Institutions and Development

- The idea that institutions are an important aspect of economic development is far from new

- Douglass North won his Nobel prize in economics largely on the back of his work on institutions

- He defines institutions as

- "the humanly devised constraints that shape social interaction"

- or simply "the rules of the game"

- Institutions have two main functions
  - facilitating cooperation between private actors – facilitates gains from trade
  - restraining powerful actors – especially predatory governments

- But even with this precise definition (much more precise than what some people use) there is still a lot of vagueness associated with the term

- There are at least four aspects of institutions:
  - economic institutions
  - political institutions
  - cultural/social institutions
  - legal institutions

Economic Institutions

- Markets
  - integration
  - access
  - enforcement
- Trade Unions
- Trade-Organizations

- Cartels
- Structures of property rights – communal versus individualistic
- Systems of landownership

Political Institutions

- Electoral system
- Legislative procedures
- Extent of centralization
- Party Systems
- "Veto" players

Cultural/Social Institutions

- Social networks
- Social norms
- Marriage patterns
- Religious adherence
- Gender relations

Legal Institutions

- Courts

- Legal codes – civil law versus common law

- Clearly a huge number of different issues are involved in thinking about this diverse array of institutions.

- In this lecture, we will try to look at two things
  - why do we think institutions affect aggregate economic performance?
  - what does the evidence look like?

The Attraction of the institutional approach

- Explains persistence and importance of history – it is much harder to change institutions than changing policies.

- Explains why some societies who have tried to adopt certain kinds of policy paths have failed.

- But does it lead to some kind of historical determinism?

Social capital

- Some of the ideas that we are discussing are sometimes debated under the heading of social capital.

- Observe that there is no reason to think that all forms of cooperation are necessarily good
  - e.g. mafia enforcement

Property Rights and Development

- A central idea in economics is that stable property rights are an important part having a well-functioning economy
- There have been many schemes in developing countries to improve such rights
- The dificulty of establishing and enforcing property rights is the weakness of political and legal systems
- Many actors therefore operate in situations with weak protection of property rights.

Field

- Looks at the impact of granting property rights to squatters in urban Peru – across eight cities

- In 1991 an NGO embarked on a titling program for squatters

- She looks at the impact of land titling on labor supply – previously people had to stay home to guard their property.

Data and Method

- 2750 households in eight cities
- She exploits variation in the timing of the titling program
- Aim is to investigate whether having a title changes labour supply

- Basic regression:

$$L_i = \gamma s_i + \beta p_i + \theta \left(s_i * p_i \right) + controls + \varepsilon_i$$

  where L_i is labour supply, $s_i = 1$ if household is a squatter, $p_i = 1$ if household i has benefitted from the program.

- She also uses program periods as p_i in some regressions.

Table 4: Total Household Weekly Hours in Labor Force

(N=2379)	(1)	(2)	(3)	(4)	(5) *no demog. controls*
	*(all regressions include demographic controls, city*program years, and city*initial rights)*				
Number working-age members	12.03 (3.37)**	12.10 (3.37)**	12.16 (3.36)**	9.25 (6.45)	18.83 (4.934)**
Squatter*program	13.45 (6.49)*	-12.76 (12.12)	9.63 (16.69)	58.33 (26.04)*	55.10 (27.19)*
Squatter*program periods		14.5 (5.82)*	15.3 (5.72)**	16.4 (5.37)**	17.3 (6.02)**
Squatter*program* tenure			-1.17 (0.57)*	-1.12 (0.56)*	-1.07 (0.62)
Squatter*program* working-age members				-29.09 (11.66)*	-27.85 (11.89)*
(Squatter*program* working-age members)^2				3.39 (1.31)*	3.13 (1.36)*
Implied program effect: † *N=4, T=15*	*13.45* *(6.49)**	*16.20* *(6.55)**	*22.58* *(7.03)**	*12.27* *(7.98)*	*12.20* *(8.65)*
Implied program effect: N=3, T=15				*17.64* *(6.47)**	*18.13* *(7.04)**
Implied program effect: N=3, T=10			*28.43* *(8.48)**	*23.23* *(7.97)**	*23.51* *(8.52)**

† Implied program effect evaluated at N number of working age HH members, T years of residential tenure and median number of program periods (2).

Public Governance

- There is increasing concern in the development literature with the problem of good governance.

- Good governance has three main dimensions:

- – I. reducing predation
  - * temptation to exproporiate
  - * protection of political and civil liberties

- – II. Efficiency in government
  - * reducing waste in the policy process
  - * selecting Pareto efficient policy

- – III. pursuing broad based social objectives:
  - * limiting corruption
  - * reducing poverty.

Corruption

- Combating corruption has been one of the central themes in the debates about governance

- A key idea is that corruption occurs because of an absence of accountability in government

- Corruption is due to agency problems in government –
  - difficulties of monitoring elected officials and bureaucrats
  - re□ects general lack of transparency in public decision making

Measuring Institutions

- Outcome based measures
  - such as ICRG measures of expropriation risk
  - World Bank government effectiveness measures.
- Input based measures
  - Persson and Tabellini measures of formal political institutions
  - Polity IV

Table 3. Correlations of measures of institutions.

	Log GDP Per Capita (2000)	Executive Constraints (1960–2000)	Expropriation Risk (1982–1997)	Autocracy—Alvarez (1960–1990)	Government Effectiveness (1998–2000)	Judicial Independence (1995)	Constitutional Review (1995)	Plurality (1975–2000)
Executive constraints (1960–2000)	0.7119[a]							
Expropriation risk (1982–1997)	0.7906[a]	0.6378[a]						
Autocracy—Alvarez (1960–1990)	−0.7388[a]	−0.8567[a]	−0.6864[a]					
Government effectiveness (1998–2000)	0.7860[a]	0.6349[a]	0.8297[a]	−0.5908[a]				
Judicial independence (1995)	0.0279	0.3465[a]	0.2629[b]	−0.1907	0.3006[b]			
Constitutional review (1995)	−0.0649	0.1904	0.1189	−0.0278	0.0482	0.2243[c]		
Plurality (1975–2000)	−0.2620[a]	−0.3570[a]	−0.1918[b]	0.2472[a]	−0.2044[a]	−0.0992	0.0040	
Proportional representation (1975–2000)	0.2947[a]	0.3158[a]	0.2172[b]	−0.2151[b]	0.2052[b]	−0.1684	0.1284	−0.6118[a]

Notes: [a]Significant at 1 percent.
[b]Significant at 5 percent.
[c]Significant at 10 percent.

Institutions and Income Per Capita

- These institutional measures can be correlated with income per capita

Table 4. Economic growth, political institutions and human capital.

