Cross-country Income Gaps: Institutions

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Objectives

The world's richest countries produce 20 times more output per worker than the poorest.

Why?

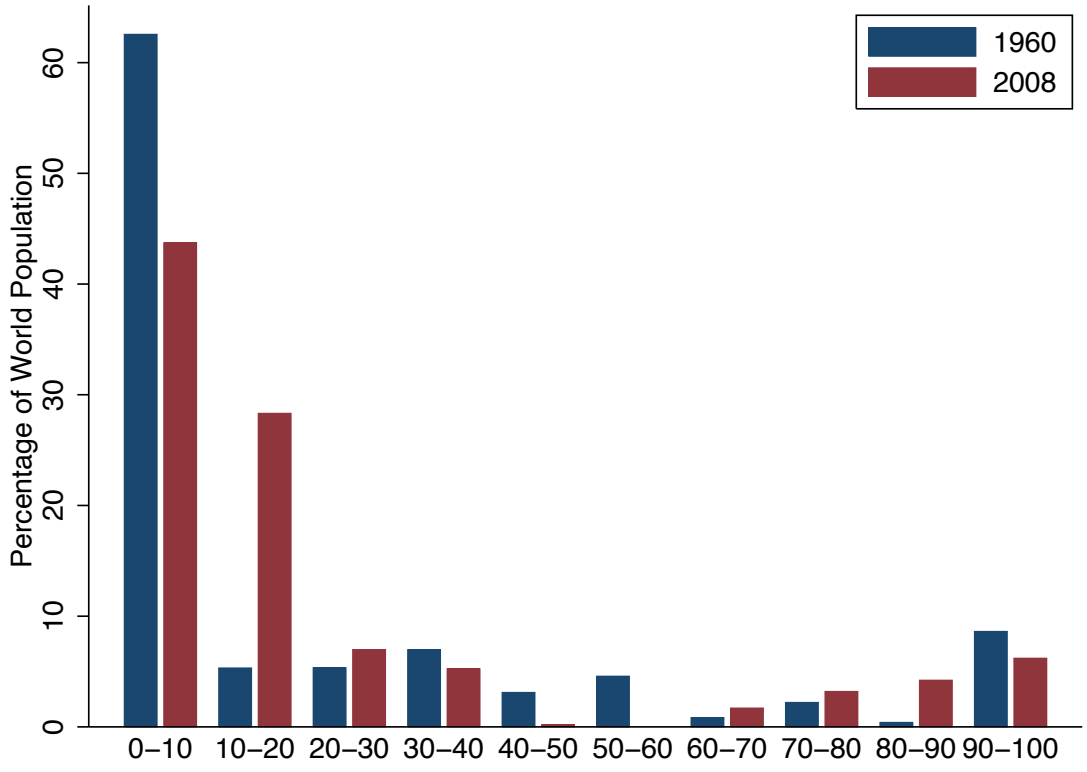
Most economists believe that **institutions** are the main cause of cross-country income differences.

In this section you learn:

1. what institutions are
2. which evidence supports the importance of institutions (an example of IV)
3. about the origins of institutional differences

Fact

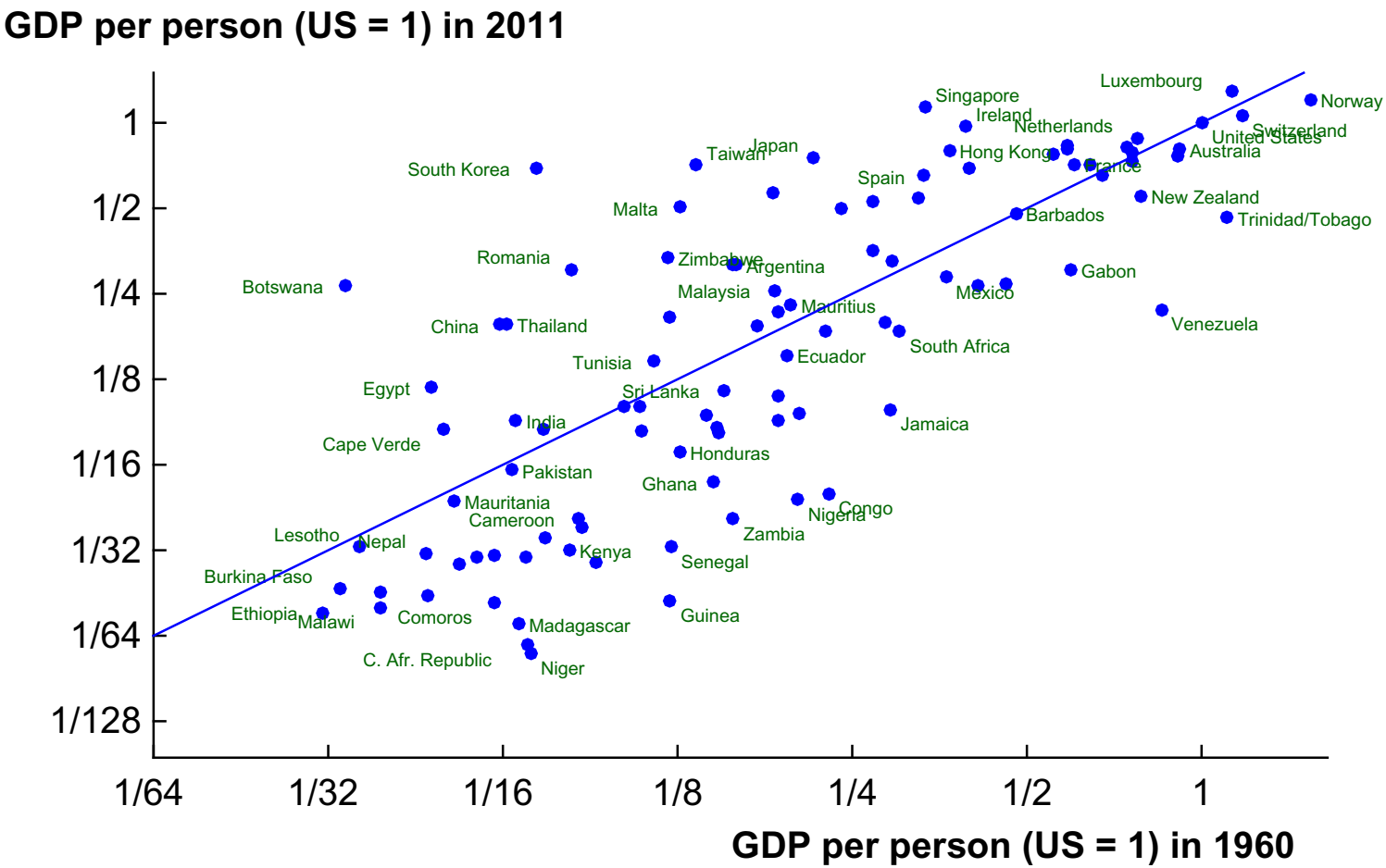
More than half of the world population earns less than 10% of U.S. income per worker.



