1 Colonial Origins of Comparative Development (Acemoglu, Johnson, and Robinson, 2001)

1.1 Research Question

Do current institutions cause differences in income per capita across countries?

1.2 Empirical Challenges of the OLS framework

We are interested in estimating the causal effect of institutional quality on economic performance:

$$Y_i = \alpha + \beta \, \text{INST}_i + \gamma X_i + u_i \tag{1}$$

- Y_i: Log GDP per capita (1995)
- INST_i: Institutional quality (e.g., expropriation risk index)
- X_i: Control variables (e.g., geography, continent dummies)
- u_i: Unobserved determinants of income

Key identification assumption: ,institutions must be *exogenous*.
But: This condition is likely violated. $\Rightarrow$ OLS estimates of β are biased due to endogeneity.

Sources of Endogeneity

1. **Simultaneity:** Richer countries may develop better institutions (reverse causality).
2. **Omitted Variables:** Geography, history, culture, legal origin, etc., affect both institutions and income (easy to find stuff that goes in the same direction)
3. **Measurement Error:** Institutional quality may be mismeasured:

   - Analysts may rate institutions more favorably in richer countries (bias).
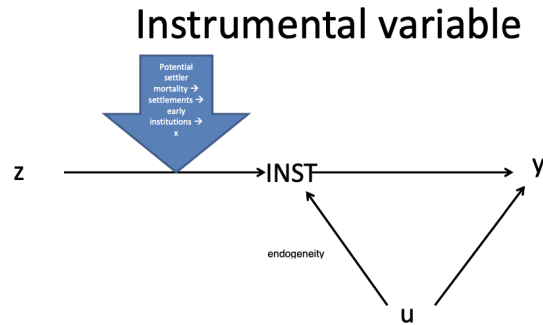   - Classical measurement error in INST $\Rightarrow$ attenuation bias.

$\Rightarrow$ 1.3a upward bias, 3b downward bias!

1.3 Instrumental Variable (IV) Strategy (2SLS)

Main idea: Use *European settler mortality rates (1600s–1800s)* as an instrument for current institutional quality (property rights institions)
Variables:

- **Z (instrument):** Log of annualized settler mortality rates (per 1,000) during 1800
- **X (endogenous regressor):** Institutional quality: *Risk of expropriation* index (avg. 1985–1995, 0 = no protection, 10 = full protection)
- **Controls:** Latitude, Africa/Asia dummies, continent fixed effects, etc. Robustness with extra controls: 1) colonizer dummy, legal origin, religious fraction, 2) temperature and humidity variables, 3) natural resources and soil quality, landlocked? 3) ethno- linguistic fragmentation
- **Y (outcome):** Log GDP per capita in 1995, 4) malaria, life expectancy and infant mortality.

Instrumental variable

Causal chain: (Z) ⇒ Inst past ⇒ Inst today ⇒ (Y)

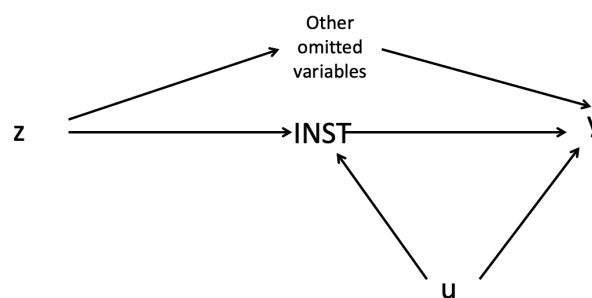High mortality ⇒ Few settlers ⇒ Extractive institutions ⇒ Bad institutions today ⇒ Low income today

1.4 Why Settler Mortality is a Valid Instrument

Relevance: strong firs stage ==mortality rate== **⇒ type of settlemnt ⇒ past insituttions ⇒** ==current isntituions==

- Low mortality ⇒ Euroepans settles ⇒ europeans had to live there, hence developed inclusive institutions (e.g., USA, Australia) = Strong private property rights' protection and constraints to government and elites' power
- High mortality (unfavourable environemnt for settlment) ⇒ extractive institutions (e.g., Congo)
- persistency of past isntituion to present instituiosn compeltes ther elevanc eof the isntrument. Persistency is due to: Costs of institutional changes + opposition of interest's groups.