	Dependent Variable is Growth of GDP per capita 1960–2000							
Log GDP per capita (1960)	−0.0114[a]	−0.0136[a]	−0.0112[a]	−0.0122[a]	−0.0141[a]	−0.0130[a]	−0.0090[a]	−0.0105[a]
	(0.0033)	(0.0033)	(0.0033)	(0.0033)	(0.0037)	(0.0037)	(0.0034)	(0.0036)
Log years of schooling (1960)	0.0060[b]	0.0076[a]	0.0063[b]	0.0060[b]	0.0077[b]	0.0073[b]	0.0073[a]	0.0080[a]
	(0.0025)	(0.0024)	(0.0024)	(0.0023)	(0.0032)	(0.0031)	(0.0025)	(0.0026)
Share of population living in temperate zone (1995)	0.0175[a]	0.0132[a]	0.0179[a]	0.0104[c]	0.0242[a]	0.0231[a]	0.0175[a]	0.0184[a]
	(0.0049)	(0.0041)	(0.0046)	(0.0055)	(0.0049)	(0.0047)	(0.0050)	(0.0052)
Executive constraints (1960–2000)	0.0021[b]							
	(0.0008)							
Expropriation risk (1982–1997)		0.0040[a]						
		(0.0014)						
Autocracy–Alvarez (1960–1990)			−0.0060[c]					
			(0.0032)					
Government effectiveness (1998–2000)				0.0075[a]				
				(0.0024)				
Judicial independence (1995)					−0.0041			
					(0.0057)			
Constitutional review (1995)						0.0047		
						(0.0064)		
Plurality (1975–2000)							0.0010	
							(0.0027)	
Proportional representation (1975–2000)								0.0019
								(0.0031)
Observations	71	69	71	71	54	54	71	70
R^2	0.44	0.56	0.44	0.48	0.45	0.45	0.41	0.44

Notes: The table shows OLS regressions for the cross-section of countries. The dependent variable in all specifications is the growth of GDP per capita for the period 1960–2000. The specifications include a constant but we do not report the estimates in the table. Robust standard errors are shown in parentheses. All variables are defined in the appendix.

[a]Significant at 1 percent.

[b]Significant at 5 percent.

[c]Significant at 10 percent.

Acemoglu Johnson Robinson

- At the forefront of recent arguments that institutions matter at the macro level

- They make an intriguing observation
  - If we measure productivity in terms of who was rich in 1500, then there has been a "reversal of fortune"
  - They argue that understanding colonial history and institutional transformation is the key.
  - They argue that there is exogenous variation in where colonizers chose to settle in the world

- Some countries became neo-Europes (Australia, New Zealand, United States, Canada)
  - These were settlers could live
  - Thus settler mortality is a measure of the hospitability of the climate and thence how institutions got created.

Their Approach

- Suppose that:

$$y_s = \alpha I_s + \varepsilon_s$$

  where I_s is some measure of "good institutions"

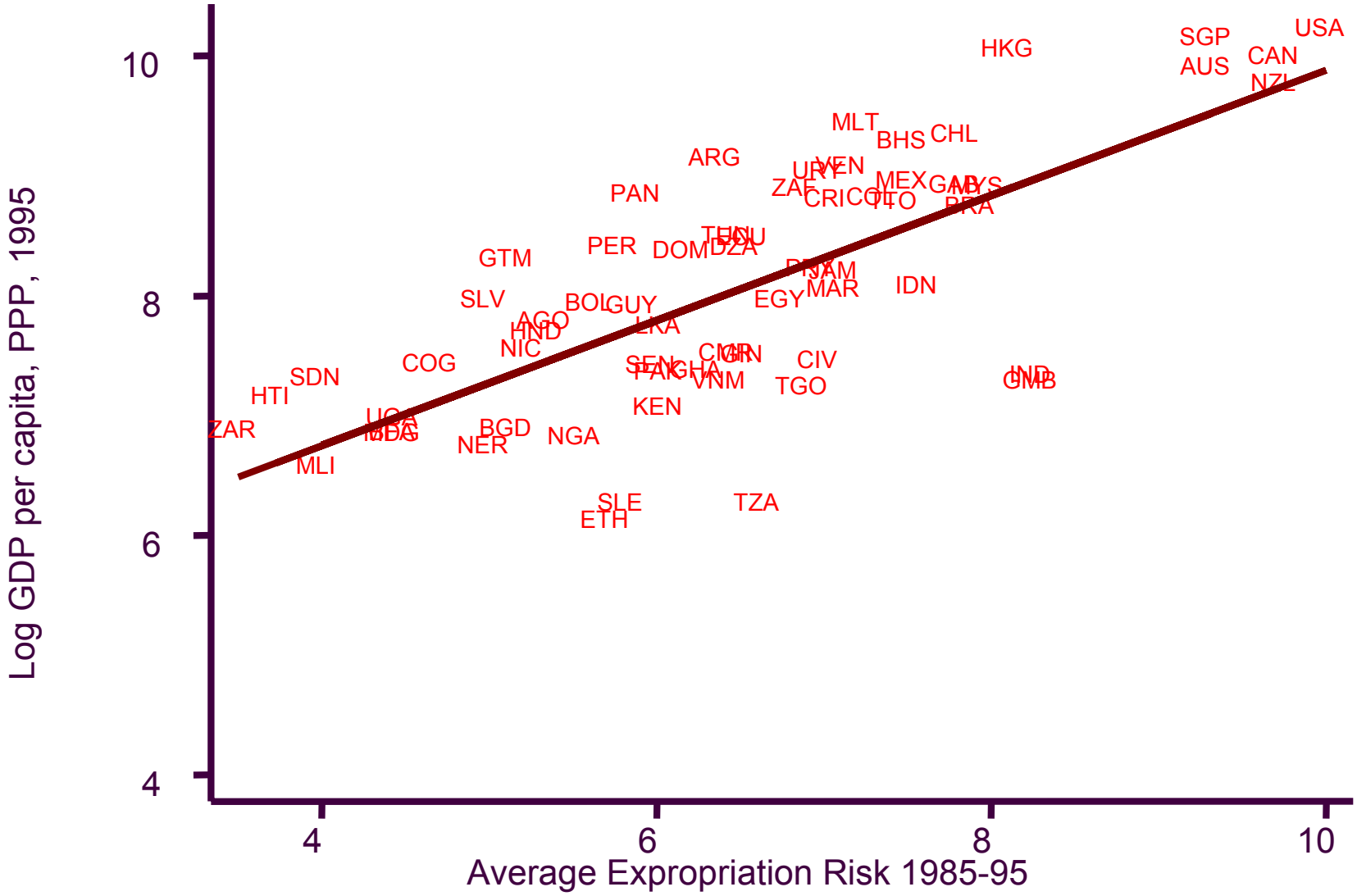
- They use the ICRG's measure of extent of expropriation (need exact definition)

- They then posit that:

$$I_s = \beta m_s + \eta_s$$

  where m_s is uncorrelated with y_s except through its effect on I_s.

- Then m_s is a valid instrument for I_s.