Source: Jones (2013)

Fact

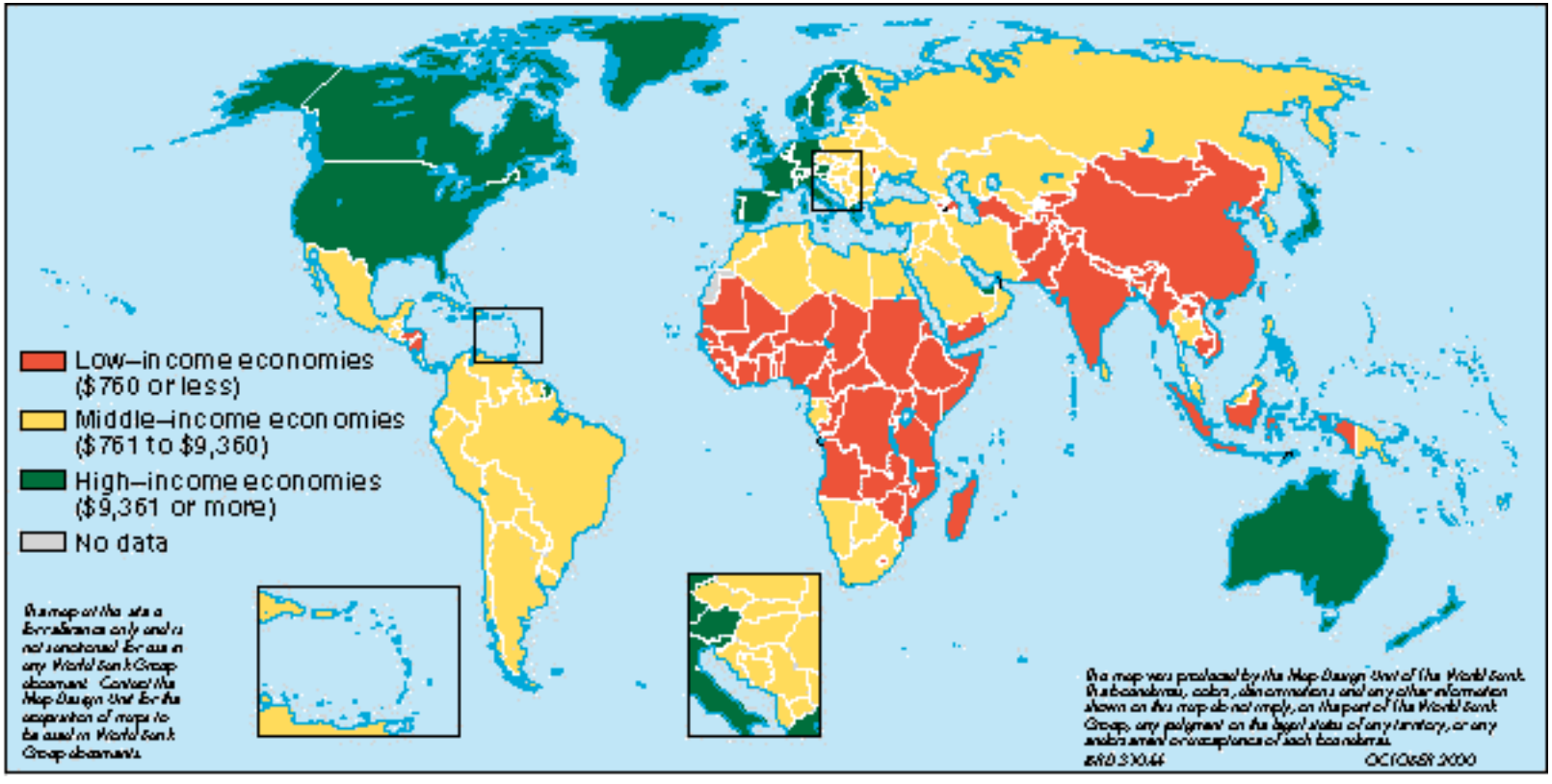
Income gaps persist over long time periods.



