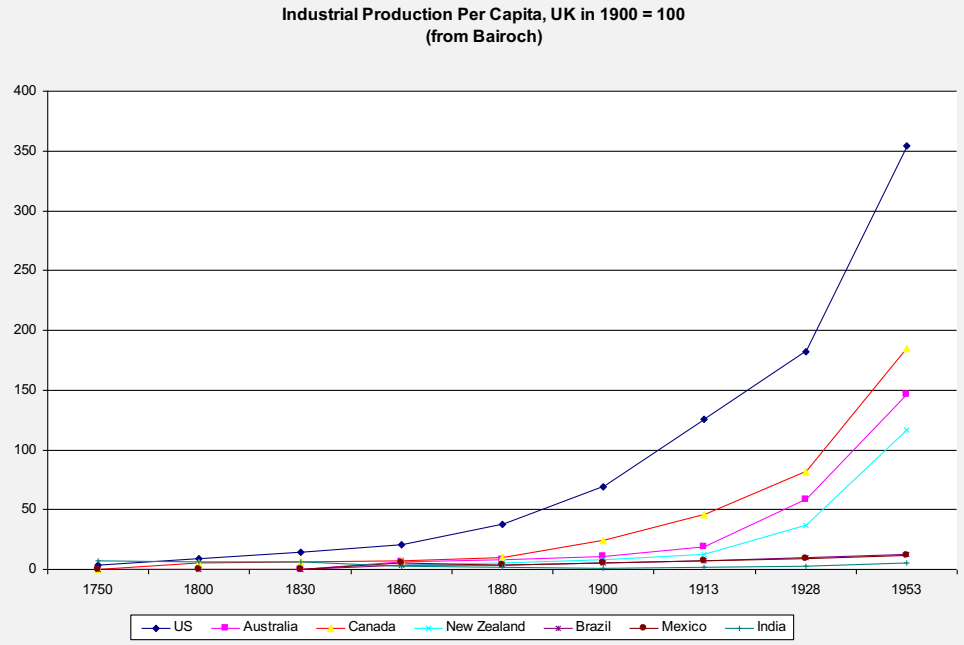
REVERSAL SINCE 1500 (2)



WHEN DID THE REVERSAL HAPPEN?



THE NATURE OF THE REVERSAL: INDUSTRIALIZATION



WHAT'S HAPPENING?

- Former colonies with high urbanization and population density in 1500 have relatively low GDP per capita today, while those with low initial urbanization and population density have generally prospered.
  - But gains in the growing societies not always equally shared. Native Indians and aborigines in the New World have all but disappeared.
- (Simple) Geography hypothesis?
  - It cannot be geographical differences; no change in geography.
- Sophisticated geography hypothesis? Certain geographic characteristics that were good in 1500 are now harmful?
  - no evidence to support this view; reversal related to industrialization, and no empirical link between geography and industrialization.

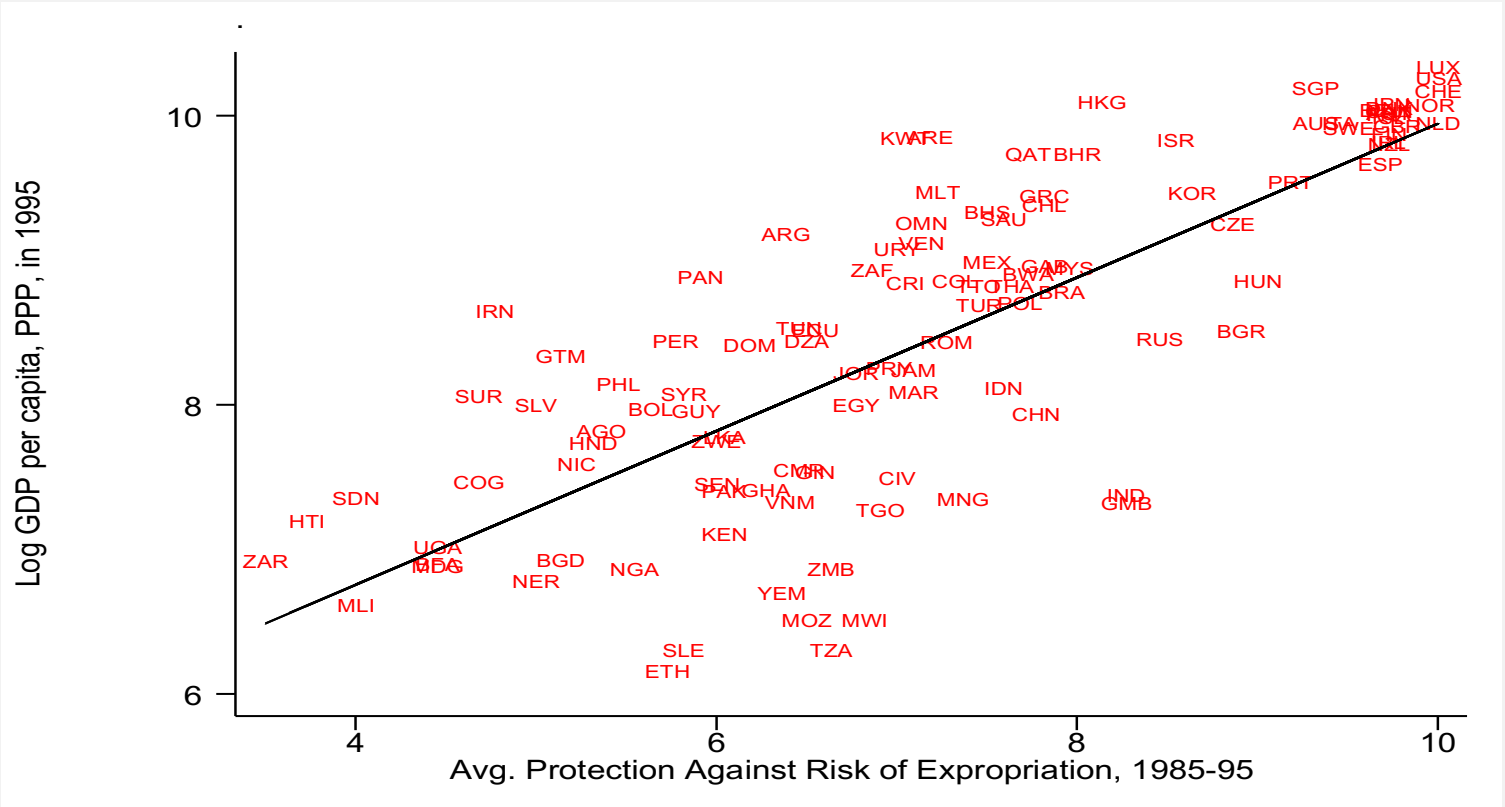
UNDERSTANDING THE PATTERNS FROM 1500 TO 2000

- **Reversal related to changes in institutions/social organizations.**
- Relatively better institutions "emerged" in places that were previously poor and sparsely settled.
  - E.g., compare the United States vs. the Caribbean or Peru.
- Thus an ***Institutional reversal***
  - Richer societies ended up with worse institutions.
  - Europeans introduced relatively good institutions in sparsely-settled and poor places, and introduced or maintained previously-existing bad institutions in densely-settled and rich places.
    - E.g.; slavery in the Caribbean, forced labor in South America, tribute systems in Asia, Africa and South America.
- Institutions have persisted and affected the evolution of income, especially during the era of industrialization
  - why to be discussed more below.