Log GDP per capita, PPP, 1995
10
8
6
4
Average Expropriation Risk 1985-95
4
6
8
10
HKG
SGP
USA
AUS
CAN
NZL
MLT
BHS
CHL
ARG
PAN
ZAF
CRI
MEX
PER
DOM
GTM
SLV
BOL
GUY
EGY
MAR
IDN
AGO
HND
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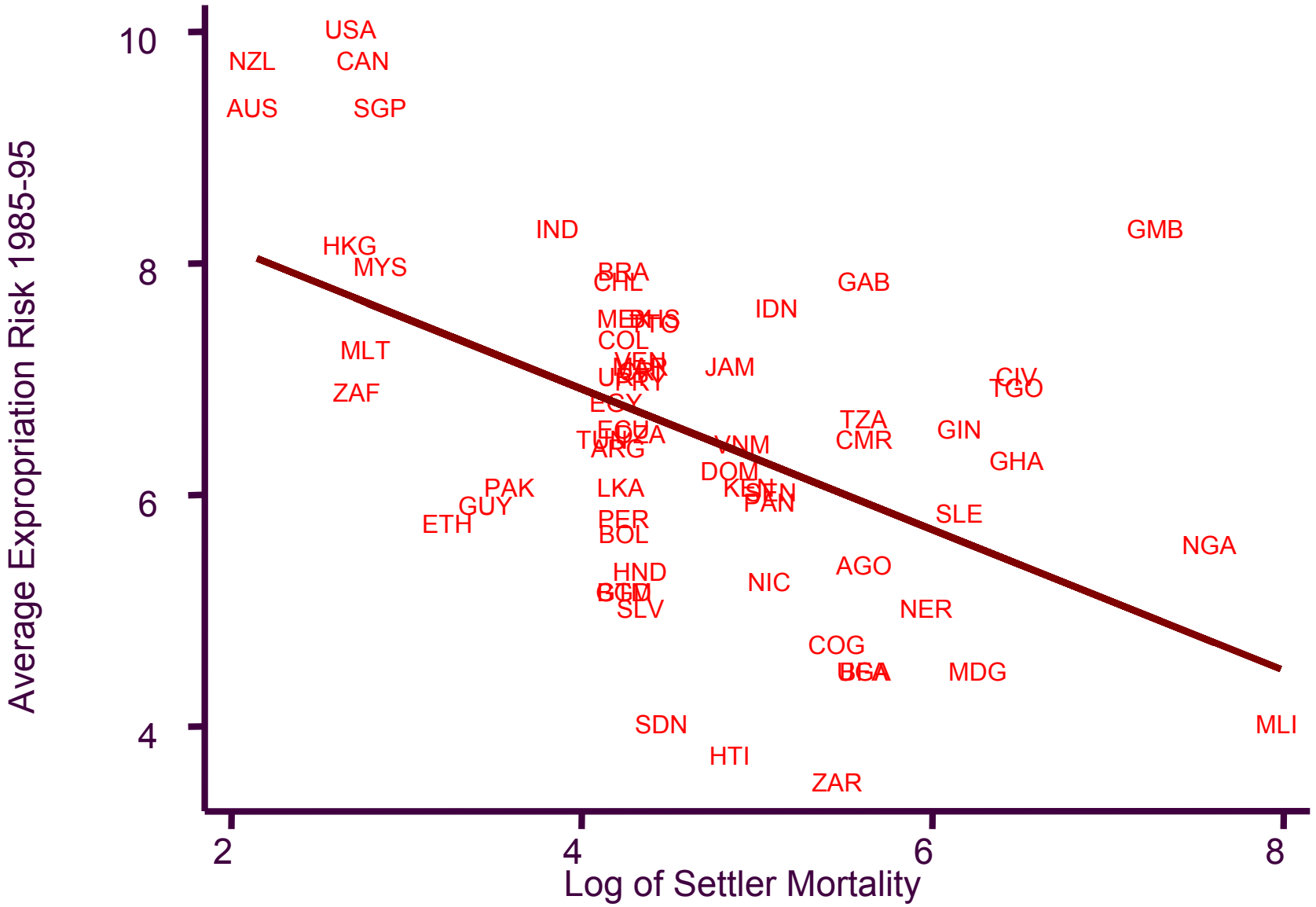

Average Expropriation Risk 1985-95
10
8
6
4
2
4
6
8
Log of Settler Mortality
USA
NZL
CAN
AUS
SGP
HKG
MYS
IND
GMB
MLT
ZAF
JAM
GAB
IDN
TGO
TZA
GIN
CMR
GHA
PAK
LKA
GUY
ETH
PER
BOL
SLE
NGA
AGO
HND
NIC
SLV
NER
COG
MDG
SDN
MLI
HTI
ZAR

First stage

							(0.85)	(1.0)	
Panel B: First-Stage for Average Protection against Expropriation Risk in 1985-95									
Log European Settler Mortality	-0.61	-0.51	-0.39	-0.39	-1.20	-1.10	-0.43	-0.34	-0.63
	(0.13)	(0.14)	(0.13)	(0.14)	(0.22)	(0.24)	(0.17)	(0.18)	(0.13)
Latitude		2.00		-0.11		0.99		2.00	
		(1.34)		(1.50)		(1.43)		(1.40)	
Asia Dummy							0.33	0.47	
							(0.49)	(0.50)	
Africa Dummy							-0.27	-0.26	
							(0.41)	(0.41)	
"Other" Continent Dummy							1.24	1.1	
							(0.84)	(0.84)	
R-Squared	0.27	0.30	0.13	0.13	0.47	0.47	0.30	0.33	0.28
Panel C: Ordinary Least Squares									
Average Protection Against	0.52	0.47	0.49	0.47	0.48	0.47	0.42	0.40	0.46
Expropriation Risk 1985-1995	(0.06)	(0.06)	(0.08)	(0.07)	(0.07)	(0.07)	(0.06)	(0.06)	(0.06)
Number of Observations	64	64	60	60	37	37	64	64	61

The dependent variable in columns 1-8 is log GDP per capita in 1995, PPP basis. The dependent variable in column 9 is log output per worker, from Hall and Jones (1999). "Average Protection Against Expropriation Risk 1985-95" is measured on a scale from 0 to 10, where a higher score means more protection against risk of expropriation of investment by the government, from Political Risk Services. Panel A reports the two stage least squares estimates, instrumenting for protection against expropriation risk using log settler mortality; Panel B reports the corresponding first stage. Panel C reports the coefficient from an OLS regression of the dependent variable against average protection against expropriation risk. Standard errors are in parentheses. In regressions with continent dummies, the dummy for America is omitted. See Appendix Table A1 for more detailed variable descriptions and sources.

Second Stage

Table 4
IV Regressions of log GDP per capita

	Base Sample (1)	Base Sample (2)	Base Sample without neo-Europes (3)	Base Sample without neo-Europes (4)	Base Sample without Africa (5)	Base Sample without Africa (6)	Base Sample with Continent Dummies (7)	Base Sample with Continent Dummies (8)	Base Sample, dep. var. is log output per worker (9)
Panel A: Two Stage Least Squares									
Average Protection Against Expropriation Risk 1985-1995	0.94 (0.16)	1.00 (0.22)	1.28 (0.36)	1.21 (0.35)	0.58 (0.10)	0.58 (0.12)	0.98 (0.30)	1.10 (0.46)	0.98 (0.17)
Latitude		-0.65 (1.34)		0.94 (1.46)		0.04 (0.84)		-1.20 (1.8)	
Asia Dummy							-0.92 (0.40)	-1.10 (0.52)	
Africa Dummy							-0.46 (0.36)	-0.44 (0.42)	
"Other" Continent Dummy							-0.94 (0.85)	-0.99 (1.0)	

- This work has created an enormous debate among economists.

