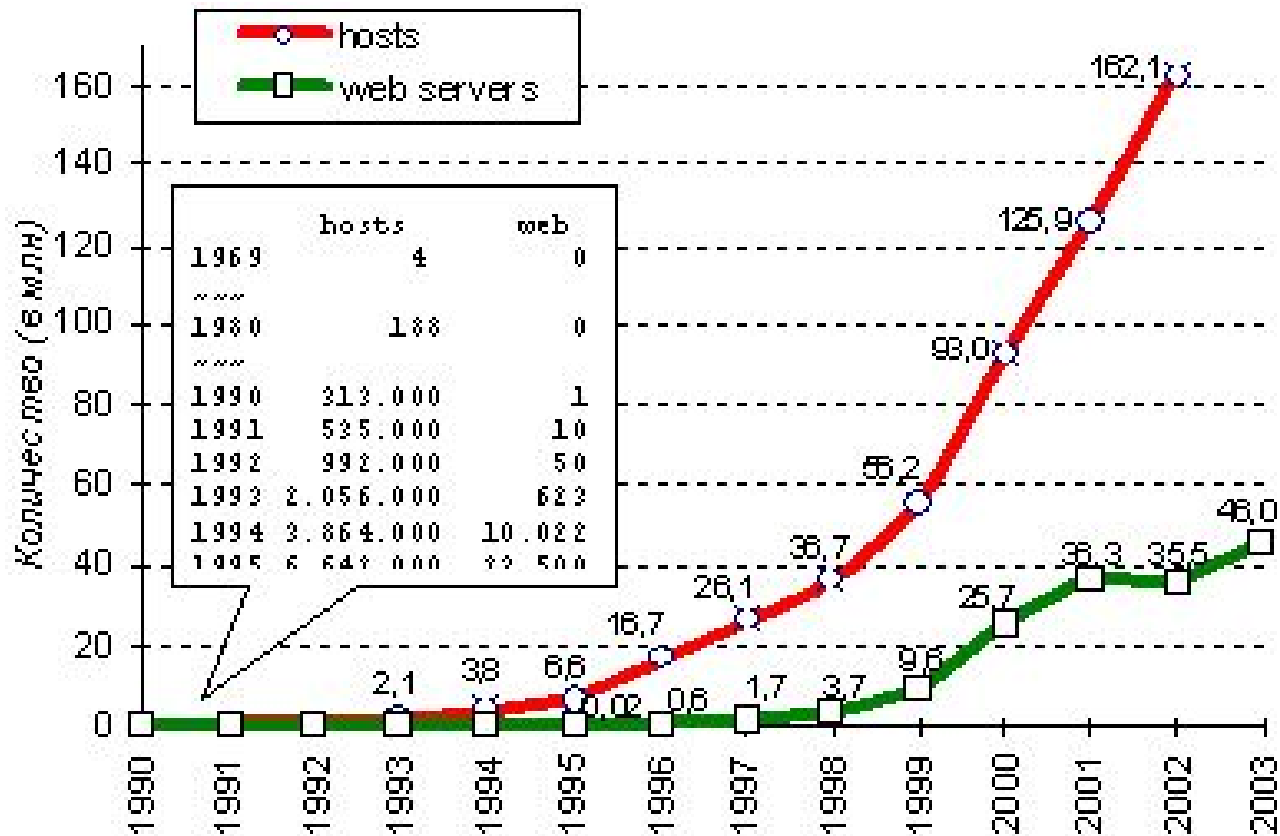


Institutions and Economic Growth

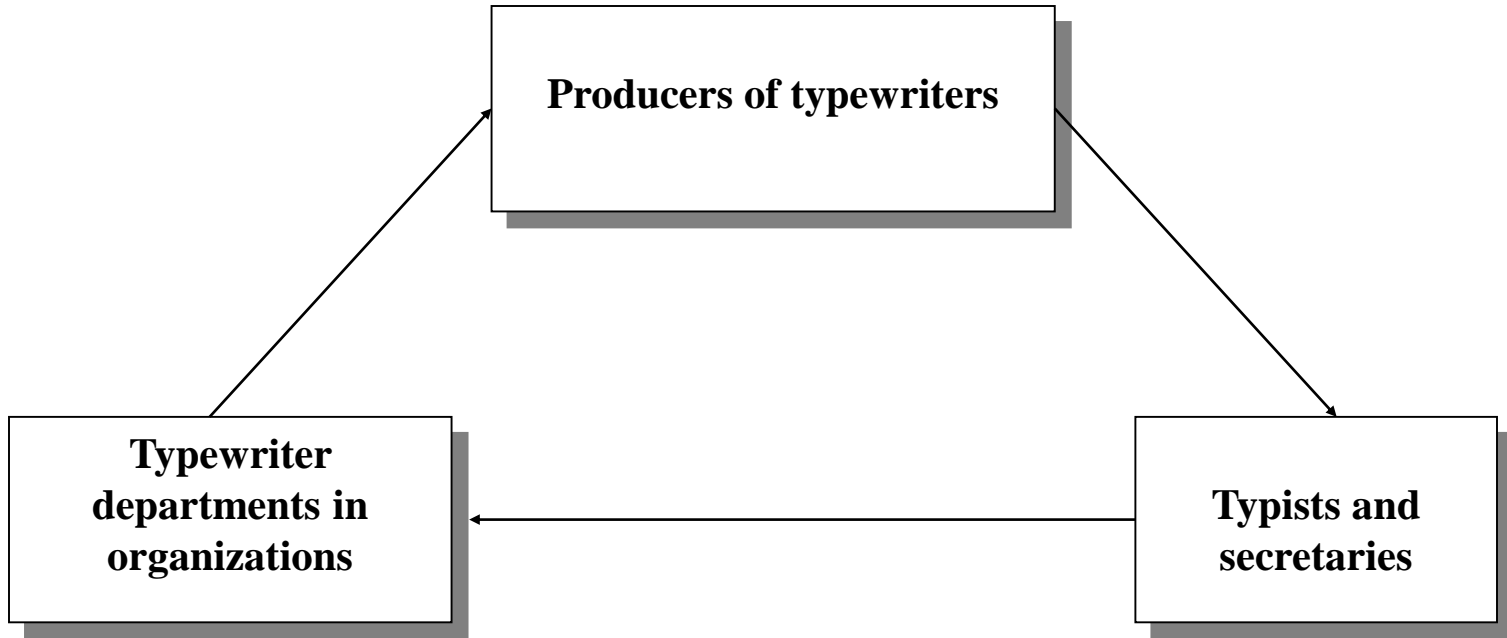
November 27 2018

Email users



Economics of QWERTY





Positive feedback at the market for typewriters

Nuclear reactors

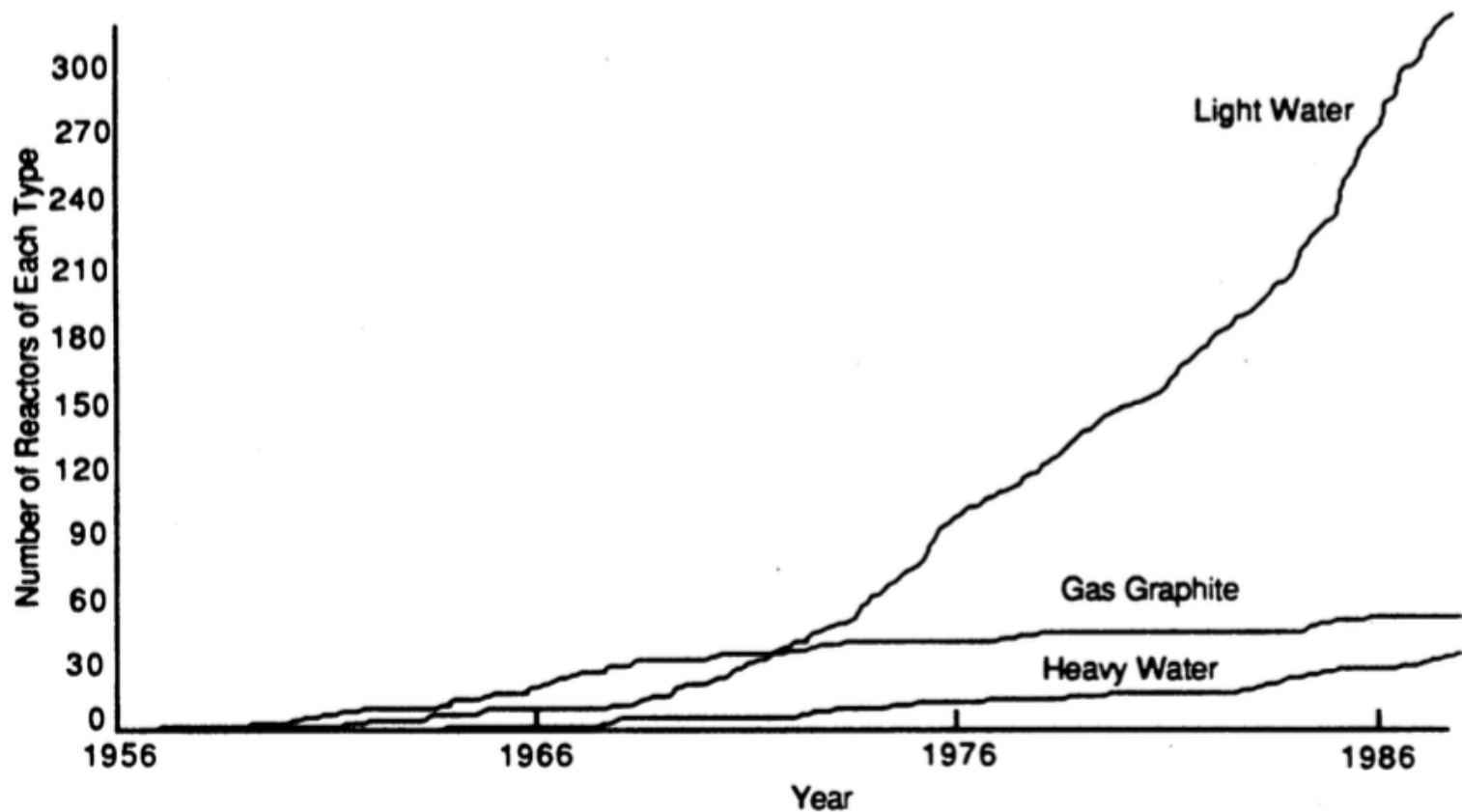


FIGURE 1B

NUMBER OF REACTORS BY TYPE

Source: International Atomic Energy Agency, *Nuclear Power Reactors in the World* (Vienna, 1987).

Robin Cowan (1990), "Nuclear Power Reactors: A Study in Technological Lock-in," *Journal of Economic History*, vol. 50, pp. 541-67.

Table 1. Principal Railway Track Gauges, 2000

<u>Gauge</u>			<u>Proportion of world total¹</u>
<u>English (ft.-in.)</u>	<u>Metric (mm.)</u>	<u>Major countries and regions</u>	<u>(percent)</u>
2'6"	762	China* ² , India*	1.7
3'0"	914	Colombia, Guatemala, Ireland*	0.6
3'3.37"	1000	East Africa, Southeast Asia*, Argentina*, Brazil*, Chile*, India*, Pakistan*, Spain*, Switzerland*	8.8
3'6"	1067	Southern Africa, Southeast Asia*, North Africa & Middle East* ³ , Australia*, Japan*, New Zealand, Newfoundland	9.0
4'8.5"	1435	Europe*, North America, North Africa & Middle East*, Argentina*, Australia*, Chile*, China*, Japan*	58.2
5'0"	1524	Former USSR, Finland, Mongolia	12.8
5'3"	1600	Australia*, Brazil*, Ireland*	1.2
5'6"	1676	Argentina*, Chile*, India*, Pakistan*, Portugal & Spain* ⁴	7.0

Notes: *Countries or regions with more than one gauge. ¹Percentages add to less than 100 due to additional, rare gauges. ²750 mm. ³1055 mm. ⁴Originally 1672 mm.; now 1668 mm.

Puffert, Douglas J. "Path dependence in spatial networks: the standardization of railway track gauge." *Explorations in Economic History* 39.3 (2002): 282-314.

Why institutions are hard to change?

- People invest various resources in existing institutional structure
- People are risk-averse and bounded rational
- Learning effect works: people get benefits from existing institutions
- Collective actions are costly to coordinate

Revolutionary institutional change

- Theoretical model
- Return to past experience
- Transplantation
 - Why so many failures?
 - Constitutions in Latin American countries (copied from US)
 - US and European bankruptcy laws and commercial codes in transitional countries
 - French educational and bureaucratic systems in former French colonies
 - Transplantation costs?