Source: Jones (2016)

Fact

Rich and poor countries are geographically concentrated.



What does this suggest about the origins of income differences?

See Acemoglu and Robinson (2001) for more.

Institutions:
What are they?

What are Institutions

Vaguely:

> *"Humanly devised constraints that shape human interaction." (North 1990)*

Examples

Protection of property rights.

- Russia: Businesses are routinely "purchased" by politically connected actors.

Rule of law.

- Peru: It takes 290 days to start a small business (paying 2 bribes; De Soto).
- USA: 6 days; India: 29 days (World Bank "Doing Business").

Freedom of speech.

- Galileo. Navalny.

... and many more (the key problem)

How Do Institutions Affect Output?

Reduced return on investment:

- bribery
- expropriation

Misallocation of resources:

- favorable treatment for politically connected firms

Less competition

- government monopolies

... and many more channels (the **key problem**).

The key problem

There are many institutions that may matter.

There are many channels through which institutions may matter.

Therefore:

- It is **easy** to show the obvious: institutions are important.
- It is **hard** to figure out **which institutions** are important.

Evidence: Institutions Matter

Great Divergence

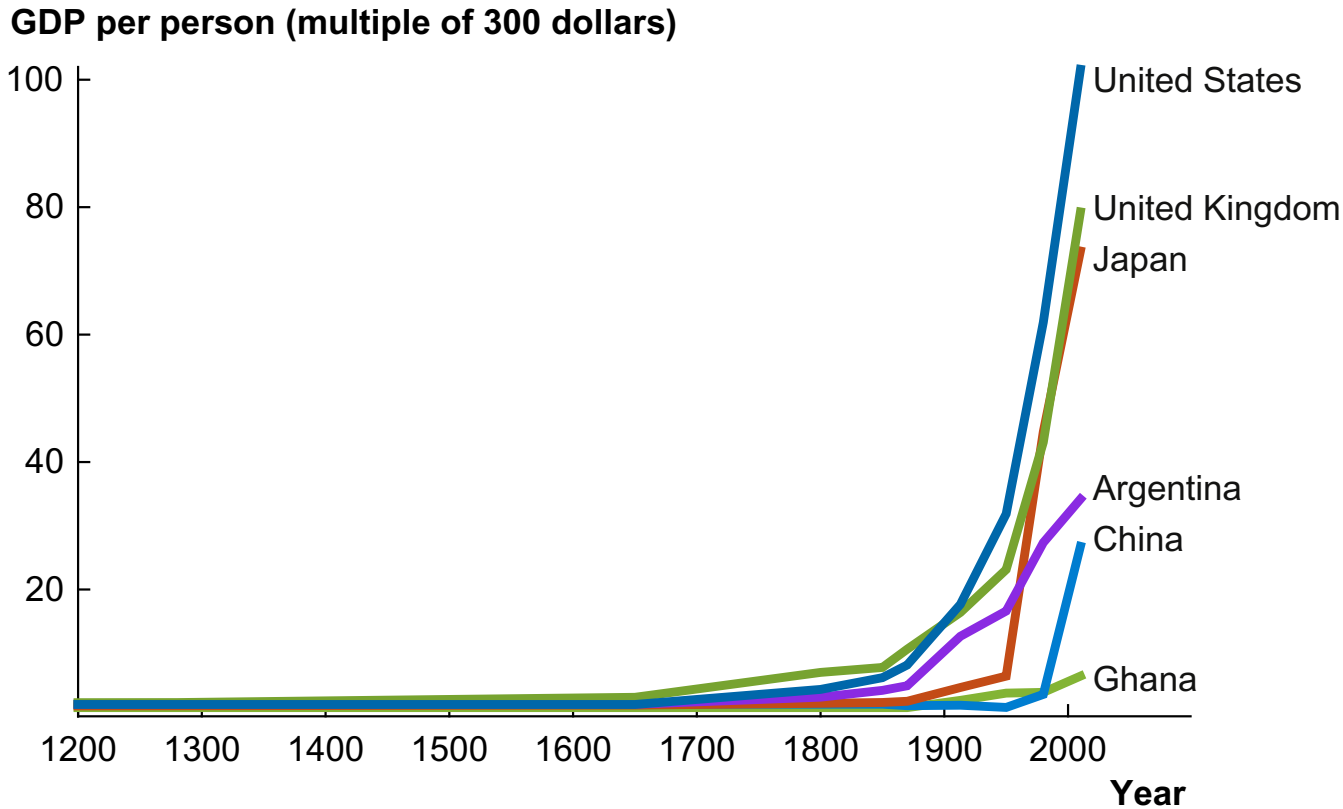


Fig. 21 The great divergence. *Note*: The graph shows GDP per person for various countries. The units