- Key issues:
  - Is m_s a valid instrument?
  - Can we really be sure that this is a story about institutions rather than other influences on economic development (such as human capital)

GFLS (2004)

- They put a lot of weight on constraints as institutions.
- But they are keen on the view that it is human capital drives institutional quality
- They take issue with AJR on a number of fronts.
  - settler mortality is not correlated with constitutional measures of institutions
  - instrument is correlated with modern disease environment
  - institutions are strongly correlated with human capital

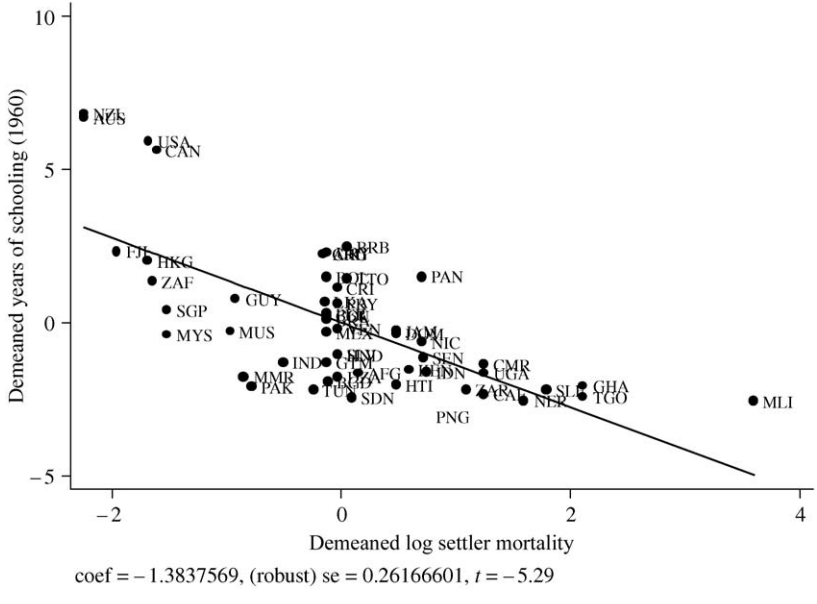


Figure 2. Years of schooling (1960) and log settler mortality.

- The contrast two views
  - institutions lead to accumulation of physical and human capital (Montesquieu)
  - human and physical capital are preconditions to democracy which secures property rights (Lipset)

- They argue that settler mortality could equally well represent human capital as institutions.

Table 11. Economic development, instrumental variable regressions.

Panel A: Second-stage regressions

	Dependent variable is log GDP per capita in 2000	
	(1)	(2)
Years of schooling (1960–2000)	0.7894[a]	0.4836[b]
	(0.2753)	(0.1875)
Executive constraints (1960–2000)	− 0.3432	− 0.2965
	(0.2577)	(0.2410)
Share of population living in temperate zone (1995)	− 1.6969	− 0.0863
	(1.2053)	(0.7714)
Observations	47	55
R^2	0.31	0.5

Panel B: First-stage regressions

	Dependent variables

Panel B: First-stage regressions

	Dependent variables			
	Executive Constraints (1960–2000)	Years of Schooling (1960–2000)	Executive Constraints (1960–2000)	Years of Schooling (1960–2000)
Share of population living in temperate zone (1995)	−0.1195	3.4975[a]	−0.0353	2.8397[a]
	(0.7202)	(0.8044)	(0.8359)	(0.8933)
Log settler mortality	−0.8212[a]	−1.0183[a]		
	(0.2053)	(0.2293)		
Log population density in 1,500			−0.3737[b]	−0.6140[a]
			(0.1582)	(0.1691)
French legal origin	−1.4124[a]	−0.3770	−1.1988[b]	−0.5329
	(0.4258)	(0.4757)	(0.4538)	(0.4850)
Observations	47	47	55	55
R^2	0.53	0.70	0.25	0.55
F-Test for excluded instruments	17.23		4.70	
Correlation of predicted values of executive constraints and years of schooling	0.8182		0.8163	

Notes: The table shows instrumental variables regressions for the cross-section of countries. Panel A reports the second-stage estimates from instrumental variables regressions with first-stage estimates shown in Panel B. The dependent variable in both second-stage specifications is the log of GDP per capita in 2000. Panel B reports the first-stage estimates for two sets of instruments. The first specification instruments executive constraints and years of schooling using the log of settler mortality and French legal origin. The second specification instruments executive constraints and years of schooling using the log of population density in 1500 and French legal origin. The specifications in both stages include a constant but we do not report the estimates in the table. Robust standard errors are reported in parentheses. All variables are defined in the appendix.