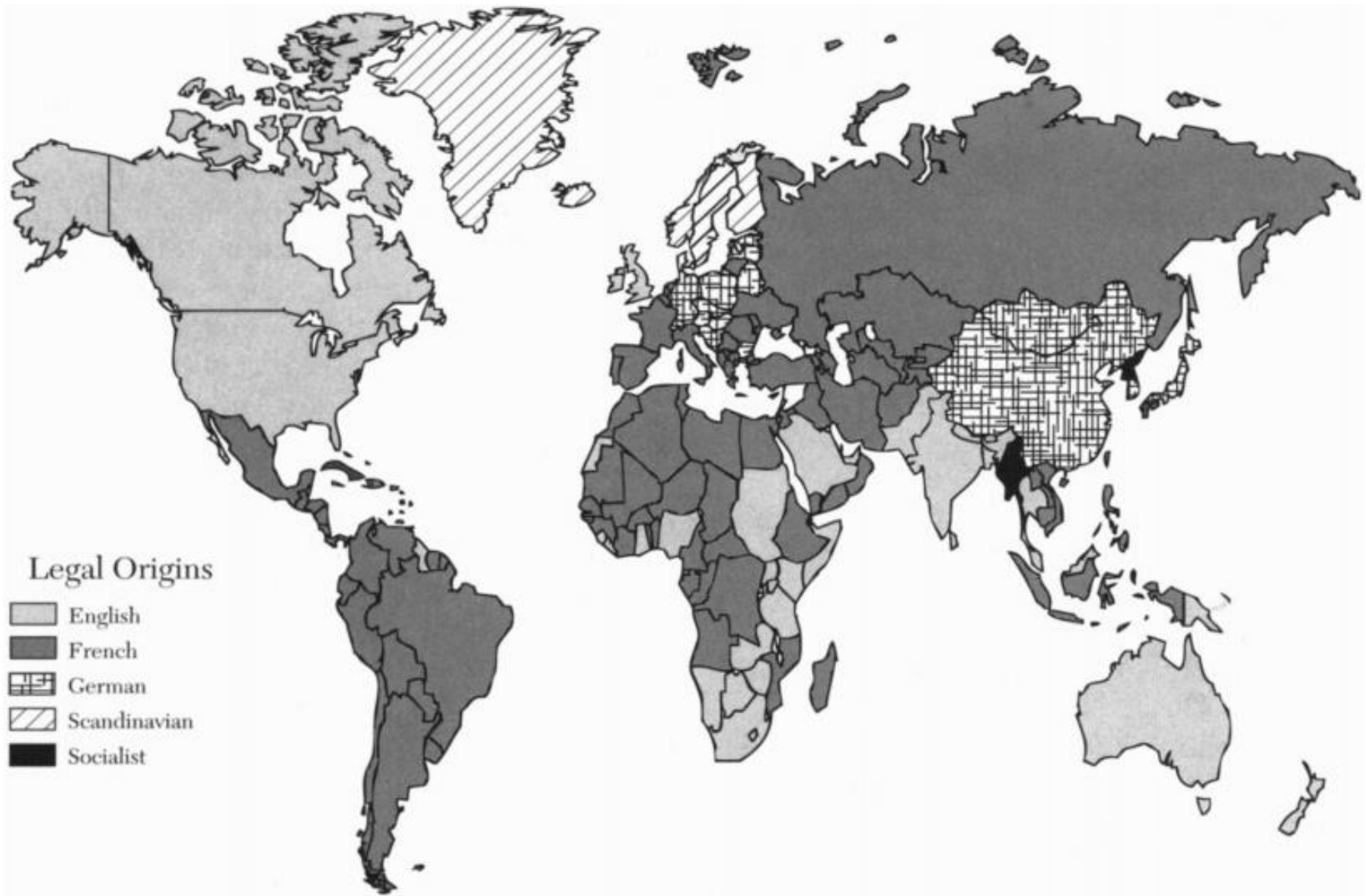


Figure 1. The Distribution of Legal Origin

Natural experiments

Separation into treatment and control group happens under impact of factors that do not depend on participants' actions or preferences

- **Example:** separation of Korea into South and North Korea – all other factors (such as geography, culture, language) – being equal
- **Another example:** European colonization of America, Africa and Asia
 - Since 1500 European countries (primarily, Spain, England, France and Holland) acquire new territories in America, South-East Asia and Africa

Colonial heritage: reversal of fortune

- Massive colonization of different parts of the world by Europeans (since 1500)
- Shock changes in existing institutions
- Establishing of different institutions in different countries (wide range – from democracy to slavery)
- Reversal of Fortune: the richest civilizations of the past (at the beginning of 1500-s) are now among poor ones