`Source: Jones (2016)`

Rich countries took off after the **Industrial Revolution**

Great Divergence

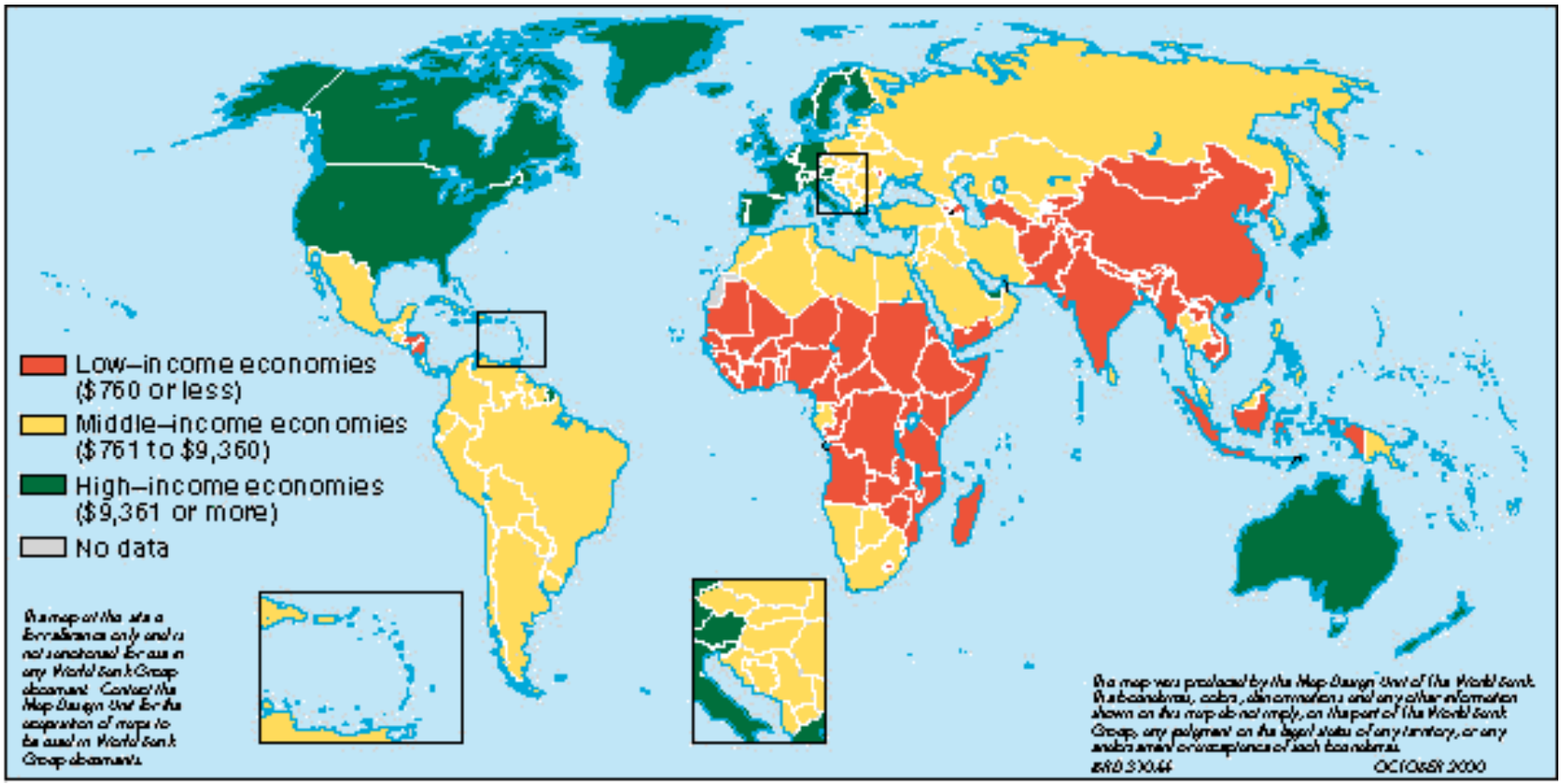
Implications:

Whatever causes cross-country income gaps

- took hold around the time of the Industrial Revolution
- has affected countries persistently over centuries
- has caused countries to delay industrialization

What force is this persistent? - Institutions.

Geography



Another highly persistent force: geography.

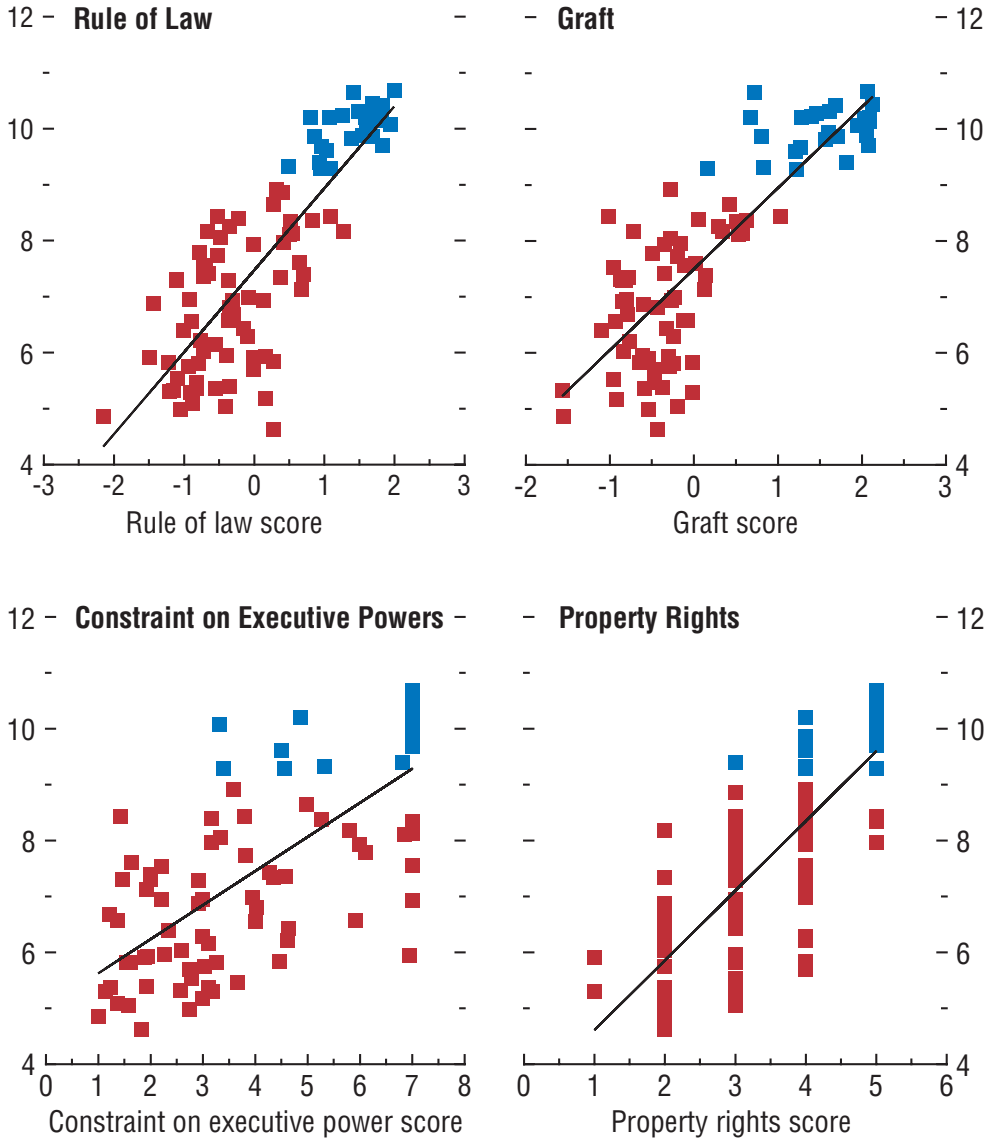
What do rich countries have in common?