INSTITUTIONS MATTER

- Reversal in prosperity resulting from the institutional reversal, combined with persistence in institutions.
  - Countries with "better" institutions prosper, while those with "bad" institutions stagnate or decline.
  - The reversal also emphasizes that the differences are not only between capitalist and communist systems.
  - What matters more is the "type" of capitalism.
- But then why different institutions?
  - And what are "good" and "bad" institutions?
- Take good institutions to be those that encourage investment in physical, human capital, and in technology, and bad institutions in the opposite

ECONOMIC INSTITUTIONS AND ECONOMIC PERFORMANCE (I)



INSTITUTIONS AND GROWTH: EMPIRICAL STRATEGY

- **Acemoglu-Johnson-Robinson (2001)**
  - Does the risk of expropriation (institutions) partially account for differences in incomes of countries that were colonized by Europeans?
    - The question is interesting because it is argued that these countries had similar per capita GDP 400 years ago, but their wealth varies widely today.
    - OLS regression cannot help answer the question, because even if a positive correlation between per capita GDP and institutional proxies were found the causality cannot be established .

EMPIRICAL STRATEGY

- OLS is problematic when one or more explanators in a regression are contemporaneously correlated with the regression's disturbances
- This correlation may exist because of an omitted explanator, a miss-measured explanator, an endogenous explanator, or a lagged dependent variable among the explanators.
- Instrumental variables estimation can avoid biases the OLS estimation suffers when explanatory variables are correlated with the error term.
- Finding appropriate instruments is a challenge.

EMPIRICAL STRATEGY

INSTRUMENTAL VARIABLES: BASIC IDEA

Suppose we want to estimate a treatment effect using observational data

The OLS estimator is biased and inconsistent (due to correlation between the regressor and error term) if there is:

- omitted variable bias
- selection bias
- simultaneous causality

If a direct solution (e.g. including the omitted variable) is not available, instrumental variables regression offers an alternative way to obtain a consistent estimator

IV: BASIC IDEA

Consider the following regression model:

$y_i = \beta_0 + \beta_1 X_i + e_i$

Variation in the endogenous regressor X_i has two parts

- the part that is uncorrelated with the error ("good" variation)
- the part that is correlated with the error ("bad" variation)

The basic idea behind instrumental variables regression is to isolate the "good" variation and disregard the "bad" variation

IV: CONDITIONS FOR A VALID INSTRUMENT

The first step is to identify a valid instrument

A variable Z_i is a valid instrument for the endogenous regressor X_i if it satisfies two conditions:

1. Relevance: $\text{corr}(Z_i, X_i) \neq 0$
2. Exogeneity: $\text{corr}(Z_i, e_i) = 0$

IV: TWO-STAGE LEAST SQUARES

The most common IV method is two-stage least squares (2SLS)

Stage 1: Decompose X_i into the component that can be predicted by Z_i and the problematic component

$$X_i = \alpha_0 + \alpha_1 Z_i + \mu_i$$

Stage 2: Use the predicted value of X_i from the first-stage regression to estimate its effect on Y_i

$$y_i = \gamma_0 + \gamma_1 \text{X-hat}_i + \nu_i$$

Note: software packages like Stata perform the two stages in a single regression, producing the correct standard errors

ACEMOGLU, JOHNSON AND ROBINSON, 2001

- Source of variation in the institutions of former colonies is settler mortality:

  - High mortality for European settlers leads to less settlements and to worse institutions.

  -To the extent that institutions persist, this also implies worse institutions in those places today.

ENDOGENEITY OF SETTLEMENTS

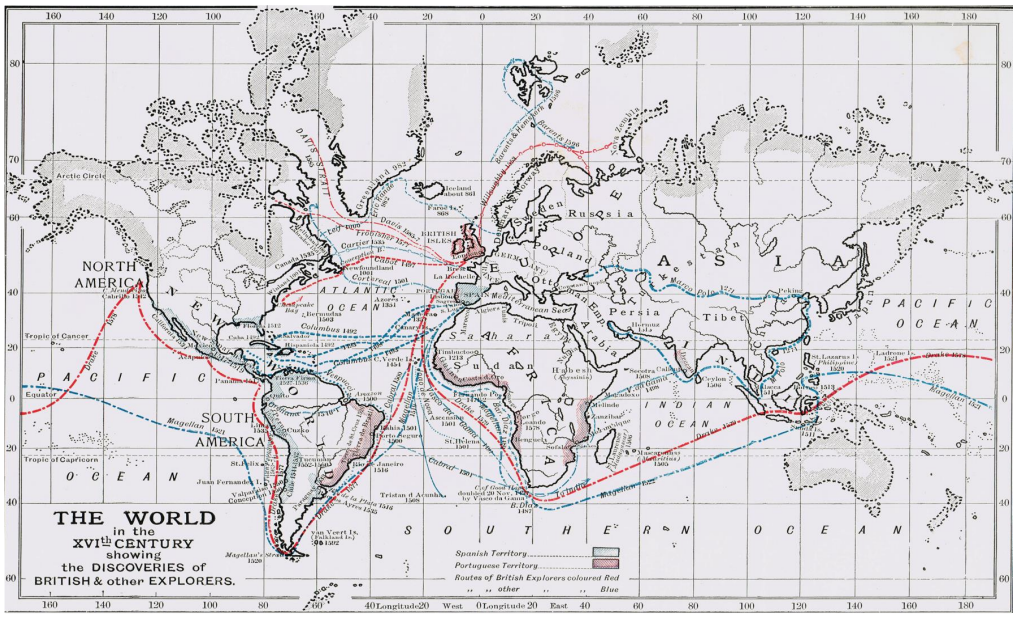
- But European settlements are endogenous:

They may be more likely to settle if a society has greater resources or more potential for growth

Or

- Less settlements when greater resources;
- East India Company and Spanish crown limited settlements

For five hundred years, Europeans tried to establish colonies everywhere, but with varying results…



Map of 16th Century European Exploration

PANAMA CANAL…FATAL FOR FRENCH SETTLERS…

Infectious disease wiped out some attempted European settlements

"Hither Thy Shall Come, and No Further…"

Death waiting in Panama, 1904

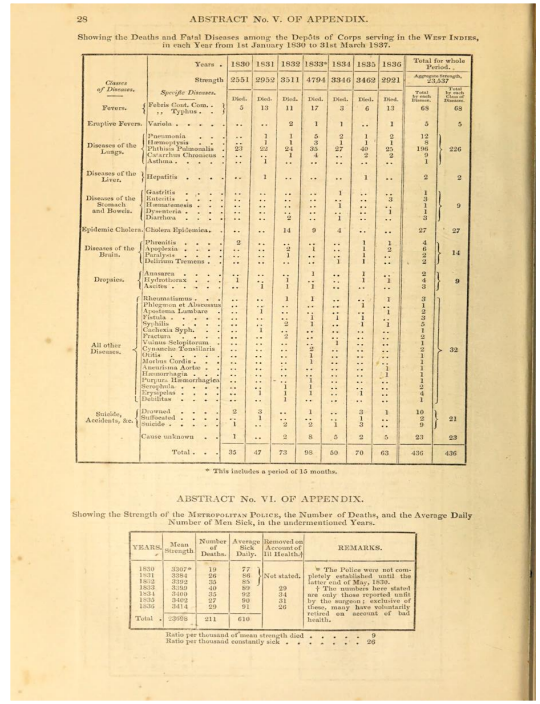
French Panama Canal Laborer Cemetery

Over 400 years, Europeans grasped that disease environments affected their life expectancy

If 1,000 young adult male Europeans migrated in early 1800s, there were three zones of death for them…

- Extremely high
  - West Africa: ~**500** would die in the first year
- High
  - West Indies: **85-130** per annum would die
  - India: **40-70** per annum would die
- Low
  - Northern US/Canada: **15** per annum would die

In Britain/France: 15-20 would die



28 ABSTRACT No. V. OF APPENDIX.

Showing the Deaths and Fatal Diseases among the Depôts of Corps serving in the West Indies, in each Year from 1st January 1830 to 31st March 1837.