Proxies for prosperity in early centuries

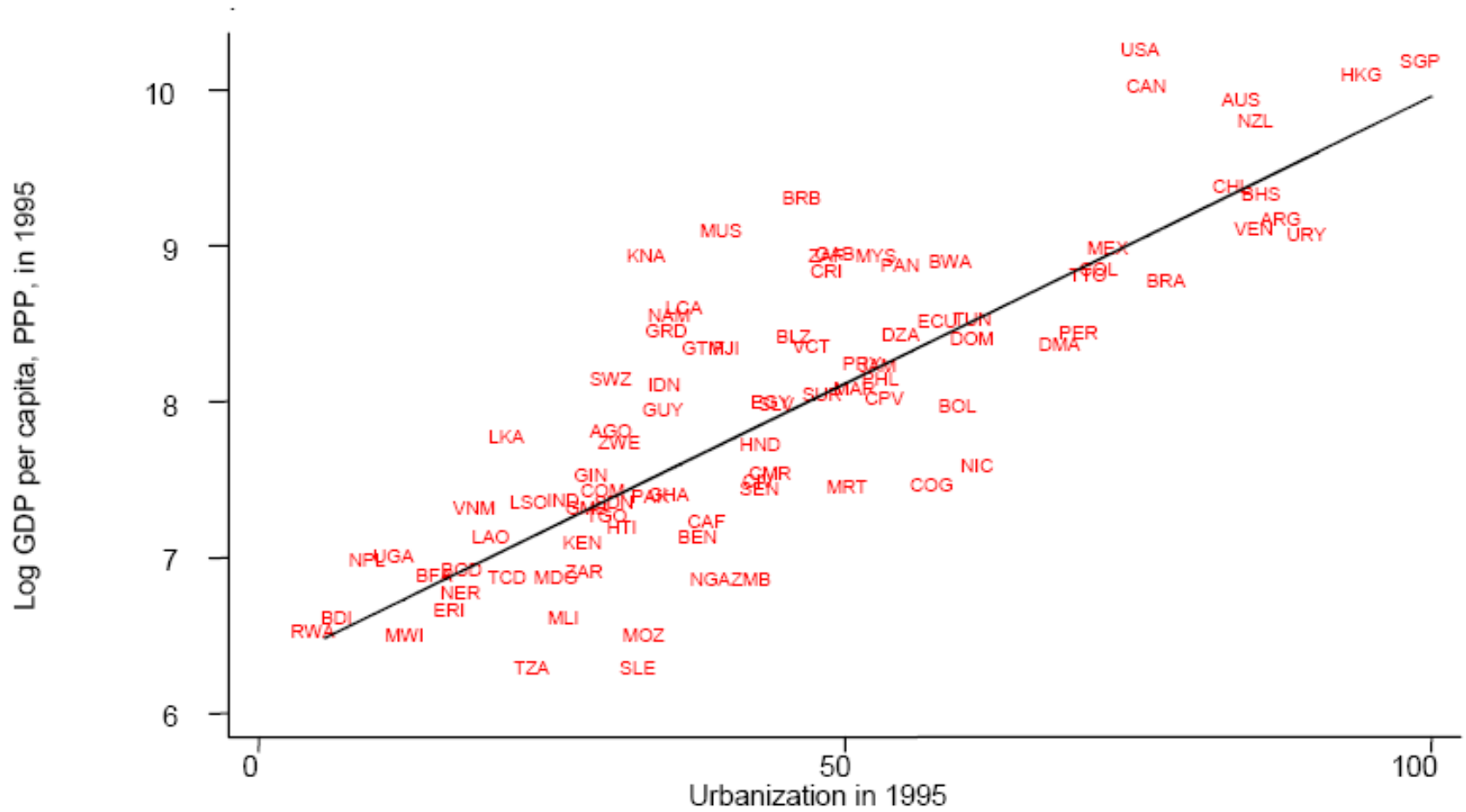
Urbanization

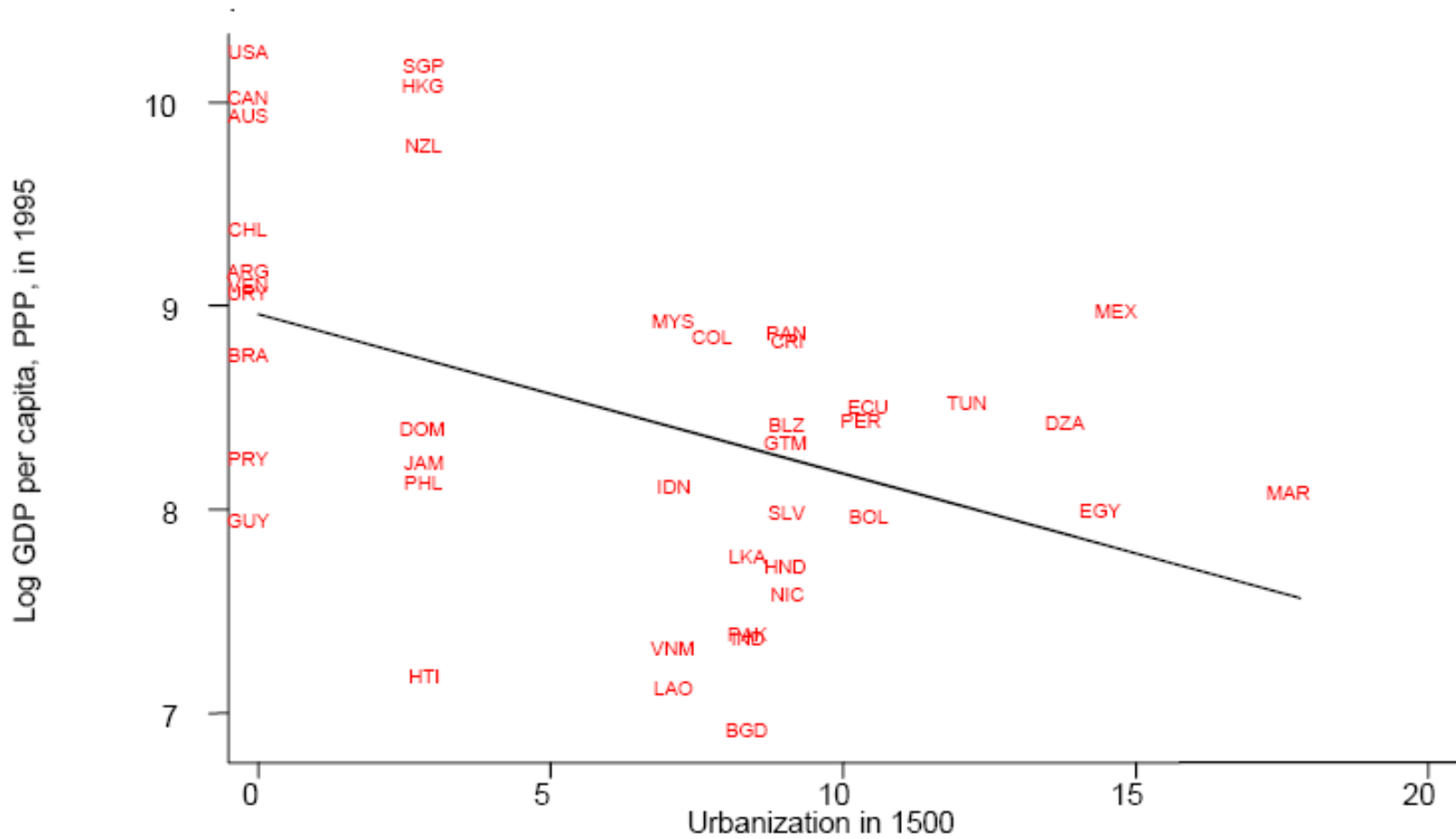
- Only areas with high agricultural productivity and developed transportation network can support large urban populations

Population density

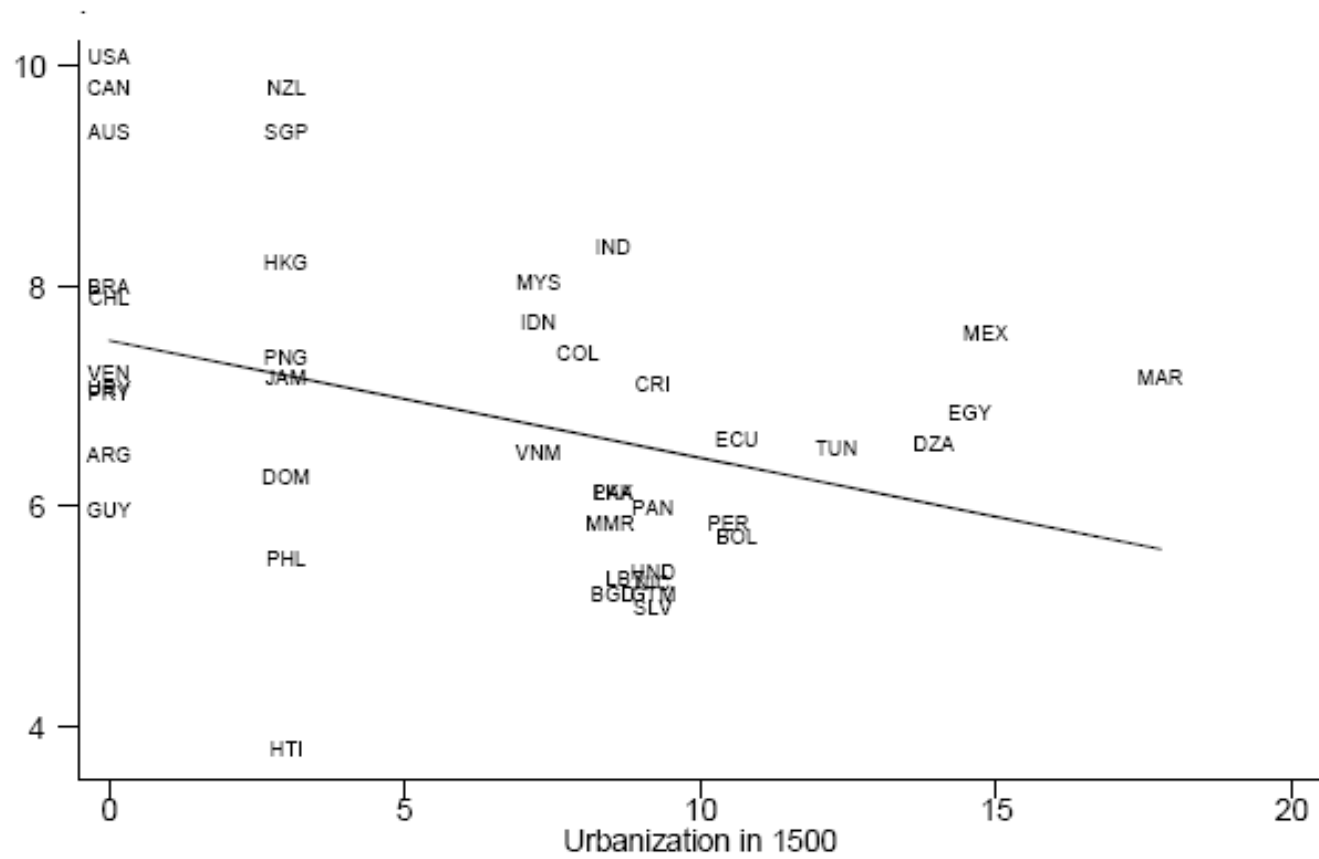
- During preindustrial periods only relatively prosperous areas could support dense populations