How to measure institutions?

The problems:

- There are many institutions
- Institutions are hard to measure (unlike, say, tax rates)
- Rich countries have lots of good institutions (correlation)

Rich Countries Have Good Institutions



IMF (2003)

A Measurement Problem

In rich countries, usually **all** institutions are high quality.

Which measure to use?

One answer: use an **index**

- an average of several measures
- e.g. Social Infrastructure by Hall and Jones (1999)

The downside: not clear **which** institutions matter.

How About Causality?

We know that correlations do not imply causation.

- Why not?

How can we establish that institutions cause income?

A general problem in economics.

Common approaches:

1. Build a model (not yet feasible for institutions).
2. Natural experiments.

Natural Experiments

Why is it hard to establish cause-effect?

- because "other" variables may vary with institutions

The science approach: controlled experiments

- vary one variable at a time
- hold all others constant
- example: medical trials with control groups
- rarely feasible in (macro) economics

Natural Experiments

Natural experiments approximate controlled experiments.

- Look for historical cases where a "random event" changes a variable.

Examples:

- a war or natural disaster destroys capital – what happens to output?
- countries are divided and adopt different institutions

Divided countries

Cases:

- East & West Germany
- South & North Korea
- Hong Kong and Taiwan vs. China

In all cases, the democratic / market oriented countries did better than the communist ones.