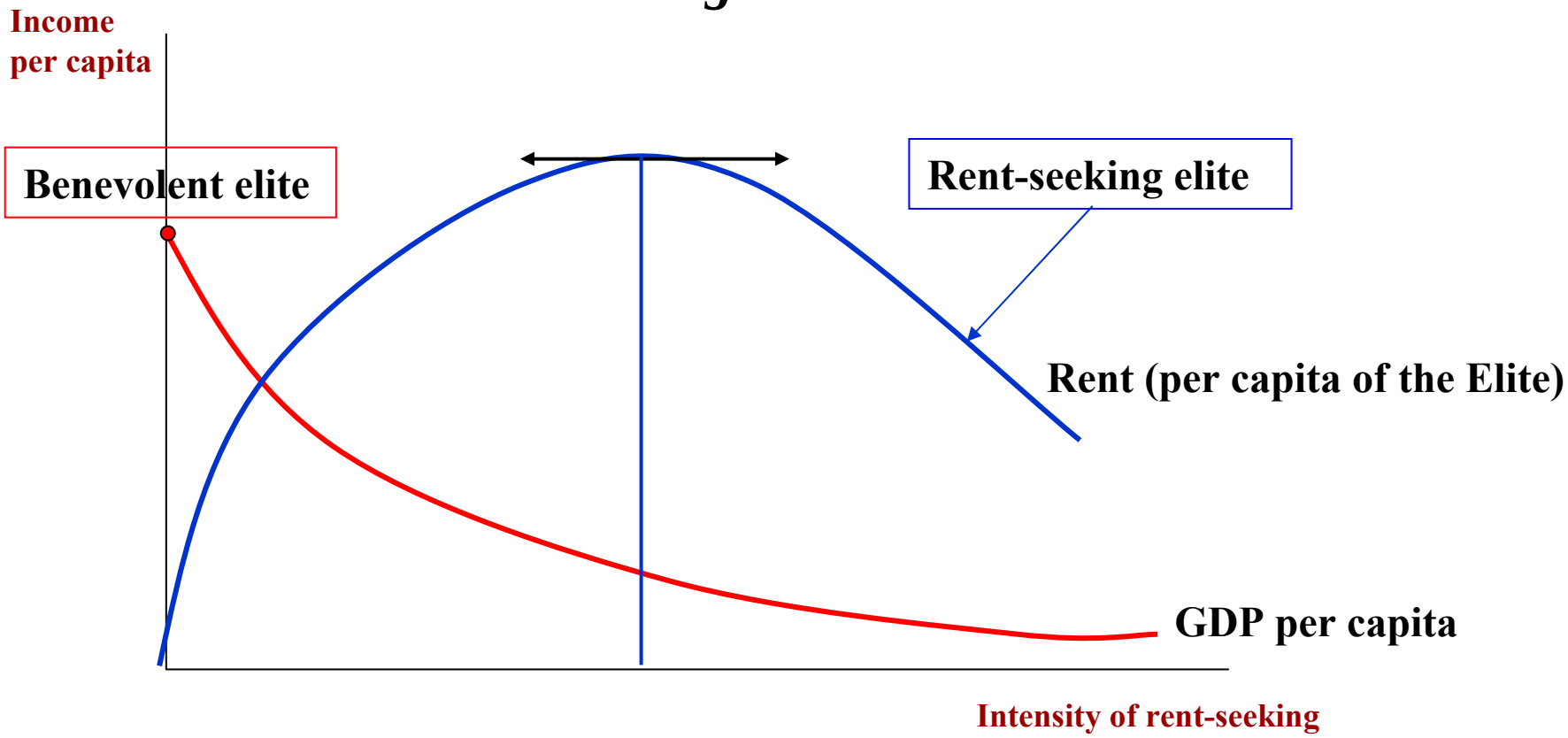
[a]Significant at 1 percent

- Their conclusion
  - institutional opportunities are shaped by social and human capital

Institutions, Political Power and Inequality

Economic Impact of Elite Behavior

The rent-seeking and benevolent élites



PARTICIPATION

Education and Participation
Bourguignon and Verdier 2000

- Two crucial assumptions

  - Electoral participation depends on individual's level of education

  - Technological externality stemming from average education level

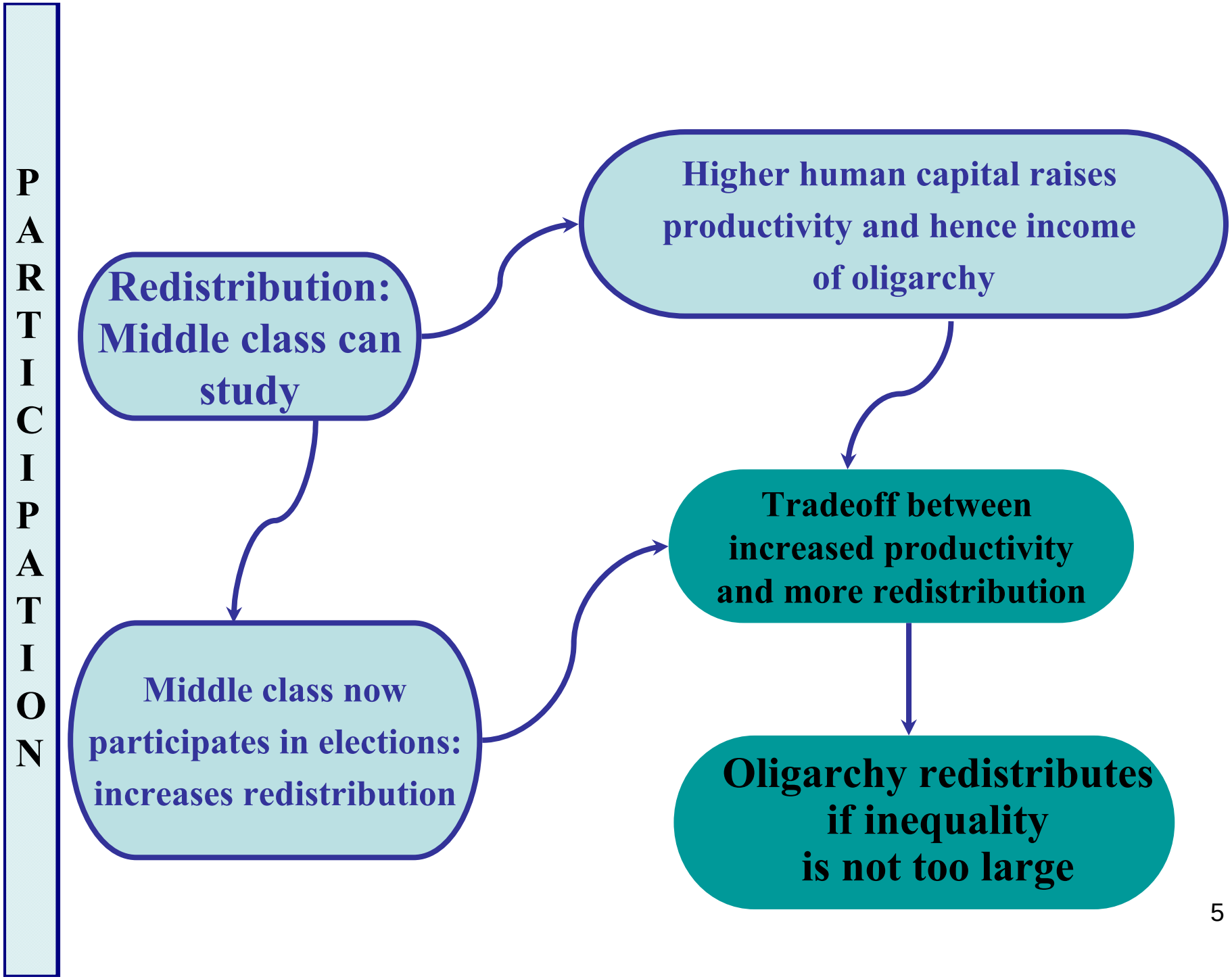
- Income groups

  - Oligarchy: educated & make political decisions

  - Uneducated poor

- Redistribution:

  - democratically chosen

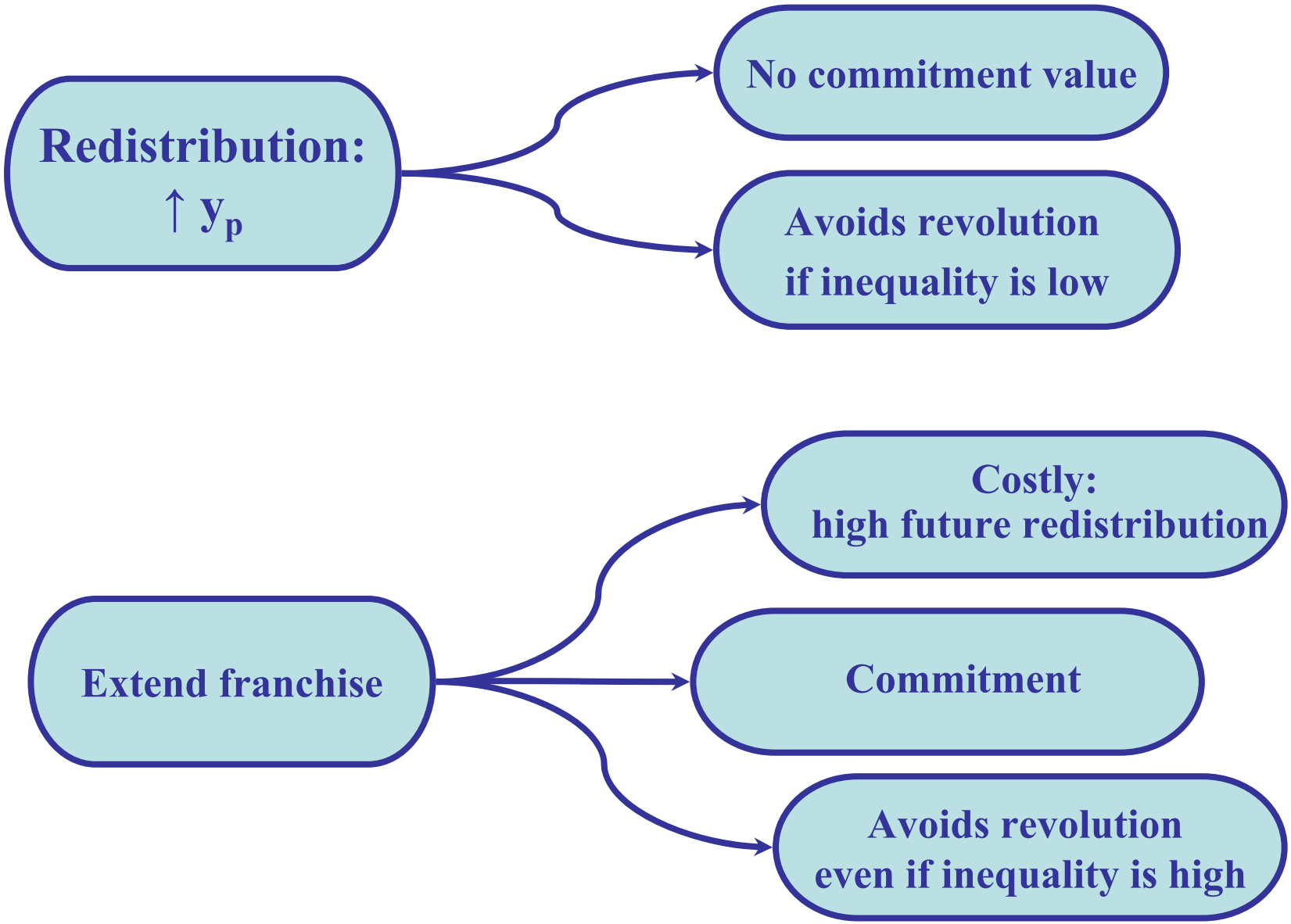

PARTICIPATION
Redistribution: Middle class can study
Higher human capital raises productivity and hence income of oligarchy
Middle class now participates in elections: increases redistribution
Tradeoff between increased productivity and more redistribution
Oligarchy redistributes if inequality is not too large

REVOLUION

Inequality, Revolution and Franchise
Acemoglu and Robinson 2000

- Two groups
  - Elite: rich, has political power
  - Poor: no political power
- The elite
  - sets a redistributive tax each period
  - can decide to extend franchise
- The poor
  - can undertake risky revolution
  - gain more from revolution when inequality is high

FRANCHISE


Redistribution:
↑ y_p
No commitment value
Avoids revolution
if inequality is low
Extend franchise
Costly:
high future redistribution
Commitment
Avoids revolution
even if inequality is high

EVIDENCE

Evidence : Development and Democratization

- Predictions

  - Unequal countries are more likely to extend franchise: eg. Britain and France in mid 19th c.

  - Equal countries are more likely to redistribute: eg Germany

- Good at explaining European historical evidence but not experience of l.d.c.s in second half of the 20th c.

  - Many formal democracies perform badly in terms of output and de facto institutions

EVIDENCE

Evidence : Development and Democratization

- Correlation income-democracy
  - Which way does causation go?
  - Should we think about other institutions?
  - Corruption?

- Does education cause institutions or institutions cause education?
  - link between political institutions and education is hard to establish despite substantial microevidence (Glaeser et al. 2004, Acemoglu et al. 2005)

CORRUPTION

Education, Corruption and the Distribution of Income

Eicher, García Peñalosa and van Ypersele 2009

- Key element: more educated electorates are better at identifying corrupt politicians
- Substantial evidence (see Galston for a survey)
- More educated individuals
  - better identify the quality of institutions, politicians, and policies
  - more likely to rely on policy evaluation in their voting behavior rather than character impressions

Production, Education and Bequests

- Galor and Zeira 1993
- Education determines aggregate output
- No capital market and fixed cost of education → only the rich can study
- OLG model: parents leave financial bequests → intertemporal bequest function linking the inheritance received and the bequest left

New

- There is income taxation to finance a public good (infrastructure)