Classes of Diseases.	Years	1830	1831	1832	1833*	1834	1835	1836	Total for whole Period. Aggregate Strength, 23,337	
	Strength	2551	2952	3511	4794	3346	3462	2921		
	Specific Diseases.	Died.	Died.	Died.	Died.	Died.	Died.	Died.	Total Deaths by each Disease.	Total Deaths by each Class of Diseases.
Fevers.	Febris Cont. Com.	5	13	11	17	3	6	13	68	68
	,, Typhus.									
Eruptive Fevers.	Variola	..	..	2	1	1	..	1	5	5
Diseases of the Lungs.	Pneumonia	..	1	1	9	2	1	2	12	226
	Hæmoptysis	..	1	1	3	1	1	1	8	
	Phthisis Pulmonalis	23	22	24	35	27	49	25	196	
	Catarrhus Chronicus	..	..	1	4	..	2	2	9	
	Asthma	..	1	..	..	..	..	..	1	
Diseases of the Liver.	Hepatitis	..	1	..	..	..	1	..	2	2
Diseases of the Stomach and Bowels.	Gastritis	..	..	..	..	1	..	..	1	9
	Enteritis	..	..	..	..	..	5	..	5	
	Hæmatemesis	..	..	..	..	1	..	..	1	
	Dysenteria	..	..	..	..	..	..	1	1	
	Diarrhœa	..	..	2	..	1	..	..	3	
Epidemic Cholera.	Cholera Epidemica.	..	..	14	9	4	..	..	27	27
Diseases of the Brain.	Phrenitis	2	..	..	..	..	1	1	4	14
	Apoplexia	..	..	2	..	..	1	2	5	
	Paralysis	..	..	1	..	1	1	..	3	
	Delirium Tremens	..	..	..	..	1	1	..	2	
Dropsies.	Anasarca	..	..	..	1	..	1	..	2	9
	Hydrothorax	1	..	1	..	..	1	1	4	
	Ascites	..	1	1	..	..	..	..	3	
All other Diseases.	Rheumatismus	..	..	1	1	..	..	1	3	32
	Phlegmon et Abscessus	..	..	..	..	..	1	..	1	
	Morbus Lumbaris	..	..	..	..	..	..	1	1	
	Fistula	..	..	..	1	1	..	..	2	
	Syphilis	..	..	2	1	..	1	1	5	
	Cachexia Syph.	..	..	1	..	..	..	..	1	
	Fractura	..	..	2	..	..	..	..	2	
	Vulnus Sclopeticum	..	..	..	1	..	..	..	1	
	Cynanche Tonsillaris	..	..	..	2	..	..	..	2	
	Otitis	..	..	..	1	..	..	..	1	
	Morbus Cordis	..	..	..	..	..	..	1	1	
	Aneurisma Aortæ	..	..	..	..	..	..	1	1	
	Hæmorrhagia	..	..	..	..	..	..	1	1	
	Purpura Hæmorrhagica	..	..	..	..	..	..	1	1	
	Scrophula	..	..	..	1	..	..	1	2	
	Erysipelas	..	1	1	1	..	1	..	4	
	Debilitas	..	..	1	..	..	..	..	1	
Suicide, Accidents, &c.	Drowned	2	3	..	1	..	3	1	10	21
	Suffocated	..	1	..	..	1	..	..	2	
	Suicide	1	..	2	2	1	3	..	9	
	Cause unknown	1	..	2	8	5	2	5	23	23
	Total	35	47	73	98	59	70	63	436	436

* This includes a period of 15 months.

ABSTRACT No. VI. OF APPENDIX.

Showing the Strength of the Metropolitan Police, the Number of Deaths, and the Average Daily Number of Men Sick, in the undermentioned Years.

YEARS.	Mean Strength	Number of Deaths.	Average Sick Daily.	Removed on Account of Ill Health.†	REMARKS.
1830	3367*	19	77	Not stated.	* The Police were not completely established until the latter end of May, 1830.
1831	3384	26	86		† The numbers here stated are only those reported until the Surgeon; exclusive of these, many have voluntarily retired on account of bad health.
1832	3392	35	83		
1833	3399	40	89	39	
1834	3409	35	92	34	
1835	3402	27	90	31	
1836	3414	29	91	26	
Total	23993	211	610		

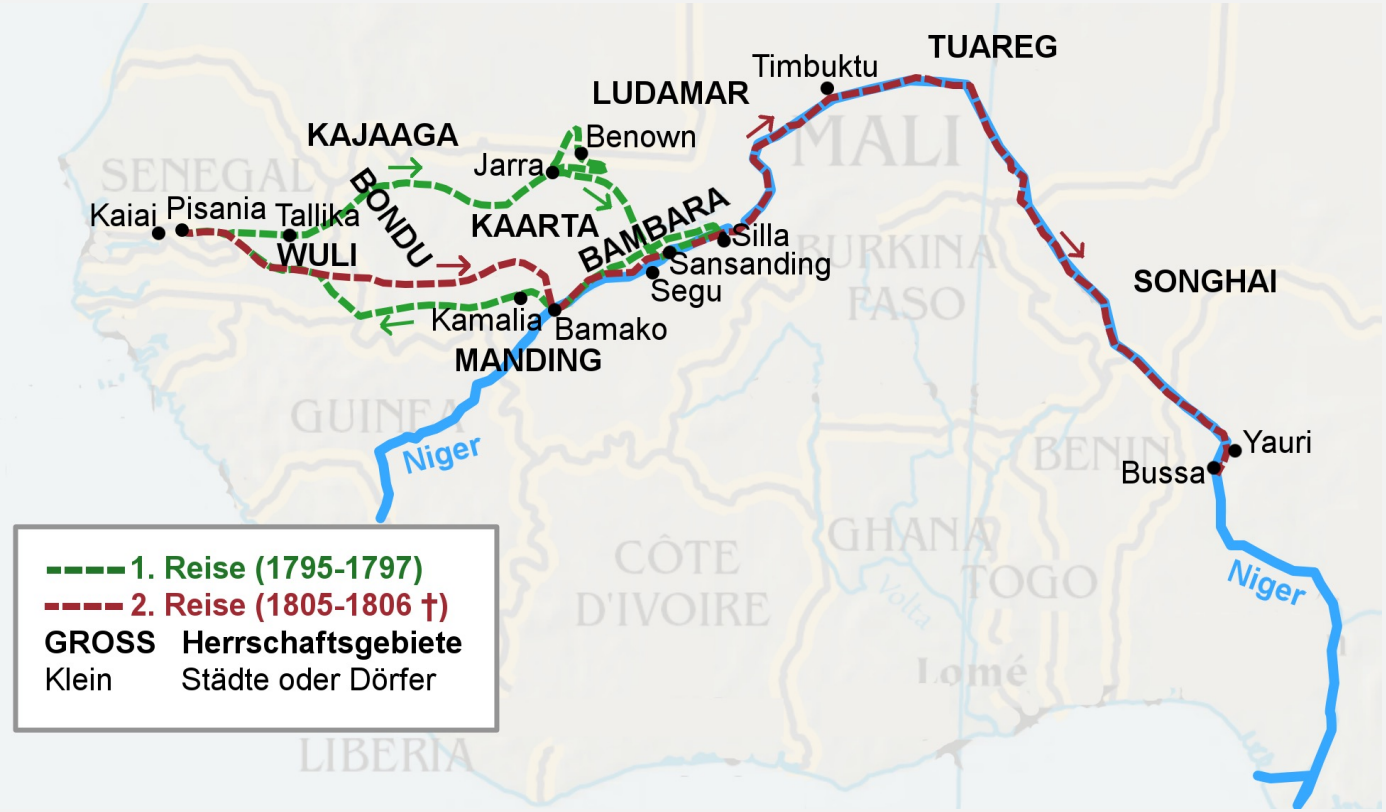
Ratio per thousand of mean strength dead 9
Ratio per thousand constantly sick 26