Divided Countries: Korea

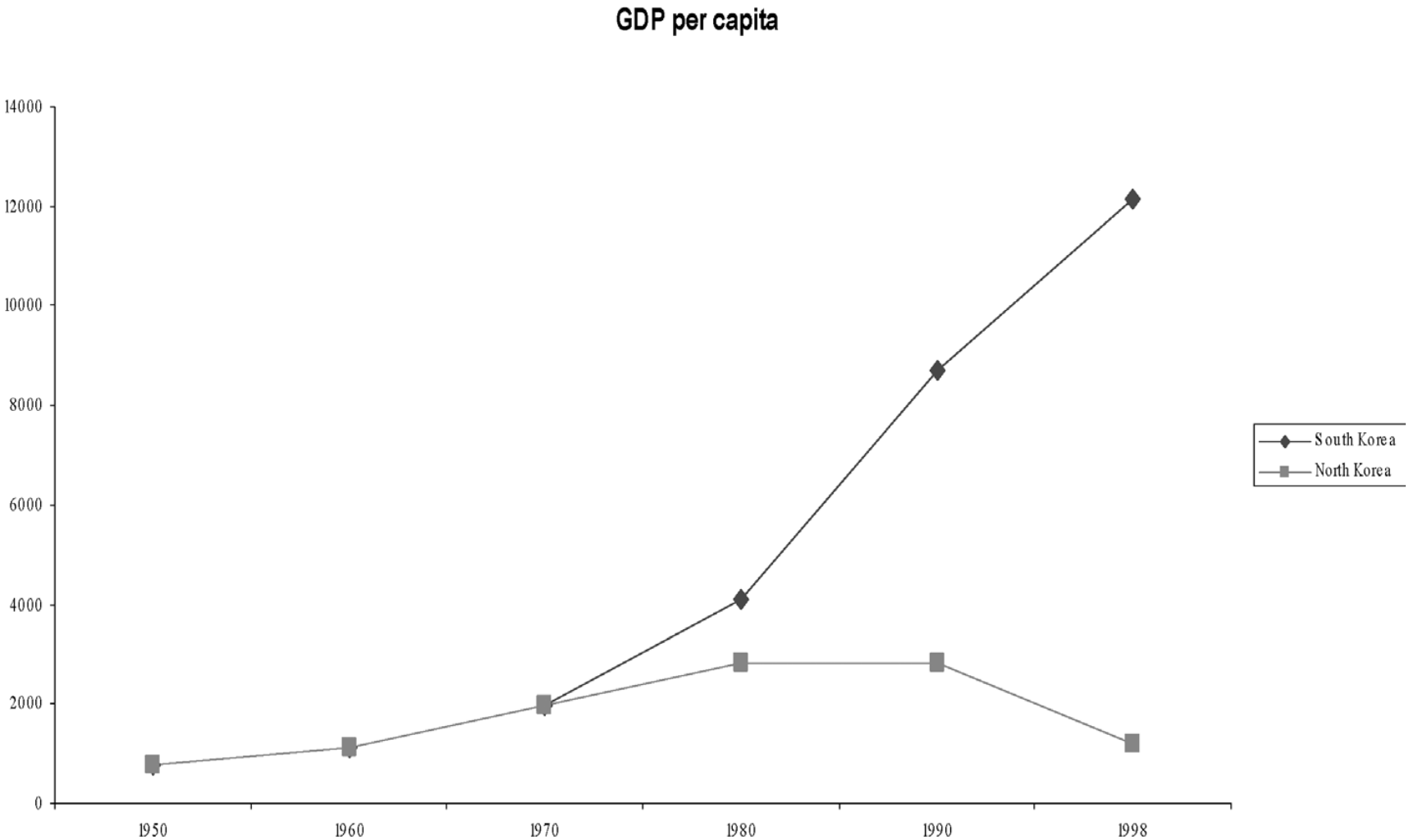


Figure 3. GDP per capita in North and South Korea, 1950–98.

Source: Acemoglu et al. (2005)

Divided Countries

Limitations:

- very few cases
- crude: only shows the "obvious point" that autocracies don't do well
- does not answer the key question: **which institutions** should poor countries improve?

Colonies

Since there are few divided countries, we need another source of evidence.

Colonies can be used to shed light on:

- where do bad institutions come from?
- how much do they matter for output?

A remarkable fact: colonial effects persist for hundreds of years.

Colonies: The Story

A large part of the world was colonized by Europeans after 1500.

In some colonies, democratic institutions were put in place

- North America, Australia, New Zealand

In other colonies, dictatorial / expropriating institutions were put in place

- Africa

Today's institutions are strongly related to those imposed on the colonies hundreds of years ago.

Can we simply compare GDP between colonies with good versus bad institutions and be done?

Colonization as Natural Experiment

To get clean evidence, we need to look for "accidental" factors that shaped the institutions of colonies.

- then we have a **natural experiment**
- some colonies “accidentally” have bad institutions while others have good institutions
- we can estimate the effect of institutions on output by comparing the two groups

Where Did Colonizers Choose Bad Institutions?

Colonies come in two types:

1. Poor: Few resources and few people.
2. Rich: Endowed with resources that can be extracted (including labor).

In poor colonies, the only way to exploit the land is to **settle**.

- Settlers bring institutions which protect their own rights.
- Or settlers establish rights with force (USA).

In rich colonies, the most profitable strategy is to **expropriate** locals.

- Institutions protect the colonial minority's rights / deny rights to the local majority.
- Forced labor (South America, Africa).

Implications

This theory predicts a **reversal of fortunes**.

Among colonies: those who were initially rich should now have

- bad institutions
- low income

The same should not be the case among countries that were not colonized.

This idea is due to Acemoglu et al. (2002)