Urbanization as a proxy

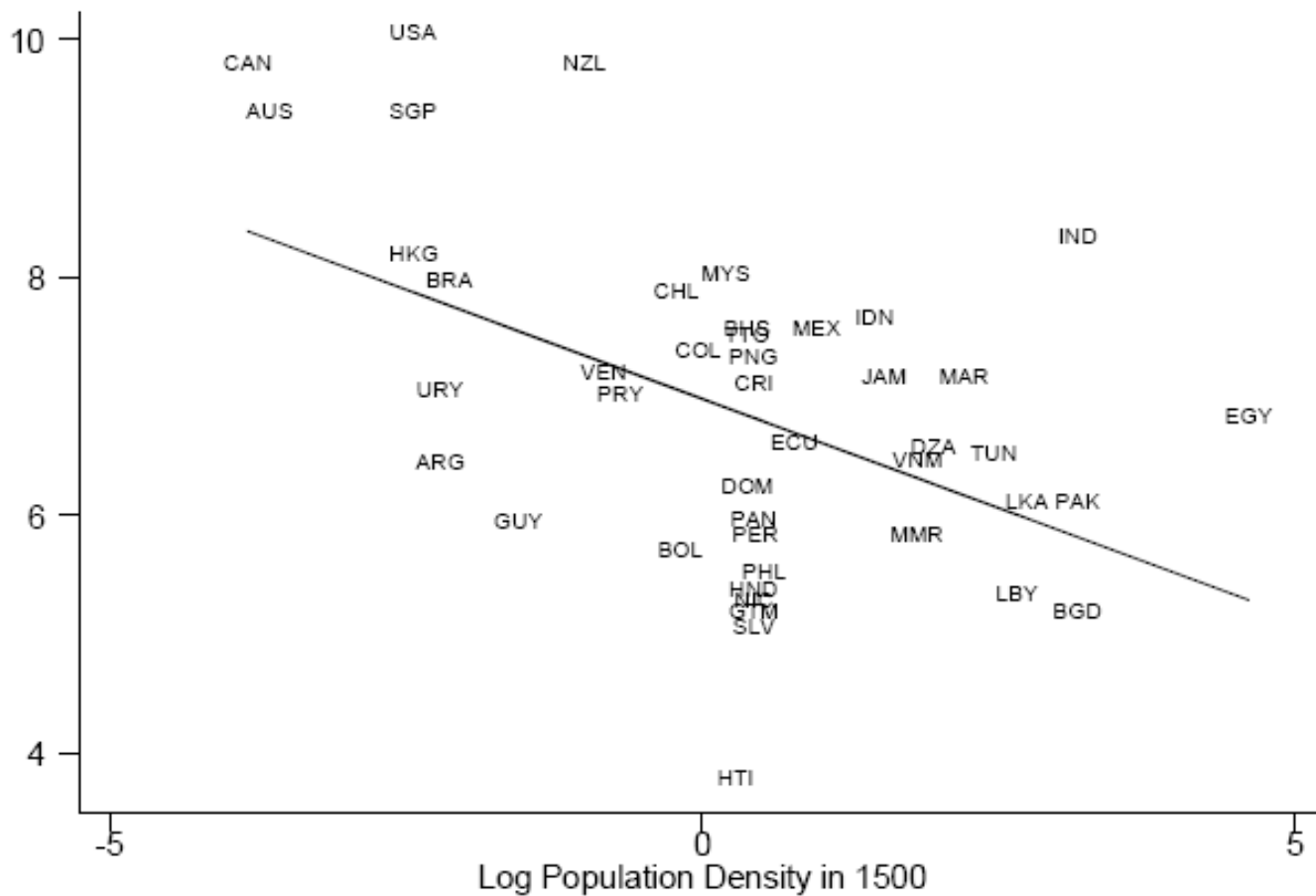




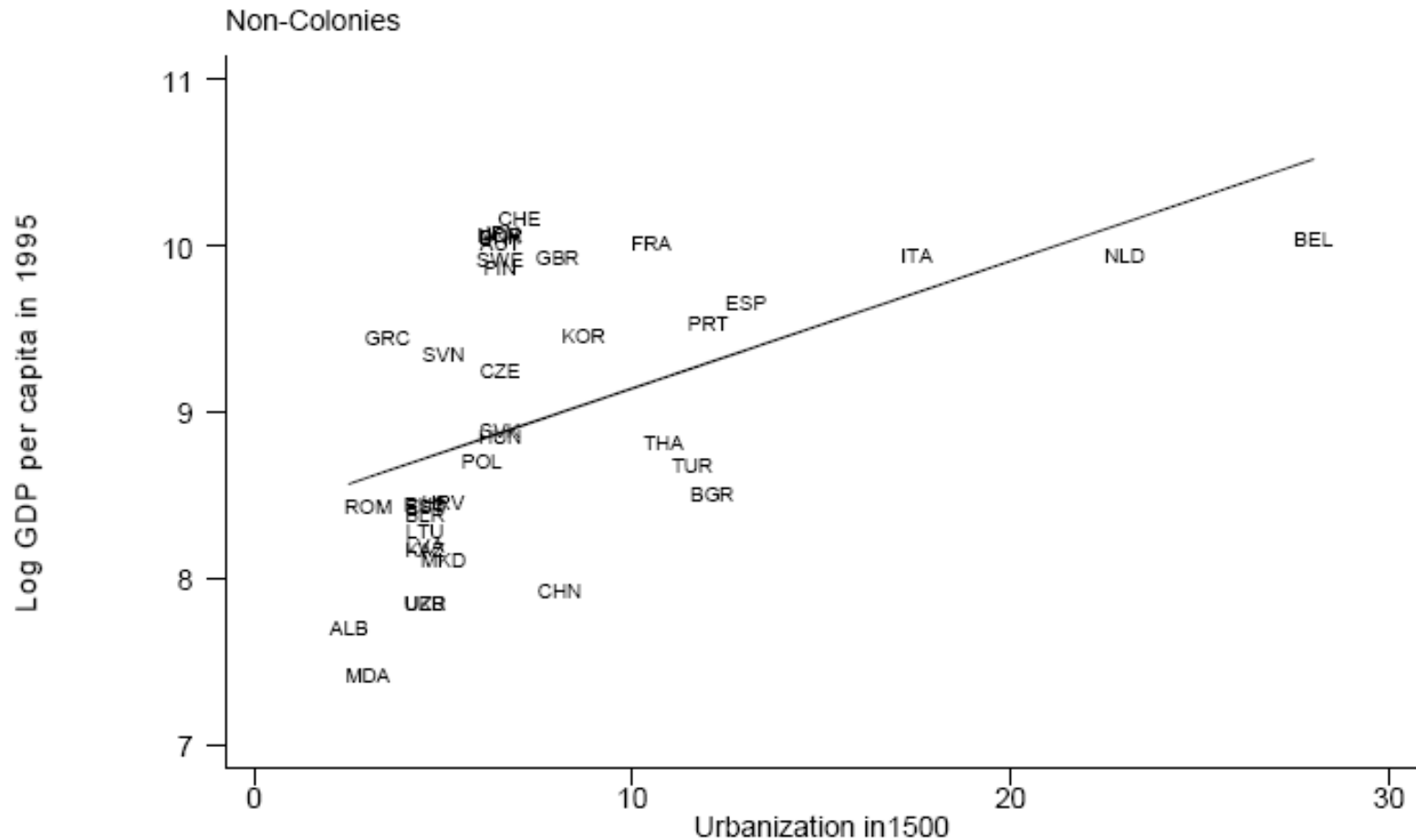
Average Protection Against Risk of Expropriation, 1985-95