British troop sickness and mortality statistical report by A.M. Tulloch, H. Marshall, and T.G. Balfour of the Army Medical Department and War Office returns, 1839

POTENTIAL IMPACT OF EUROPEAN MORTALITY → SETTLEMENTS

- Curtin (1964): Plans for settlements in West Africa were ruined by very high mortality among early settlers.
- in Bulama (April 1792-April 1793) there was 61% mortality among Europeans in the first year
- In Sierra Leone Company (1792-1793), 72% of the European settlers died in the first year
- On Mungo Park' s Second Expedition (May-November 1805), 87% of Europeans died during the trip from Gambia to the Niger, and all the Europeans died before completing the expedition
- Crosby (1986): An example of the awareness of the disease environment - the Pilgrim fathers decided to migrate to the U.S. rather than Guyana because of the high mortality rates in Guyana
- Beauchamp Committee in 1795 – decision to send convicts to Australia, rather than the Lemane island on Gambia River because the risk of dying was too high even for convicts

MUNGO PARK'S EXPEDITION



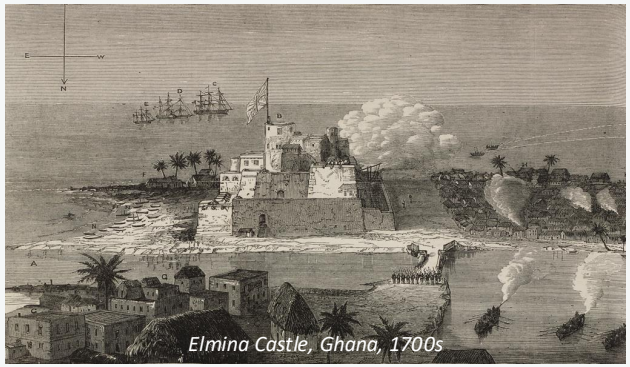
Disease environments influenced European colonial strategies

Three settler mortality groups in the data: Extreme, High, and Low

Extreme (7+ times Europe):
In West Africa, Europeans generated huge profits with the slave trade and tried to minimize time on land

High (2-4 times Europe):
In India and the West Indies, Europeans tried to make as much money as possible before soon returning to England

Low (similar to Europe):
Attracted European settlers to the United States, Canada, Australia, and New Zealand


Elmina Castle, Ghana, 1700s


State House, Boston, 1801

ACEMOGLU-JOHNSON-ROBINSON'S CLAIM (IN ONE SLIDE!)

THEORY: COLONIZATION AND SETTLEMENTS

- those with political power are more likely to opt for good institutions when they will benefit from property rights and investment opportunities
- Better institutions arise when there are constraints on elites

- *The colonial context:*
- Europeans more likely to benefit from good institutions when they are a significant fraction of the population, i.e., when they settle

- Lower strata of Europeans place constraints on elites when there are significant settlements. Thus: European settlements → better institutions

ENDOGENEITY OF SETTLEMENTS

- But European settlements are endogenous:

They may be more likely to settle if a society has greater resources or more potential for growth

Or

- Less settlements when greater resources;
- East India Company and Spanish crown limited settlements

THE COLONIAL EXPERIENCE

- Look for exogenous variation in European settlements: the disease environment

- In some colonies, Europeans faced very high death rates because of diseases for which they had no immunity, in particular malaria and yellow fever
- …here they chose not to settle

- Did not set up good institutions
- Moreover, institutions persist…

- **potential mortality of European settlers → settlements →**

☐ **past institutions → current institutions**

EXTRACTIVE INSTITUTIONS

- *where Europeans did not settle:*
- set up authoritarian and absolutist states with the purpose of maintaining control and facilitating the extraction of resources from colonies
- the slave trade in Africa; gold extraction in America; King Leopold of Belgium in Congo:
- philosophy was that "the colonies should be exploited, not by the operation of a market economy, but by state intervention and compulsory cultivation of cash crops to be sold to and distributed by the state at controlled prices"
- few constraints on state power in the non-settler colonies
- EXTRACTIVE INSTITUTIONS

INCLUSIVE INSTITUTIONS

- *where Europeans settled in large numbers:*

life was modeled after the home country

- settler colonies had representative institutions which promoted freedom and the ability to get rich by engaging in trade

- property rights and constraints on state power in the settler colonies

- INCLUSIVE INSTITUTIONS (Resource building)

INSTITUTIONAL PERSISTENCE

- *INCLUSIVE institutions:*
- law and order and private property established during the early phases of colonialism in Australia, Canada, New Zealand, the U.S., Hong Kong, and Singapore formed the basis of the current day institutions

- *EXTRACTIVE institutions:*
- forced labor policies in Latin America persisted and were even intensified or reintroduced with the expansion of export agriculture in the latter part of the 19th century

EMPIRICAL STRATEGY: TWO STAGE LEAST SQUARES (2SLS)

- Second stage: log income per capita = f(current economic institutions)

- First stage: current economic institutions = g(settler mortality)

- Data on potential European settler mortality
- Work by the historian Philip Curtin provides AJR with mortality rates of soldiers stationed in the colonies in the early 19th century
- Supplemented by data on mortality of Catholic bishops in Latin America
- Current economic institutions proxied by protection against expropriation risk

- Useful to bear in mind that history generates variation in a cluster of broad institutions;
- Protection against expropriation risk proxying for many other sources of institutional variation

A. EMPIRICAL STRATEGY

- AJR 2001

$$\log GDPpc_i = b_0 + b_1 R_i + b_2 X_i + e_i \quad (1)$$

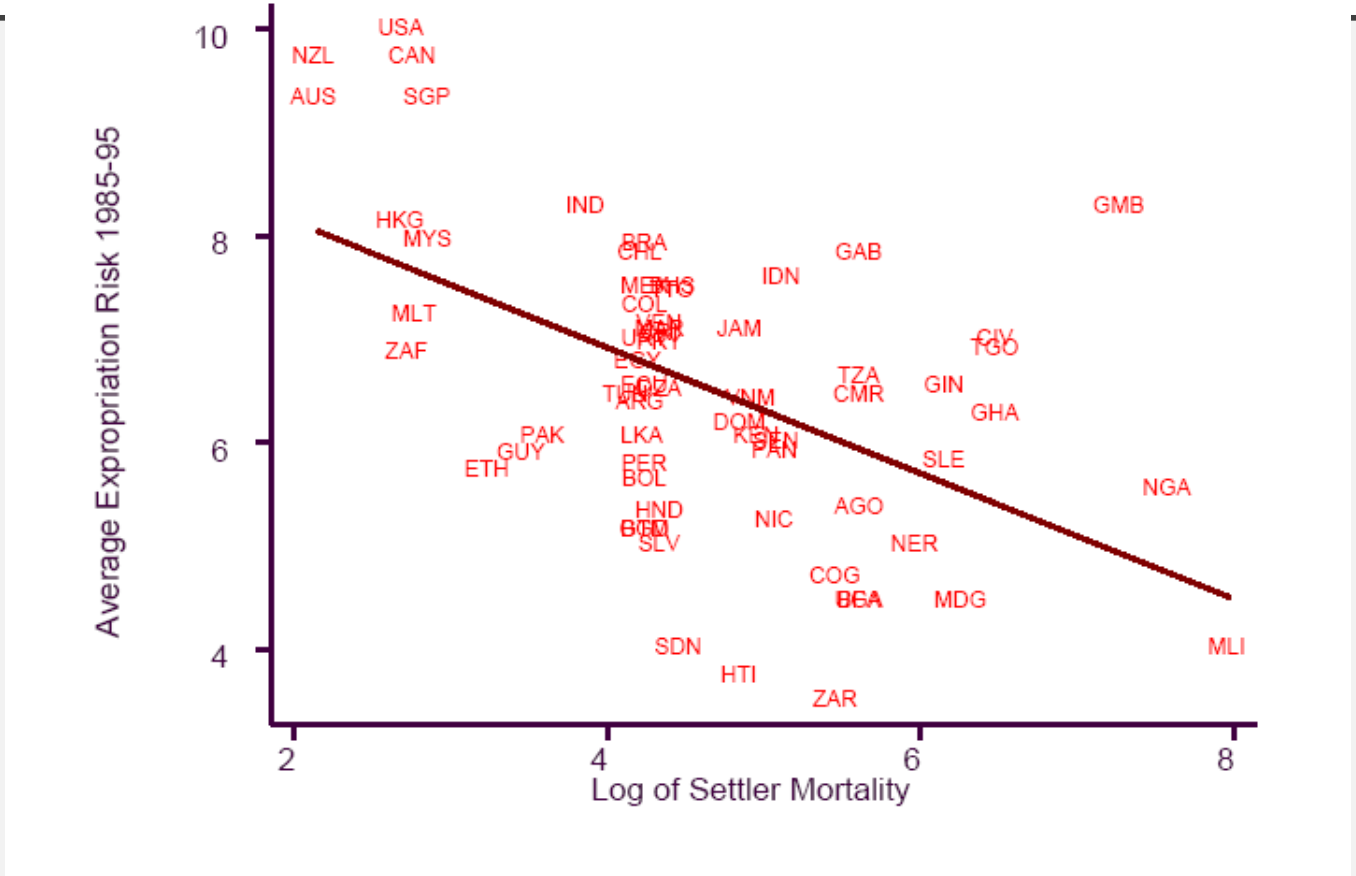
R_i is the protection against expropriation measure taken from International Country Risk Guide.