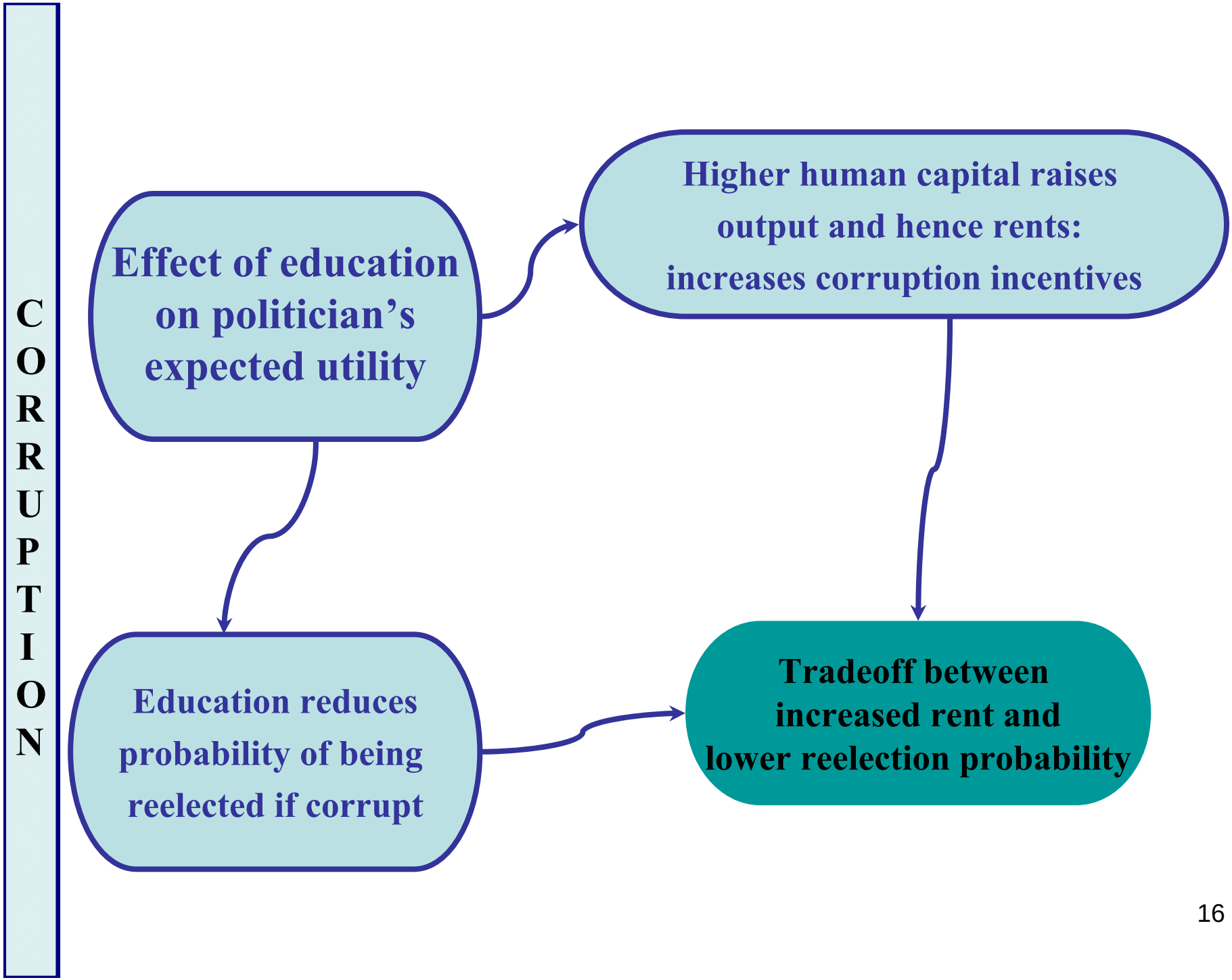
Political party

- Cost of public good c unkown to voters
- Politician sets the tax rate each period
  - Honest $\tau^c = c$ → no rent
  - Corrupt $\tau^* > \tau^c$ → rent π
- Can pass constitutional reform

  - disclose c
- Can subsidize education at rate s
- Can pass constitutional reform and disclose c
- There are elections each period

Probability of reelection and party utility

- If a party is proven to be corrupt → not reelected
- The probability of being caught is increasing in the number of educated individuals
- Probability of reelection:
  - One for honest politicians
  - Less than one and decreasing in education for dishonest
- Party payoffs depend on
  - Size of rents
  - Probability of reelection (ego rent)


CORRUPTION
Effect of education on politician's expected utility
Higher human capital raises output and hence rents: increases corruption incentives
Education reduces probability of being reelected if corrupt
Tradeoff between increased rent and lower reelection probability

Three strategies

- *Always corrupt*: cost is that party may get caught and outsted
- *Corruption followed by reform*: reduces corruption rents but increases probability of reelection (and hence expected ego rents)
- *Education subsidies-corruption-reform*: increases size of corruption rent but has a cost as the subsidy has to be paid

- Crucial parameter

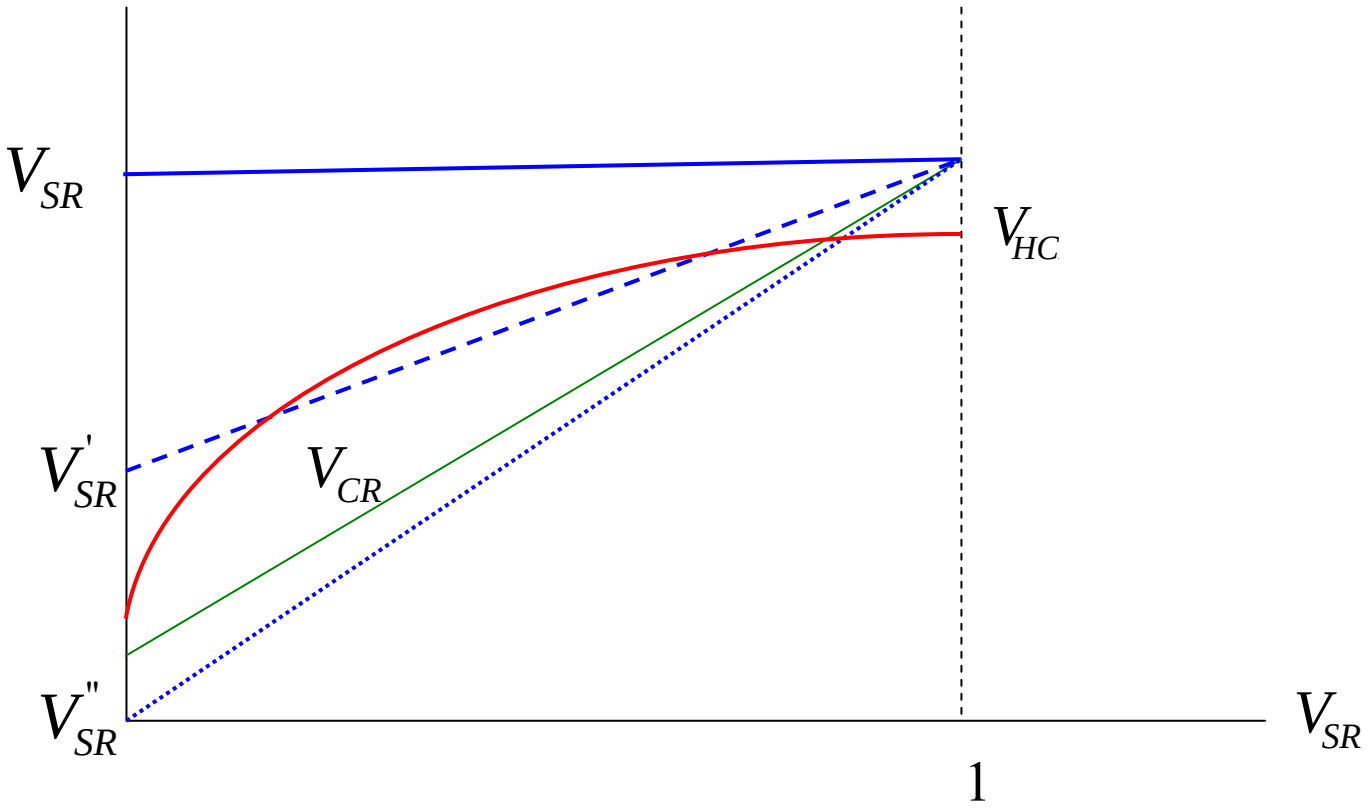
  Initial inequality

  It determines whether an education subsidy is very costly or not, since

$$s_t = e - x_{u,t-1}$$

EQUILIBRIUM STRATEGIES

Political strategies



CORRUPTION

Implications I

1. High-education countries can escape from corruption
2. Middle-education countries remain in a poverty trap with corrupt politicians
3. Low-education countries can only escape the poverty trap if they are sufficiently equal

CORRUPTION

Implications II

4. Non-monotonic relationship between education and corruption/institutions at aggregate level despite micro-level links

5. Path to development varies
   - Institution-led development : more likely in unequal societies and for high human capital
   - Education-led development : only takes place in highly equal economies

4. Causality: Do institutions increase education or does education lead to good institutions?

Inherited Trust and Growth

Models we have discussed indicate that institutions affect growth but also are endogenous and determined by various factors

Can we identify the causal effect of institutions and growth?
AJR use settler mortality: criticised