Evidence: Rich Colonies - Bad Institutions

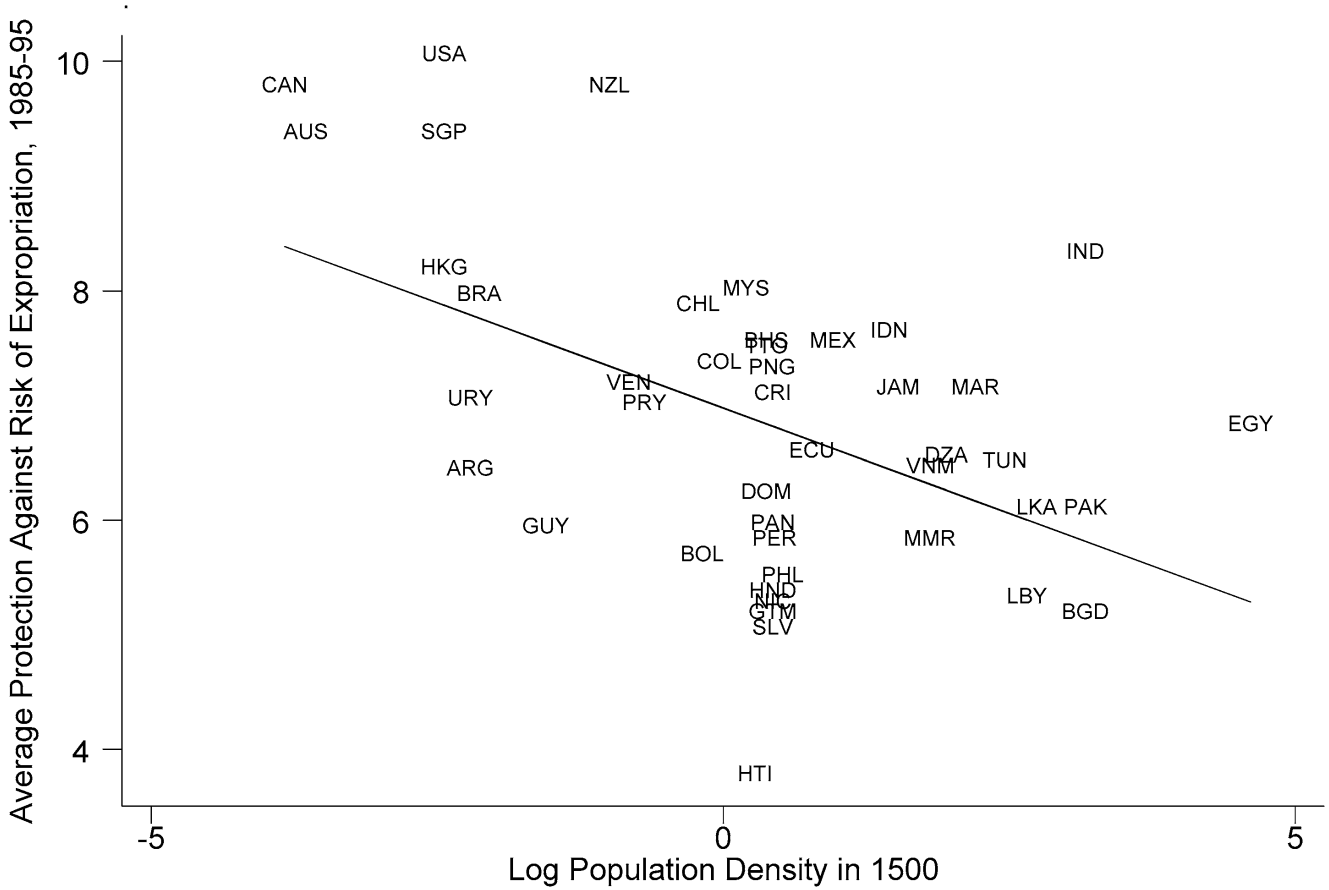


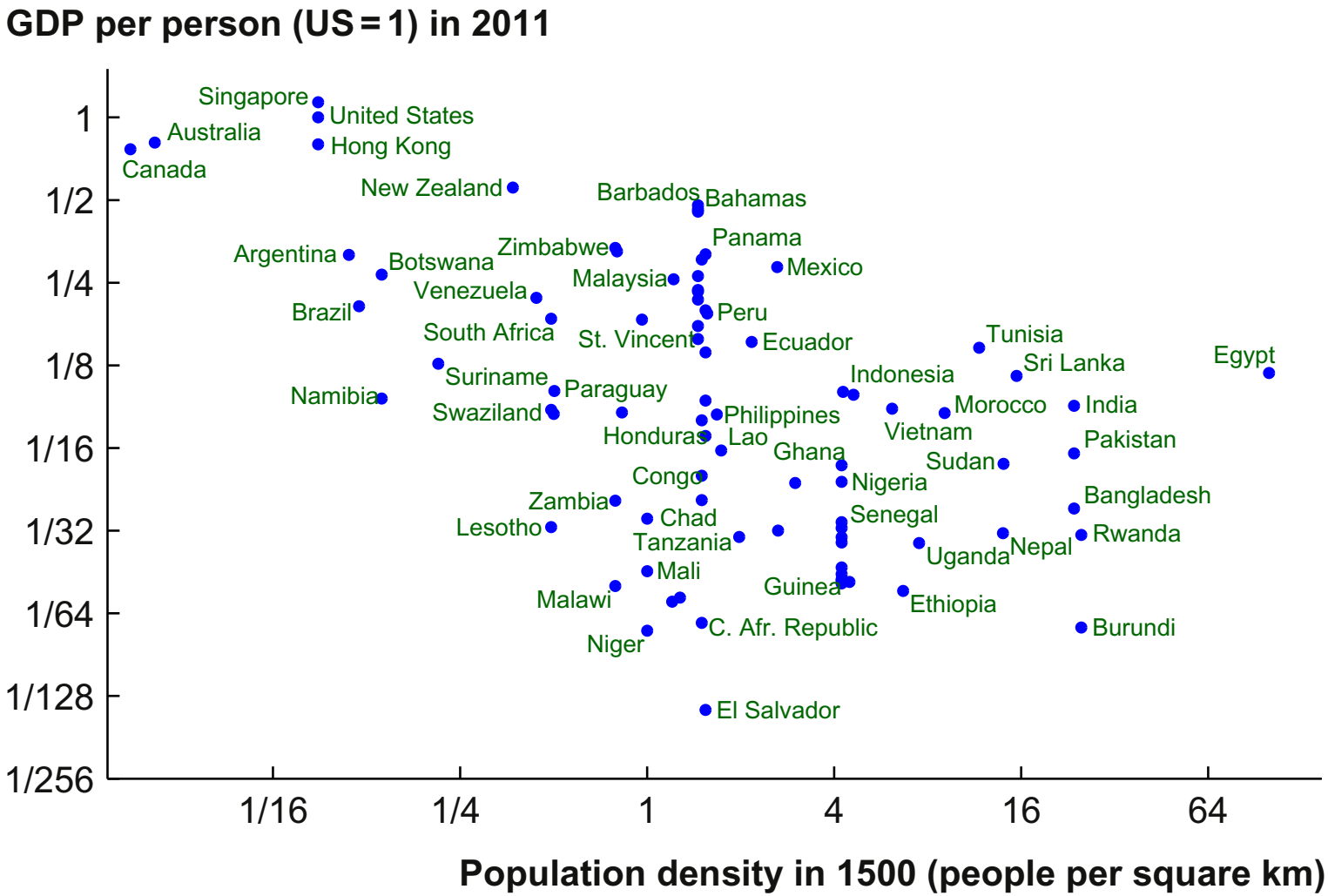
Figure 13. Log population density in 1500 and average protection against risk of expropriation 1985–95.

Source: Acemoglu et al. (2005)

Population density is a proxy for per capita income.