X_i is a vector of covariates (latitude, continent dummies, legal origin dummies, temperature, humidity, soil quality, natural resources, landlocked dummy).

$$R_i = a_0 + a_1 \log M_i + a_2 X_i + s_i \quad (2)$$

M_i is settler mortality

Settler Mortality and Institutions Today



THE REDUCED FORM: SETTLER MORTALITY AND INCOME PER CAPITA TODAY

THE FIRST STAGE

First Stage Regressions:
Dependent variable is protection against risk of expropriation

	All former colonies	All former colonies	All former colonies	Without neo-Europes
Settler Mortality	-0.61	-0.5	-0.43	-0.37
	(0.13)	(0.15)	(0.19)	(0.14)
Latitude		2.34		
		(1.37)		
Continent Dummies (p-value)			[0.25]	
R-Squared	0.26	0.29	0.31	0.11
Number of Observations	63	63	63	59

Standard errors in parentheses
Sample limited to countries for which have GDP per capita data

THE CAUSAL EFFECT OF INSTITUTIONS: BASIC 2SLS ESTIMATES

Second Stage Regressions:
Dependent variable is log GDP per capita in 1995

	All former colonies	All former colonies	All former colonies	Without neo-Europes
Protection Against Risk of Expropriation, 1985-95	0.99 (0.17)	1.11 (0.26)	1.19 (0.39)	1.43 (0.45)
Latitude		-1.61 (1.57)		
Continent Dummies (p-value)			[0.09]	
Number of Observations	63	63	63	59

THE CAUSAL EFFECT OF INSTITUTIONS: ROBUSTNESS

Second Stage Regressions: all former colonies
Dependent variable is log GDP per capita in 1995
Instrument is:

	Log Settler Mortality	Log Settler Mortality	Log Settler Mortality	Log Settler Mortality	Yellow Fever
Protection Against Risk of Expropriation, 1985-95	1.07 (0.27)	0.98 (0.17)	0.87 (0.32)	1.18 (0.84)	0.82 (0.22)
Temperature (p-value)	[0.71]				
Humidity (p-value)		[0.64]			
Malaria			-0.28 (0.59)		
Life Expectancy				-0.014 (0.07)	
Number of Observations	63	63	62	62	63

IS THE EMPIRICAL APPROACH VALID?

- No reverse causality, mortality rates refer to two centuries ago
- Is the exclusion restriction of the 2SLS valid?

  _Conditional on the controls included in the regression, the mortality rates of European settlers more than hundred years ago had no affect on pcGDP other than their effect through institutional development…
- Plausible. Yellow fever, malaria and gastrointestinal diseases affecting Europeans had much less effect on native inhabitants, who had genetic and acquired immunity
- If kids survive, they get immunity
- Mortality rates of local troops - very similar in different regions despite very large differences in European mortality rates otherwise, a direct effect on human capital and incomes
- AJR show that climate is not collinear with disease environment

ROBUSTNESS CHECKS

- Results highly robust: robust to controlling for:
  - continent dummies
  - latitude, landlocked, temperature, humidity
  - current prevalence of malaria and life expectancy
  - legal origin, colonial origin
  - Direct effect of the presence of Europeans

- Robust when exploiting only yellow fever
- No evidence of any effect of geography or religion on long run growth
- Note not estimating the causal effect of being colonized vs. not colonized (!!!)

BASIC RESULTS (AJR, 2001) AND BEYOND…

- Very large causal effects of institutions on long-run growth
- **Differences in institutions account for over ¾ of the variation in income per capita today (long-run effect)**
- The estimate implies the 2.24 differences in expropriation risk between Nigeria and Chile translates into 7 fold difference in income…In practice, Chile is over 11 times as rich as Nigeria
- **Additional Results: Countries with worse institutions because of historical reasons suffer (AJR, follow-up papers…)**
  - **More volatile output growth.**
  - **Bigger crises.**
  - **Lower growth.**

THE ROLE OF GEOGRAPHY?

- No causal effect of geography
- How do we think of the correlation between geography (e.g., latitude) and income?
- This is caused by omitted factors;
- Geography correlated with institutions because of the natural experiment of European colonialism
- Tropical areas ended up with worse institutions, because they tended to be richer and more densely-populated around 1500
- they attracted fewer European settlers

THE ROLE OF CULTURE AND RELIGION

- What is the effect of culture?
- AJR argue that evidence not favorable for importance of culture.
- Proxy for culture with religion
- No evidence of any effect of religion (therefore culture) on cross-country differences in income
- Identity of the colonizer (British, non-British colonial origin) has no independent effect and does not seem to affect the estimated coefficient
- • What seems to matter is INSTITUTIONS!

ARE BRITISH COLONIES SPECIAL?

- Popular view going back to Adam Smith and Winston Churchill that British cultural and political influence was beneficial, certainly better than that of Spanish and French influence.
- Does the evidence support this view?

- The answer is **no**.
  - The patterns shown above are robust to controlling for the identity of colonial power.
  - Similar patterns when we look at only British colonies.

GROWTH UNDER INCLUSIVE INSTITUTIONS

- Inclusive economic and political institutions (or inclusive institutions for short) create powerful forces towards economic growth by:

  - encouraging investment (because of well-enforced property rights)

  - harnessing the power of markets (better allocation of resources, entry of more efficient forms, ability to finance for starting businesses etc.)

- generating broad-based participation (education, again free entry, and broad-based property rights).

- Key aspect of growth under inclusive institutions: investment in new technology and creative destruction.

- Central question: why are extractive institutions so prevalent throughout history and even today?

GROWTH UNDER INCLUSIVE INSTITUTIONS

- Main thesis is that growth is much more likely under inclusive institutions than extractive institutions.
- Growth, and inclusive institutions that will support it, will create both winners and losers. Thus there is a logic supporting extractive institutions and stagnation:
  - **economic losers**: those who will lose their incomes, for example their monopolies, because of changes in institutions or introduction of new technologies
  - **political losers:** those who will lose their politically privileged position, their unconstrained monopoly of power, because of growth and its supporting institutions **fear of creative destruction.**
- both are important in practice, but **particularly political losers are a major barrier against the emergence of inclusive institutions and economic growth.**

GROWTH UNDER EXTRACTIVE INSTITUTIONS

- Though growth is much more likely under inclusive institutions, it is still possible under extractive institutions.
- Why? → Generate output and resources to extract.
- Two types of growth under extractive political institutions:

  1. extractive economic institutions allocating resources to high productivity activities controlled by the elites (e.g., Barbados, Soviet Union)

  2. when relatively secure in their position, the elites may wish to allow the emergence of relatively inclusive economic institutions under their control (e.g., South Korea under General Park, China today).