Exclusion restriction:

- Mortality mainly due to *malaria, yellow fever*, which killed Europeans, may have a storong negative impact on economic performance BUT locals were immune to such deseases!
- Other georgrapical fatcos may be correlated to both settlers mortlaity and current performance, but w econtrol for them, and actually the distance from equator and africa dummy are not significant
- olonizercountry(culture),legalorigin,climate,religion, geography, natural resources, soil quality, ethnolinguistic fragmentation, diseases. All controlled.

Concerns: The idea is that settlers presence did not just institutions!

- Links between(ex-)colonies and colonizing countries Trade, capital, ideas
  - Colonial historical legacies influence people's views, attitudes, incentives, and decisions (religion), culture
  - Impoverishment of natural resources and human capital(e.g. slavery → Effects on culture/ social capital (e.g. trust))
  - Infrastructures (road and railroad investments)

- Glaeser et al. (2004): Settlers, BESIDES THEIR INSTITUTIONS, their know-how and human capital, rather than just constraints on the executive. Education is the most persistent feature! Cannot we test this? They did: test instrument -¿ education past -¿ education today. They formally show the exclusion restriction is not satisfied, the point here is that the channel is not institutions!

1.5 Main Results

- **OLS:** Positive correlation between institutions and income (but biased). Institutions have a causal, large, robust effect on income.
- **IV:** > OLS due to measurement error in institutional variable, unexpected, but found attenuation bias. Latitude no more significant (and wrong signed). For the authors, evidence that previous studies were capturing spurious correlation. Similar result for Africa dummy

2 Follow-up: Acemoglu and Johnson (2005)

2.1 Research goal:

Disentangle the effects of two types of economic institutions on development outcomes:

- **Property rights institutions** — protection against expropriation, limits on executive power. Endogenous variables: 1) contraints on the executive, 2) protection again governmet exporpriation, 3) private property protection
- **Contracting institutions** — efficiency and cost of enforcing private contracts. Endogenous variables: 1) Number of formal legal procedures necessary to resolve a simple case of collecting on an unpaid check, 2) Procedural complexity in resolving the case of an unpaid commercial debt, 3) Number of procedures necessary to resolve a court case involving the same commercial debt

Both isntituiosn influence the costs and benefits of starting a new business. Which is more important for growth?

2.2 Empirical strategy:

Two-stage least squares (2SLS) estimation, separately instrumenting each institutional type.
Instruments (Z):

Full Instrumental Variables Structure

Instruments (Z)	Endogenous (Independent) Variables (X)	Outcome Variables (Y)
Settler Mortality	→ **Property Rights Institutions** (e.g., constraint on executive)	→ **GDP per Capita** (log, PPP, 1995)
		→ **Investment-to-GDP Ratio** (1990s average)
		→ **Private Credit-to-GDP Ratio** (1998)
		→ **Stock Market Capitalization-to-GDP Ratio** (1990-95)
Population Density in 1500	→ **Property Rights Institutions** (same as above)	(Same 4 outcomes)
Legal Origin (English Common Law dummy)	→ **Contracting Institutions** (legal formalism, complexity)	(Same 4 outcomes)

Instrument: Population density Instrument

Idea = higher density discourages settler. The proposed channel is exactly the same as before! Same issues as before for exclusion restriction.

Instrument: Legal Origin

- **Instrument:** *Legal origin* of the ex-colony

  - **Civil-law (French):** legal system where core principles are codified into a referable system, which serves as the primary source of law

  - **Common-law (English):** body of law derived from judicial decisions of courts

- In ex-colonies, the legal system is **exogenously determined** by the juridical tradition of the settler country

- Better *contracting institutions* (today) are associated with the **common-law** system

  - Less formal rules and fewer procedural constraints

2.3   Key findings:

- **Property rights institutions** strongly affect *growth*, *investment*, and *financial development*.

- **Contracting institutions** mainly shape the *characteristics* of the financial system (less developed stock market). Idea: Individuals may react to weak contracting institutions thorugh eg private contracts to solev the TH game, however such solutions are not feasible to correct for weaknesses of the proeprty right instiuttions