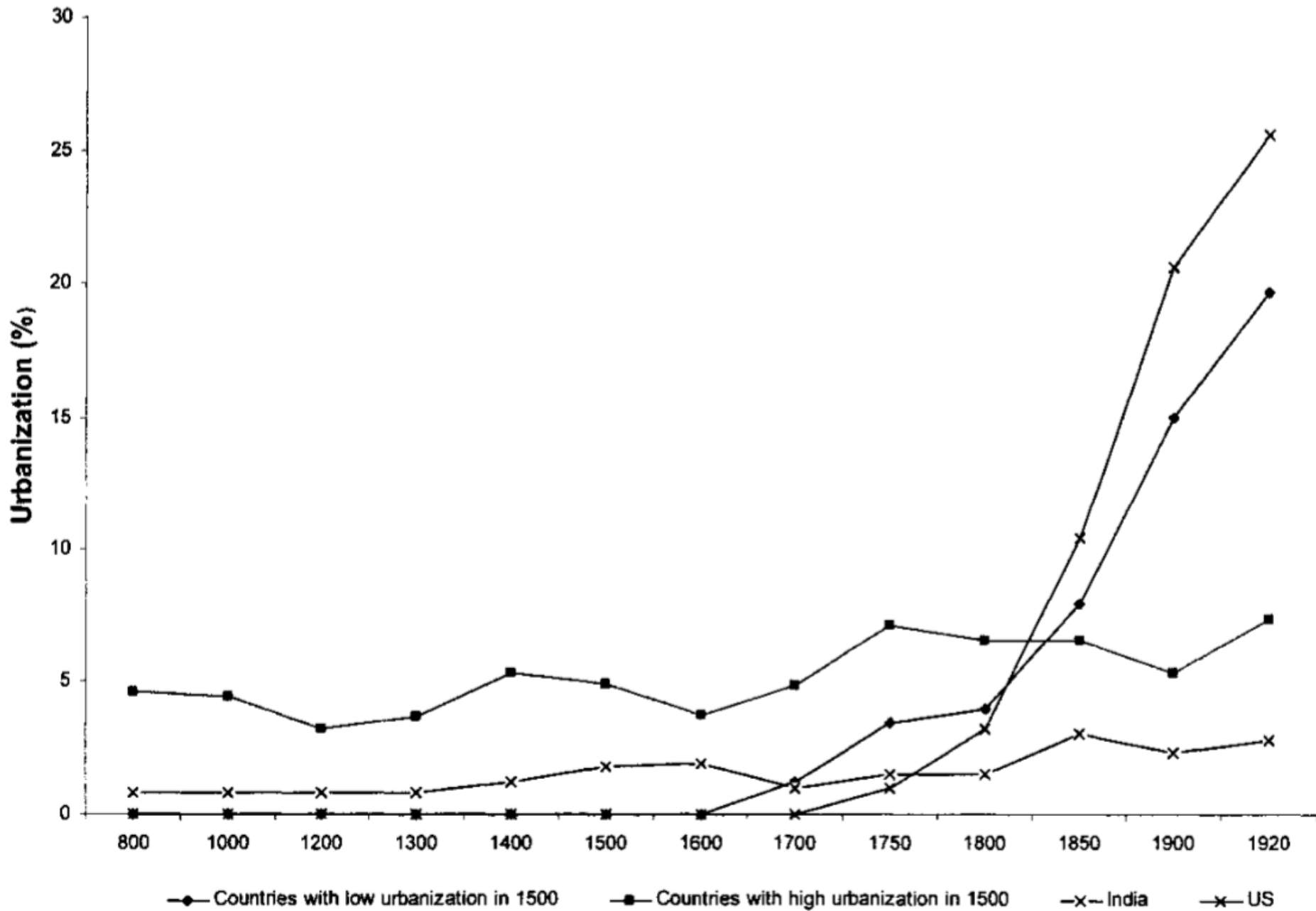


Average Protection Against Risk of Expropriation, 1985-95



What is striking in this Reversal of Fortune?





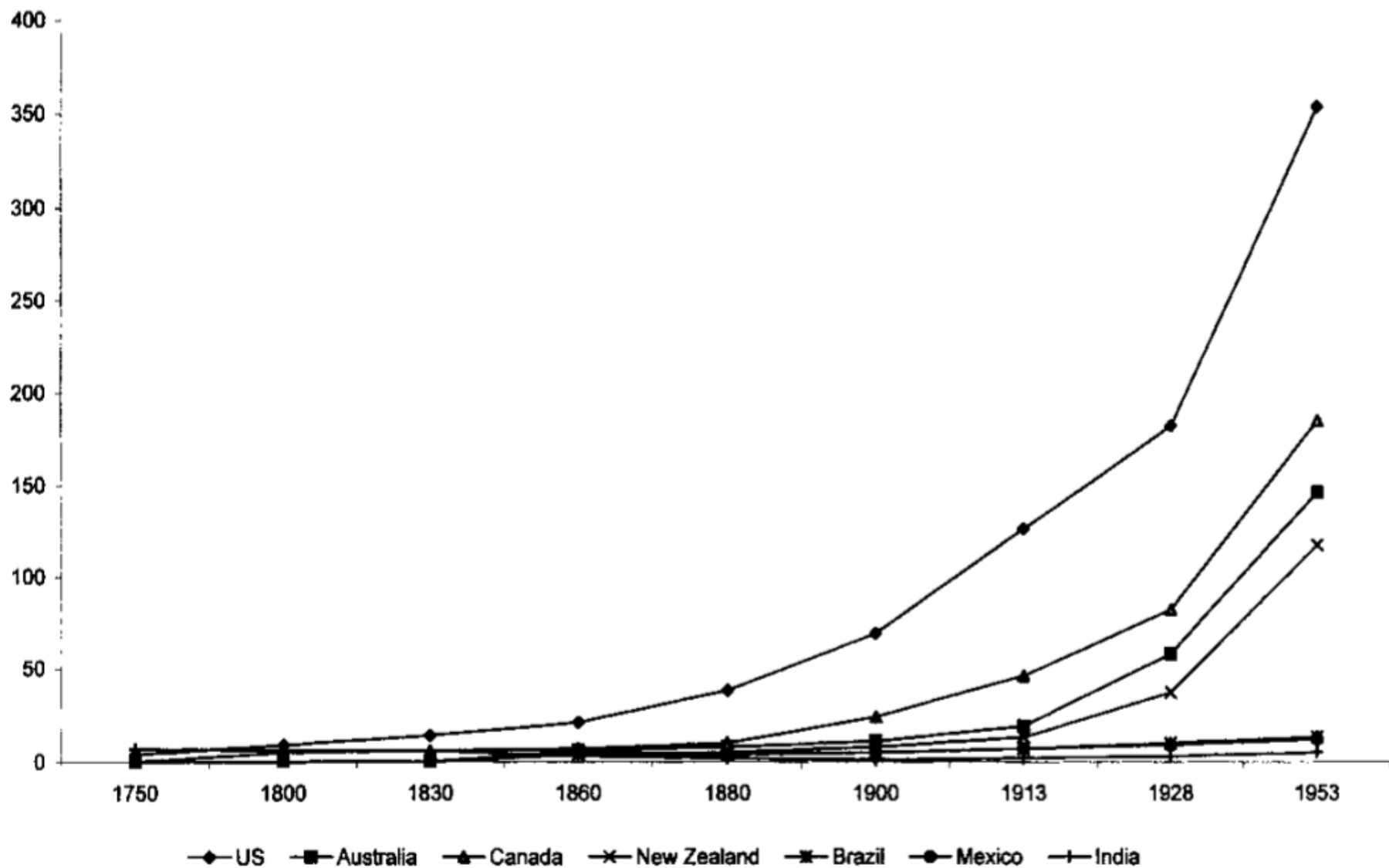


FIGURE IVb
Industrial Production per Capita. 1750–1953

Geography hypothesis

Differences in economic performance reflect differences in geographic, climatic, and ecological characteristics across countries

- Example: view that climate has a direct effect on income through its influence on work effort
- This **simplest version of the geography hypothesis** predicts persistence in economic outcomes, since geographic factors that are the first-order determinants of prosperity are time-invariant
- Doesn't work: whatever factors are important in making former colonies rich today are very different from those contributing to prosperity in 1500

Sophisticated geography hypotheses

Certain geographic characteristics that were not useful, or that were even harmful, for successful economic performance in 1500 may turn out to be beneficial later on

- «Temperature drift hypothesis»: geography becomes important when it interacts with the presence of certain technologies
- Example: tropical areas provided the best environment for early civilizations. But with arrival of «appropriate» technologies, temperate areas became more productive
- Then reversal should be associated with the spread of European agricultural technologies (not the case!)

Institutional hypothesis

European colonialism not only disrupted existing social organizations, but led to the establishment of, or continuation of already existing, extracting institutions on previously prosperous areas and to the development of institutions of private property in previously poor areas

Colonization introduced relatively better institutions in previously sparsely settled and less prosperous areas: while in number of colonies (such as US, Canada, Australia, New Zealand, Hong Kong, and Singapore) Europeans established institutions of private property, in many others they set up or took over already existing extractive institutions in order to directly extract resources, to develop plantation and mining networks, or to collect taxes

Determinants of early institutional choice

What determines whether Europeans pursued an extractive strategy or introduced institutions of private property?

Factor 1: Economic profitability of alternative policies

- High population density – supply of labor – existing systems of tax administration or tribute

Factor 2: Whether Europeans could settle or not

- Population density is also important

Variety of incentives

- Different incentives – different institutions, created by European colonists
- Population density as an important factor
- What other factors may be important?
 - Infection diseases – malaria, yellow fever
 - Mortality rates among colonists as an instrumental variable: MR has an impact of current economic performance via institutions only (source of exogeneous variation!)