- But big difference from growth under inclusive institutions: **no creative destruction** → economic dynamics very different. Consequently, even though growth is possible under extractive institutions, this will not be **sustained growth**.

WHY NATIONS FAIL TODAY? (ACEMOGLU-ROBINSON, 2012)…

- The presence of **Extractive Institutions**. An elite designs economic institutions in order to enrich themselves and perpetuate their power.

- Zimbabwe: elite was Robert Mugabe and core of ZANU-PF (spearhead anti-colonial struggle)
- North Korea: clique around Kim Jong-Il and the Communist Party.
- Uzbekistan: President Islam Karimov and his family plus his reinvented Soviet era cronies
- Colombia (democratic): elites control both the Liberal and Conservative Parties.
- Russia?....

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Friday, 28 January, 2000, 10:55 GMT

Mugabe hits the jackpot

Mugabe: "Name drawn from thousands of customers"

Zimbabwean President Robert Mugabe has won the top prize in a lottery organised by a partly state-owned bank.

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MUGABE JACKPOT (CONTD.)

- Zimbabwean President Robert Mugabe has won the top prize in a lottery organised by a partly state-owned bank.

  The president, who last year awarded himself and his cabinet salary hikes of up to 200%, hit the 100,000 Zimbabwe dollars (about $2,600) jackpot in a promotional draw organised by the Zimbabwe Banking Corporation (Zimbank).

  "Master of Ceremonies Fallot Chawawa could hardly believe his eyes when the ticket drawn for the Z$100,000 prize was handed to him and he saw His Excellency RG Mugabe written on it," the bank said in a statement.

LABOR COERCION IN UZBEKISTAN

- On September 6 2006, schools in Uzbekistan were emptied of 2.7 million children. A mother of two explains:

  "At the beginning of each school year, approximately at the beginning of September, the classes in school are suspended, and instead of classes children are sent to the cotton harvest. Nobody asks for the consent of parents. They don't have weekend holidays [during the harvesting season]. If a child is for any reason left at home, his teacher or class curator comes over and denounces the parents. They assign a plan to each child, from 20 to 60 kg per day depending on the child's age."

- Why? Uzbekistan was under the corrupt regime of Ismail Karimov (overthrown by his PM in 2016).
- Cotton farmers are forced to sell at very low prices. Lack of incentives and running down of machinery. Use of forced labor as a substitute for incentives for farmers

CRITICISMS OF AJR (2001)

- Some issues with data (Albouy 2012)
- The data show that history matters. Less clear is evidence that institutions matter.
- Identification problems: Did colonizers, when they settled, bring with them institutions or themselves and their human capital?

WHY NATIONS FAIL TODAY? (ACEMOGLU-ROBINSON, 2012)…

- The roots of modern world inequality lie in the emergence of inclusive institutions in Britain → resulted in the industrial revolution → spread to t parts of the world that had similar institutions (settler colonies) or quickly developed them (Western Europe).

- Other parts of the world languished with extractive institutions which have persisted over time and thus remain poor today.
- **Institutions persist:** For e.g., an elite designs extractive economic institutions in order to enrich themselves and perpetuate their power. However, why would elite change such institutions?
- These are difficult to change though they can be successfully challenged and altered during *critical junctures*.

CAVEATS/CRITICISMS
"WHY NATIONS FAIL" (ACEMOGLU & ROBINSON, 2012):

- Countries with Inclusive political institutions have presided over pretty "extractive" methods abroad or against minorities at home. [e.g. sugar consumption in Europe with slave labor in the Caribbean; textiles in Manchester using cotton from American South; nuclear power using uranium mined in Namibia/Niger…] and Sachs (2012) review of A-R in *Foreign Affairs*.

- Geography matters: Agricultural productivity went up and gave rise to complex societies and government. Western Europe has over a thousand years experience with governance, unlike African states. (Jared Diamond's review of the book)

- Shleifer and coauthors (2012). *Look for differences within countries*. Find that Human Capital explains a large share of regional income variation both between and within countries. Institutions are not statistically significant

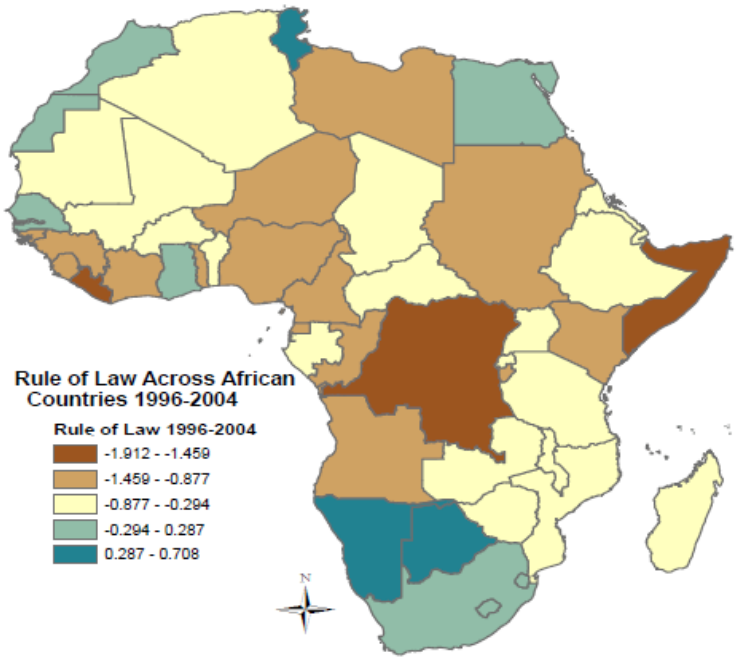
INSTITUTIONS AND CULTURE

- Are institutions exogenous? Or are they influenced by the underlying culture??