Reversal of Fortune

Colonies that were rich in 1500 are poor today.



Source: Jones (2016)

No reversal among Non-Colonies

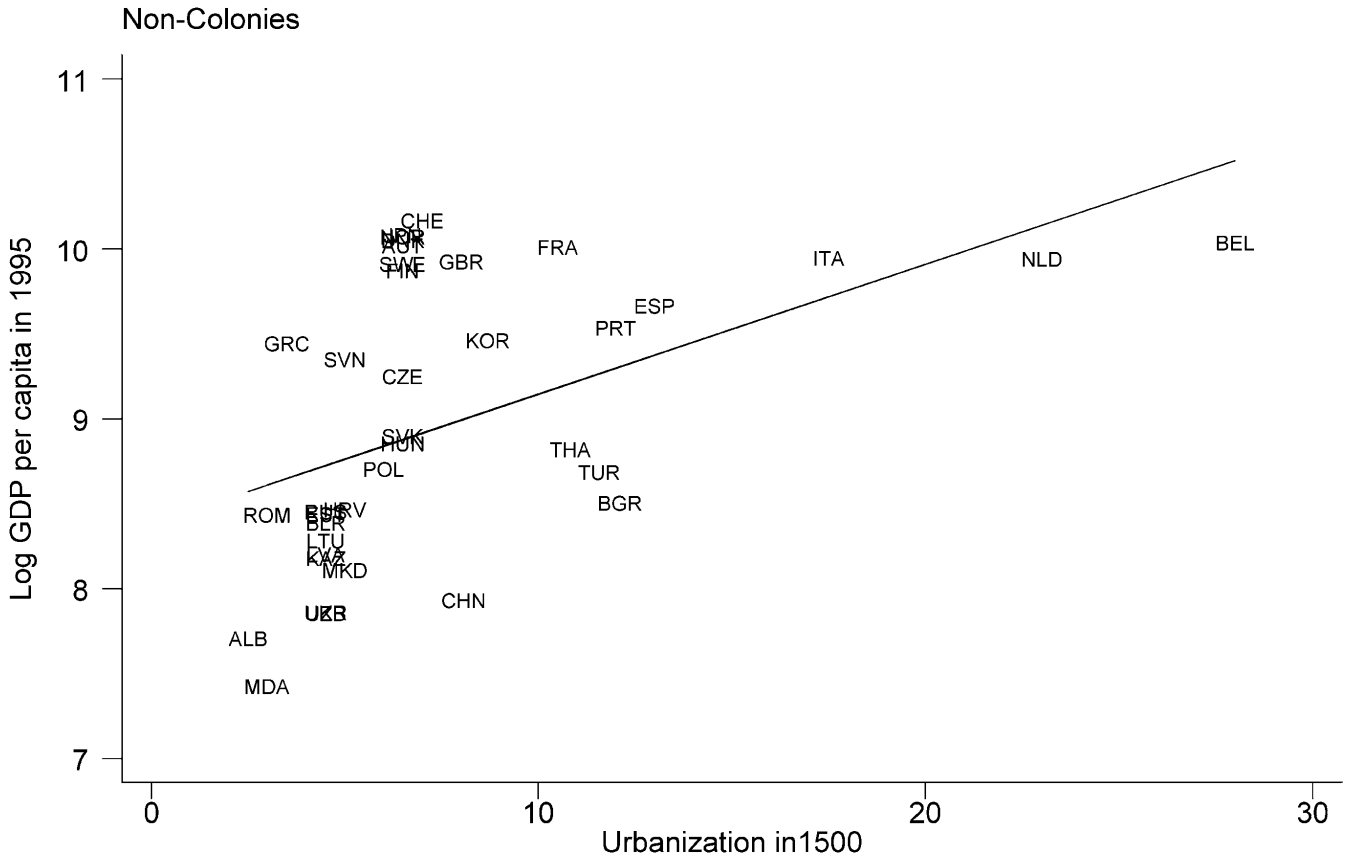


Figure 9. Urbanization in 1500 and log GDP per capita in 1995, among non-colonies.

Acemoglu et al. (2005)

Clearly inconsistent with geography as cause of development.

Quantifying the Role of Institutions

The idea:

Use variation in institutions across colonies that is "accidental."

Measure the income differences between colonies with accidentally good and accidentally bad institutions.

These income differences are **caused** by institutions.

Details in Acemoglu and Robinson (2001)

- The accidental factor is settler mortality
- Countries with lots of malaria etc could not be settled, so they were exploited

Result: Institutions account for the majority of cross-country income gaps.

Summary

- Ample evidence that institutions are important for Y/L.
  - Colonies provide a natural experiment that "randomly" assigns institutions to countries.
  - Divided countries "prove" that communist institutions reduce incomes.
- Key open questions:
  1. Which institutions are important?
  2. How much do institutions contribute to Y/L gaps?

Review Questions

1. Why is the "reversal of fortunes" evidence so compelling?
2. What could go wrong with the colonial evidence?
   - 2.1 Could you tell a reverse causality story?
   - 2.2 Could you tell an omitted variable story?
3. Why is it so hard to figure out which institutions are important?

Reading

- Jones (2013), ch. 7.
- Jones / Vollrath, Introduction to Economic Growth, 4th ed., ch. 8

Advanced Reading:

- Romer (2011), ch. 3.10.
- Acemoglu et al. (2005) lays out the evidence in favor of institutions as fundamental causes of development.
- Hall and Jones (1999) attempt to quantify the role of institutions using instrumental variables.

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