Acemoglu, Johnson, Robinson (2001): impact of mortality on economic performance

Different colonial policies were associated with emergence of different institutions

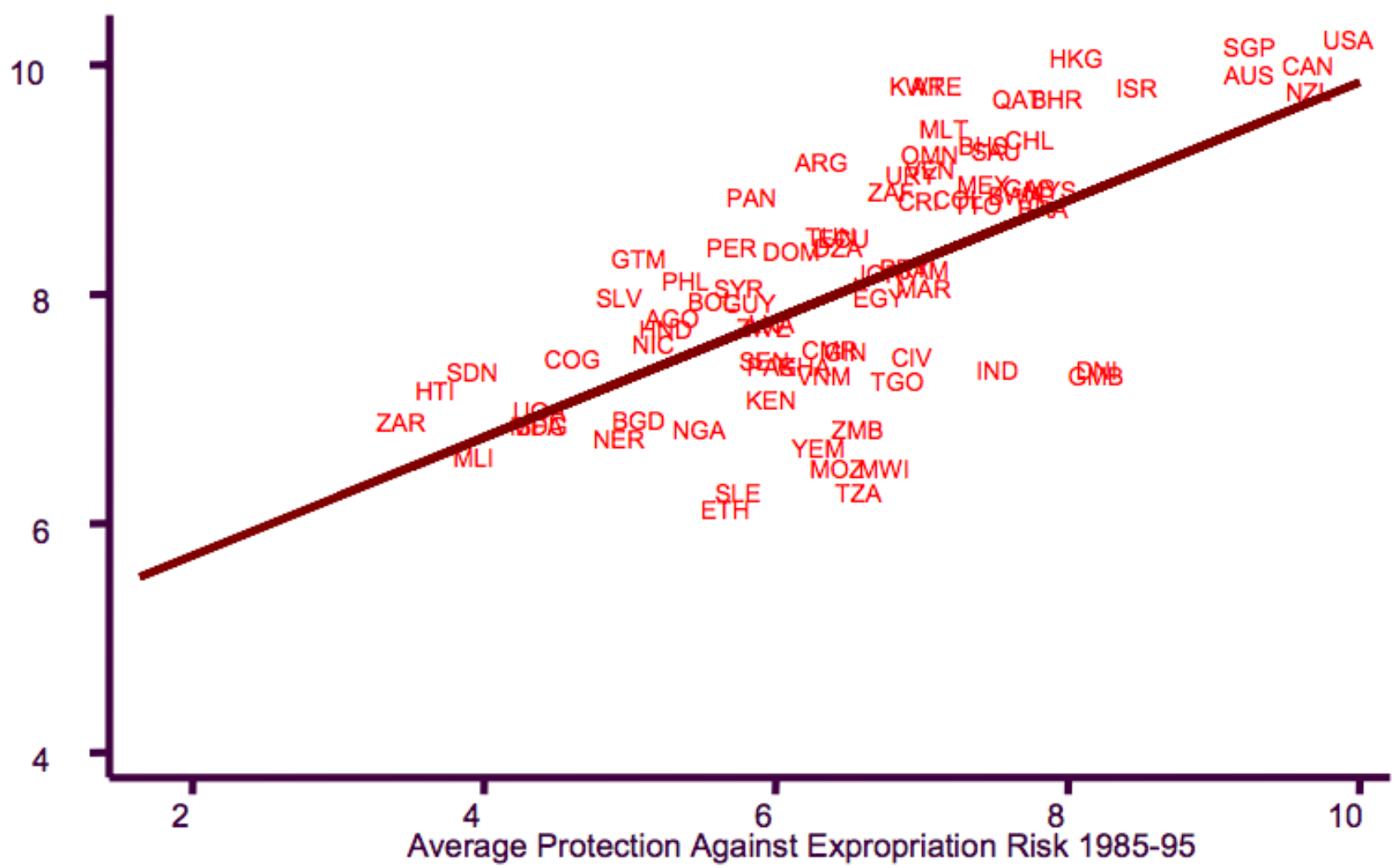
Captive strategy (Congo)

- “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.”
- Strategy of migration and settlement (Canada, New Zealand)
- Strategies of colonization depended on opportunities for settlement

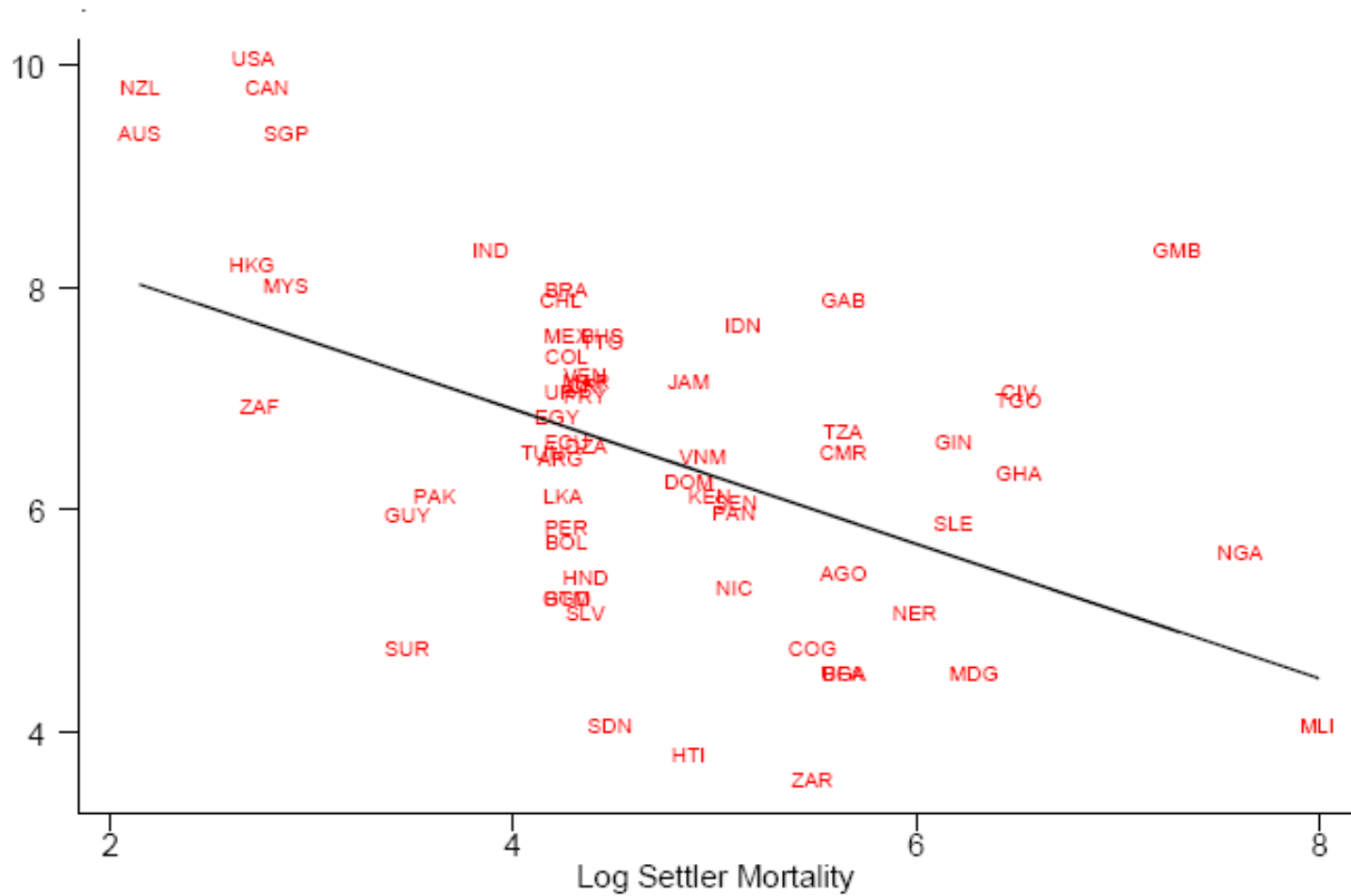
(potential) settler mortality \Rightarrow settlements \Rightarrow early institutions

early institutions \Rightarrow current institutions \Rightarrow current performance