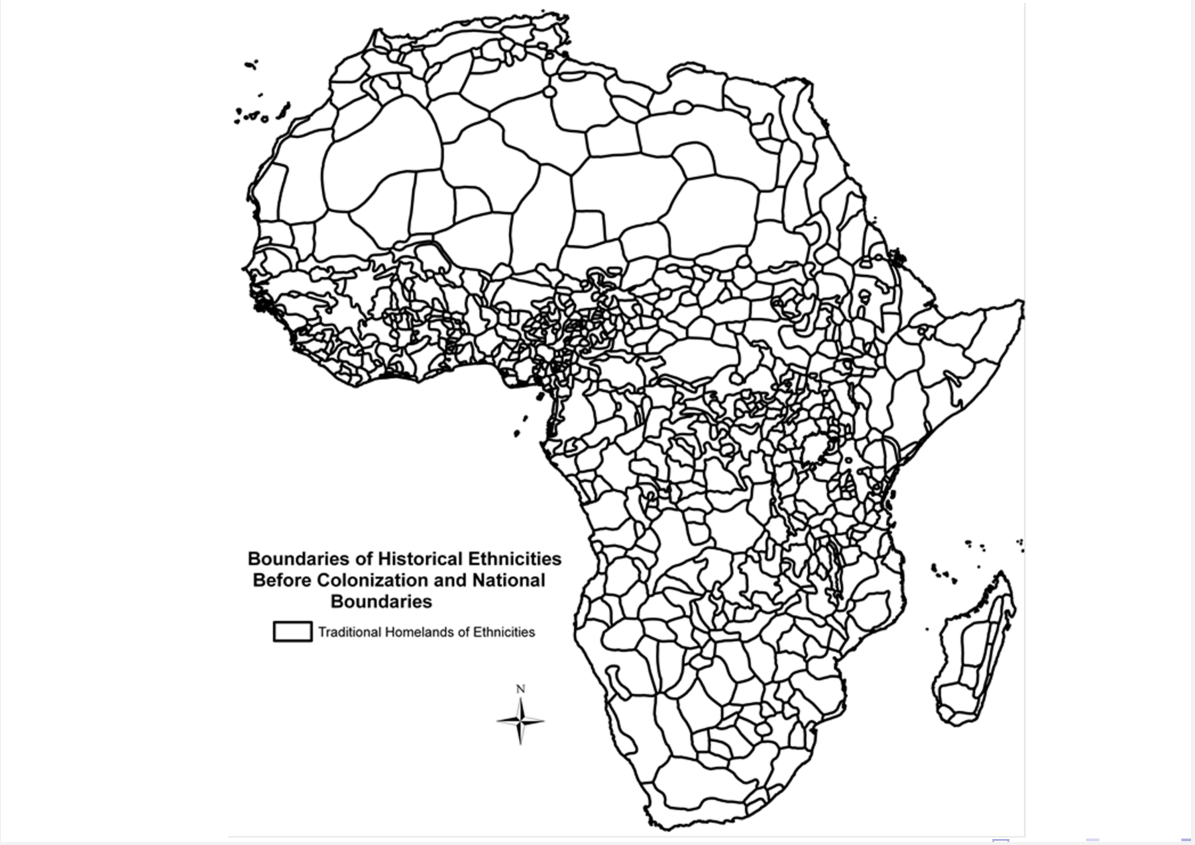
- Ethnic heterogeneity and polarization reduce institutional quality. (Easterly and Levine, 1997)

INSTITUTIONS & CULTURE?
(MICHALAPOULOUS AND PAPAIOANNOU, 2012)

Contemporary National Institutions across Africa



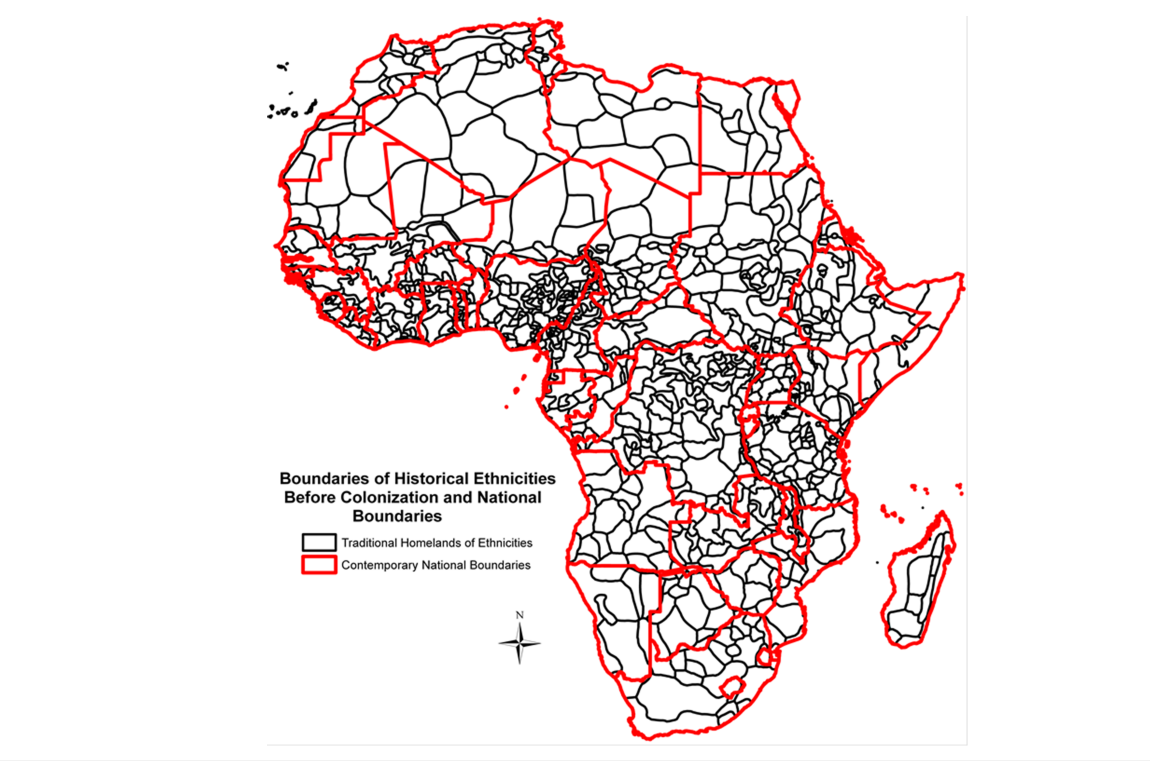
ETHNIC HOMELANDS BEFORE COLONISATION (MURDOCH, 1959)



INSTITUTIONS AND CULTURE

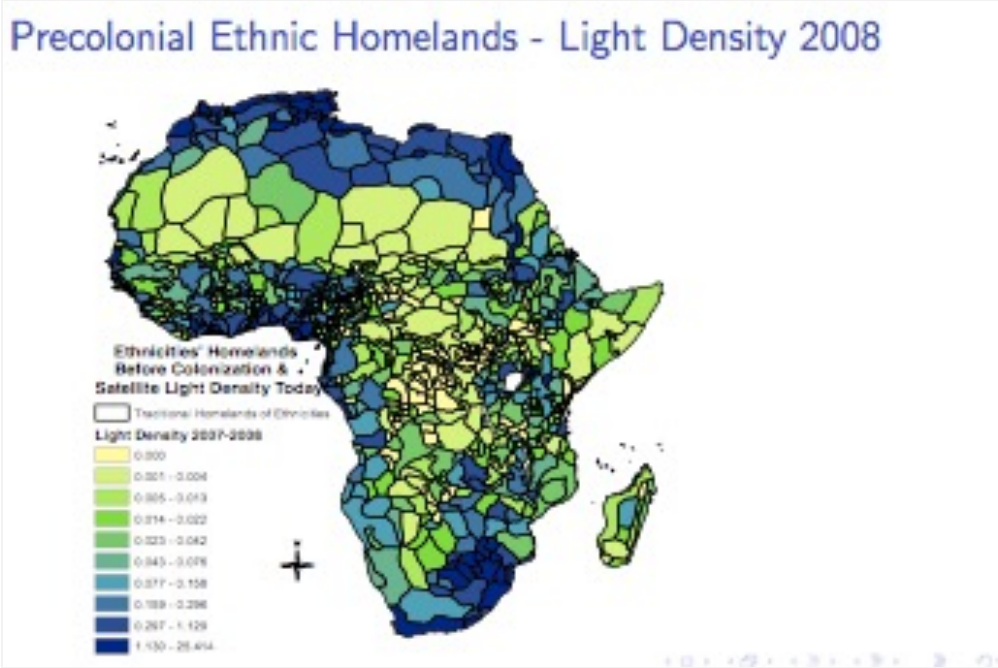
BERLIN CONFERENCE (1884-5) PARTITIONED AFRICA AMONGST COLONIZERS

CURRENT NATIONAL BOUNDARIES AND ETHNIC HOMELANDS



INSTITUTIONS AND CULTURE (MICHALAPOULOUS AND PAPPAIOANNU, 2012)

Africa from Above in 2000



- What are the Determinants of Regional Development within Africa?

1. Do contemporaneous nationwide institutions affect regional economic performance across African states?

2. Do pre-colonial local institutional/cultural arrangements **(culture)** affect contemporary regional economic performance within African states?

THE NATURAL EXPERIMENT: PARTITIONING

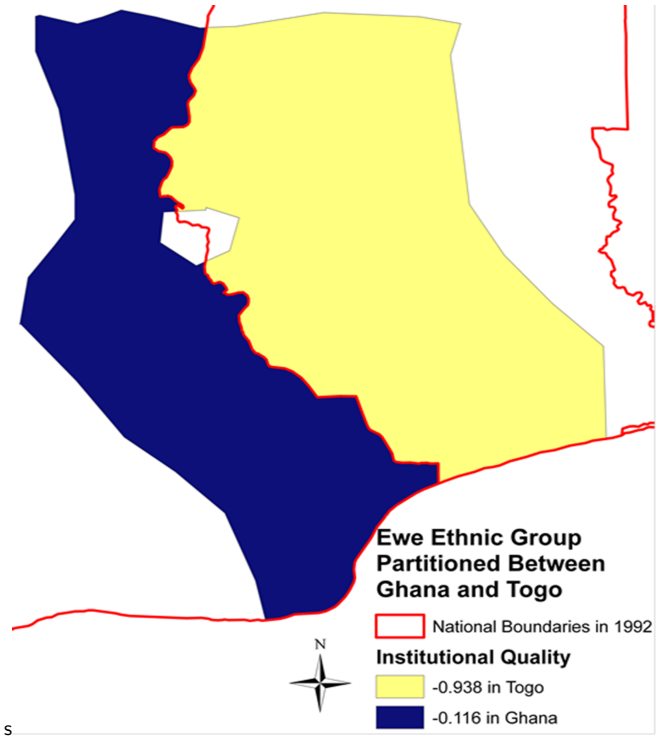
- 1. Partitioning => identical cultures subjected to different countrywide arrangements.
- I. Documenting Partitioned:

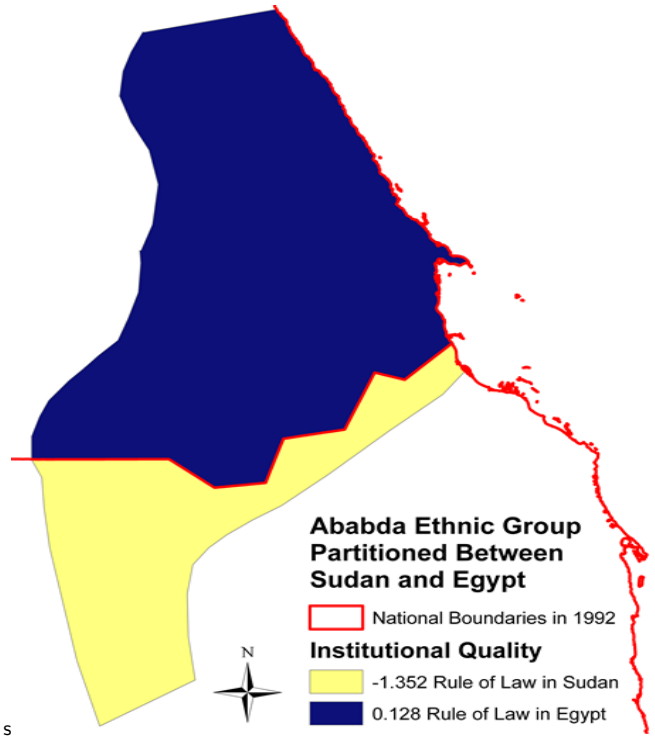
- 2 countries: Anyi (Ghana (58%) and the Ivory Coast (42%);
- 3 countries: Chewa (Mozambique (50%), Malawi (34%), and Zimbabwe (16%))

- M. & P. (2012) Use partitioned ethnic groups to exploit **within-ethnicity across-country** variation in institutional performance

PARTITIONED ETHNICITIES

Examples. Ewe and Ababda





SUMMARY OF M & P (2012):

- Ethnic institutional structures persisted during colonization

  Limited presence of Europeans in the mainland.

  Europeans did not try to destroy local ethnic structures

- *Significant positive effect of precolonial local culture and institutions on regional development within countries and accounting for geography at a very fine level.*

- Ethnic culture/institutions endured after independence:

1. Weak African states with limited penetration of national institutions (poor infrastructure)
2. New African leaders focused on consolidating their power in the capital city and other urban areas.
3. New governments reinforced local structures appointing local chiefs as district administrators.

HUMAN DEVELOPMENT: PRINCELY STATES VS BRITISH INDIA (IYER, 2010)

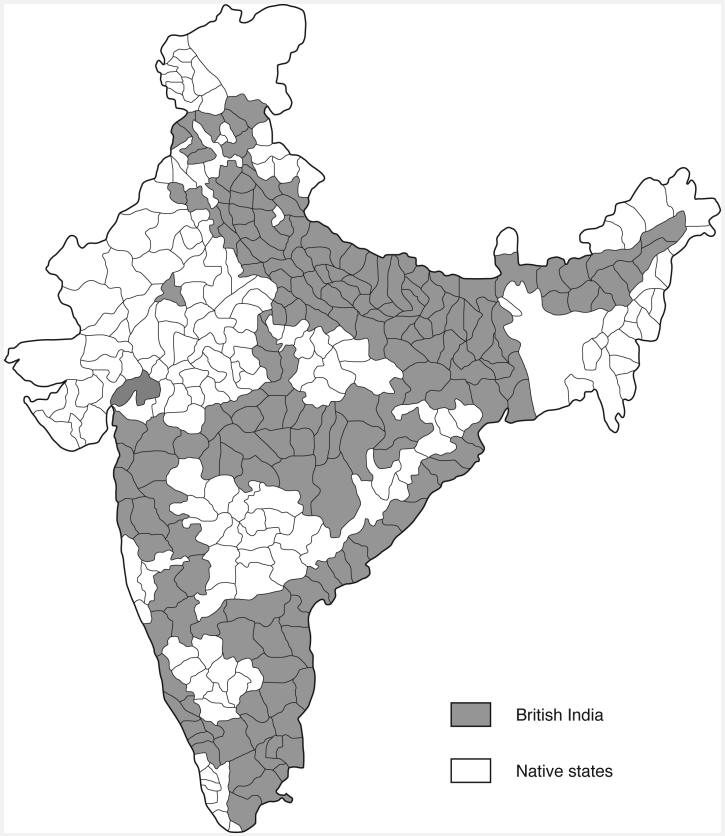
- About 23% of India's population was not under direct British colonial rule.
- They were ruled by Indian kings who had autonomy over internal matters. Defense and foreign policy was controlled by the British.
- The British also retained the right to depose these rulers for "gross misrule."

WHICH AREAS DID THE BRITISH ANNEX?

Note that British tended to annex more fertile areas with better soil.

Despite this, we do not find better human development outcomes in these areas.

How about districts which became part of British India purely through accident? E.g. through Lord Dalhousie's infamous "Doctrine of Lapse", where native states were annexed if the ruler died without an heir.



BRITISH INDIA VS NATIVE STATES

	British India	Native States
1991 fraction of villages having		
Primary school	0.78	0.82
High school	0.12	0.18
Any health facility	0.43	0.32
	Lapse happened	**Lapse did not happen**
1991 fraction of villages having		
Primary school	0.81	0.81
High school	0.09	0.16
Any health facility	0.24	0.37
1961 fraction of villages having		
Primary school	0.39	0.46
Dispensary	0.02	0.08
1911 literacy rates (%)	2.8	5.8

A BETTER COMPARISON OF BRITISH INDIA AND THE NATIVE STATES

- We compared districts where "lapse" happened with districts where "lapse" did not happen: the former are much more likely to have been annexed by the British, *and have much worse access to health and education facilities today.*

- Note that a key difference was that native state rulers had strong incentives to avoid "gross misrule", while British administrators did not.

- These differences are narrowing over time i.e. current policies are helping to erase the impact of history.