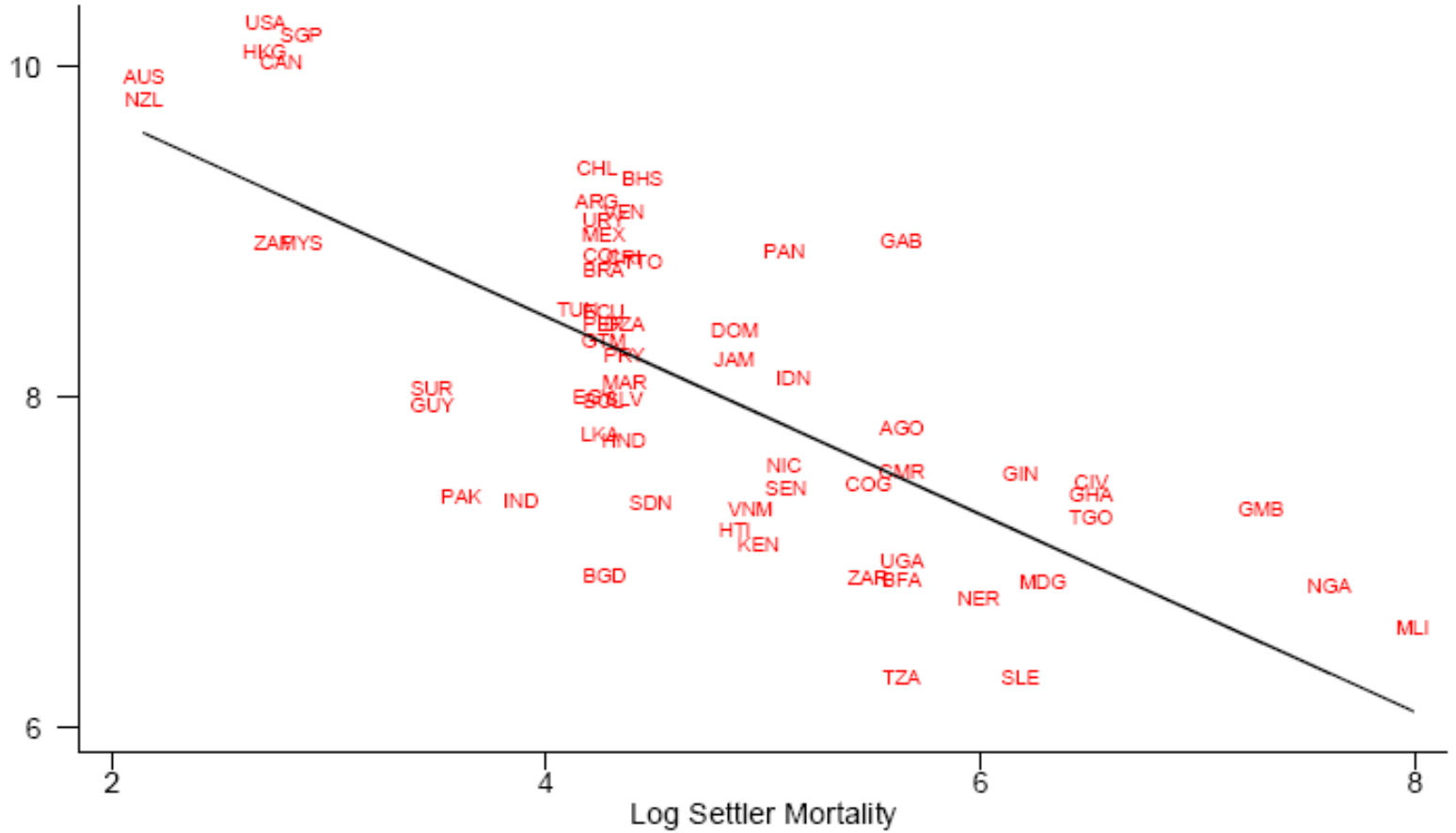
Log GDP per capita, PPP, 1995



Avg. Protect. Against Risk Expropriation



Log GDP per capita, PPP, in 1995



Institutional persistence: from colonies to independent states

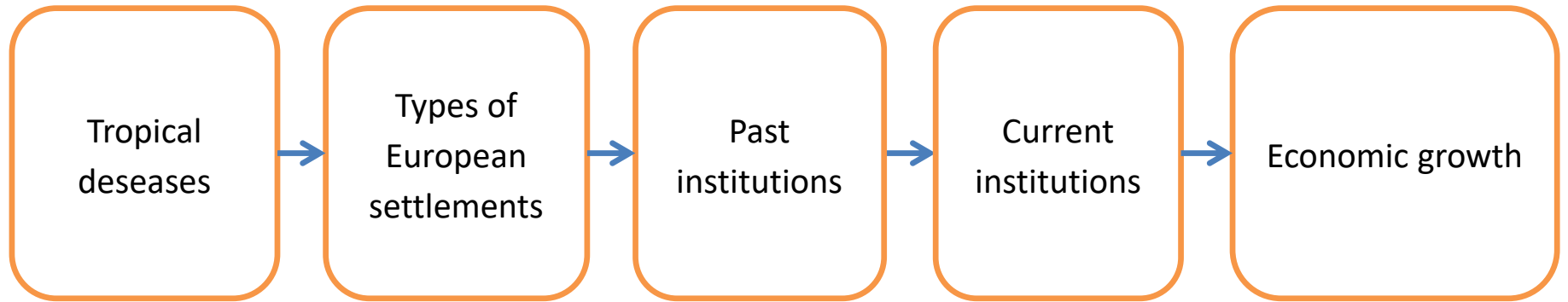
(1) Setting up functioning institutions, which place restrictions on government power and respect property rights, is **costly**

- If these costs have been sunk by the colonial powers, then it may not pay the elites at independence to switch from this set of institutions to extractive institutions. In contrast, when the new elites inherit extractive institutions, they may not want to incur the costs of introducing better institutions, and may instead prefer to exploit the existing extractive institutions for their own benefits.

(2) The gains to an extractive strategy may depend on the **size of the ruling elite**. When this elite is small, each member would have a larger share of the revenues, so the elite may have a greater incentive to be extractive (see Acemoglu and Robinson, 2000). In many cases where European powers set up authoritarian institutions, they delegated the day-to-day running of the state to a small domestic elite. This narrow group often was the one to control the state after independence and favored extractive institutions.

(3) If agents make **irreversible investments** that are complementary to a particular set of institutions, they will then be more willing to support them, making these institutions persist. For example, agents who have invested a lot in human and physical capital will be in favor of spending money to enforce property rights, while those who have less to lose may not be.

Natural experiment



Acemoglu, Daron, and James Robinson. *Why nations fail: the origins of power, prosperity, and poverty*. Random House Digital, Inc., 2012.

Acemoglu, Daron, Simon Johnson, and James A. Robinson. "Reversal of fortune: Geography and institutions in the making of the modern world income distribution." *The Quarterly Journal of Economics* 117.4 (2002): 1231-1294.

Acemoglu, Daron, Simon Johnson, and James A. Robinson. *The colonial origins of comparative development: an empirical investigation*. No. w7771. National Bureau of Economic Research, 2000.