In a recent paper Algan and Cahuc (AER 2010) try to uncover the causal effect of *trust* on growth

Focus on the inherited component of trust

Empirical strategy

Step 1. Show that inherited trust of descendants of US-immigrants is influenced by the country of origin and the timing of arrival

Implication: Use the inherited trust of descendants of US-immigrants as a time-varying measure of inherited trust in their country of origin

Step 2: Identify the specific impact of inherited trust on growth relative to other traditional candidates

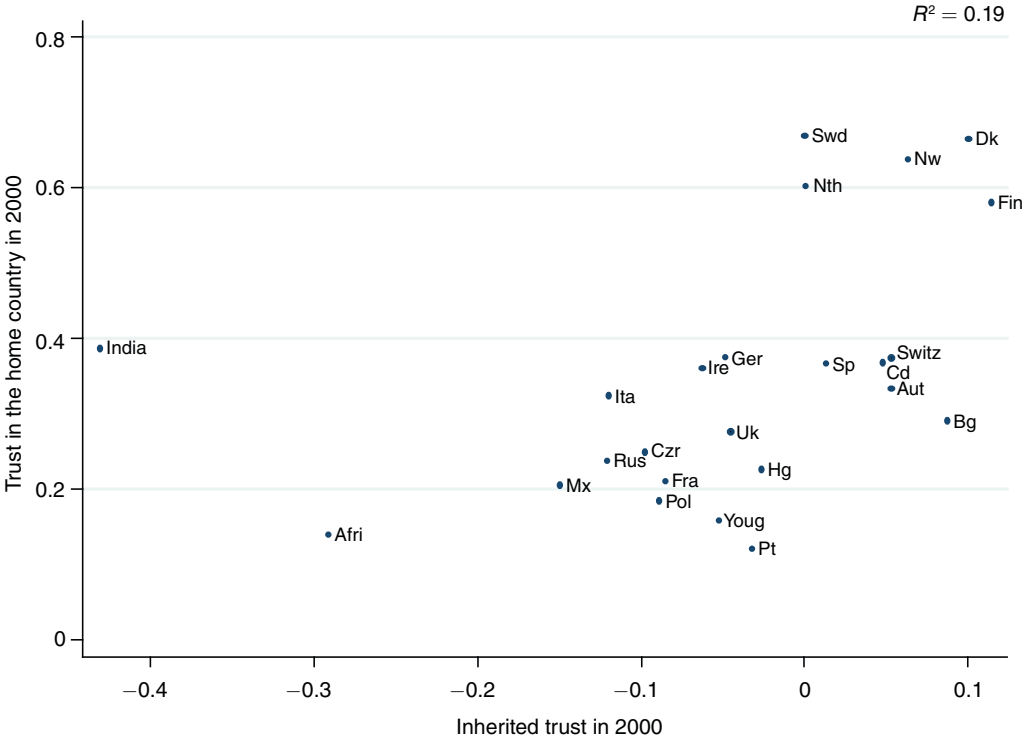


FIGURE 1. CORRELATION BETWEEN TRUST IN THE HOME COUNTRY IN 2000 AND INHERITED TRUST OF DESCENDANTS OF US IMMIGRANTS FOR THE PERIOD 2000

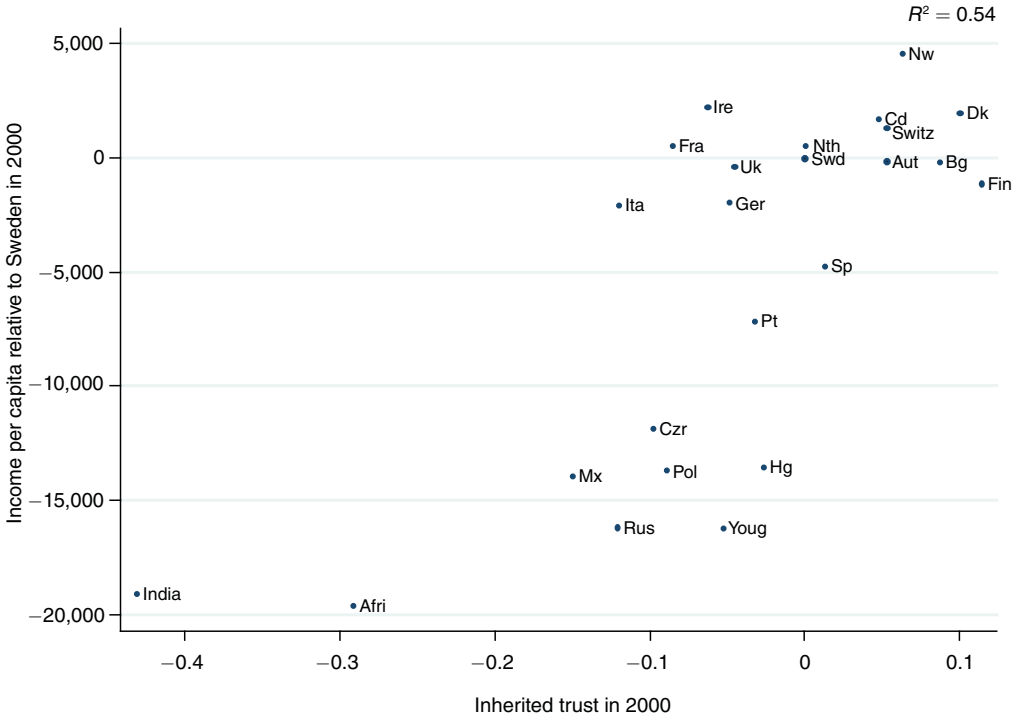


FIGURE 3. CORRELATION BETWEEN INCOME PER CAPITA AND INHERITED TRUST IN 2000, RELATIVE TO SWEDEN

Sources: Maddison database and GSS 1977–2004.

TABLE 5—INHERITED TRUST AND INCOME PER CAPITA IN 1935 AND 2000: CROSS-COUNTRY REGRESSION

	Dependent variable: Income per capita in 1935 and 2000			
	(1)	(2)	(3)	(4)
Inherited trust in 1935 and 2000	35,952.13*** (6,811.83)	18,389.59*** (4,811.88)	18,601.70*** (5,708.99)	20,030.74*** (6,966.35)
Initial income per capita 1870 and 1930		3.83*** (0.45)	3.84*** (0.53)	3.64*** (0.54)
Political institutions in 1930 and 2000			1.45 (74.73)	32.50 (82.03)
Outliers				Africa, India excluded
R^2	0.37	0.75	0.69	0.63
Observations	48	48	46	44

Notes: OLS regressions. The dependent variable is the GDP per capita in the source countries in 1935 and 2000, relative to Sweden. Data come from Maddison. Inherited trust of US immigrants from the source countries for the periods 1935 and 2000 is estimated relative to the trust inherited by US immigrants with Swedish ancestors for those periods. The coefficients of inherited trust come from the regressions on the GSS. Political institutions are measured by the index Polity2 from the Polity IV database. A higher level indicates more democratic institutions. Institutions in the source countries are measured relative to Sweden.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

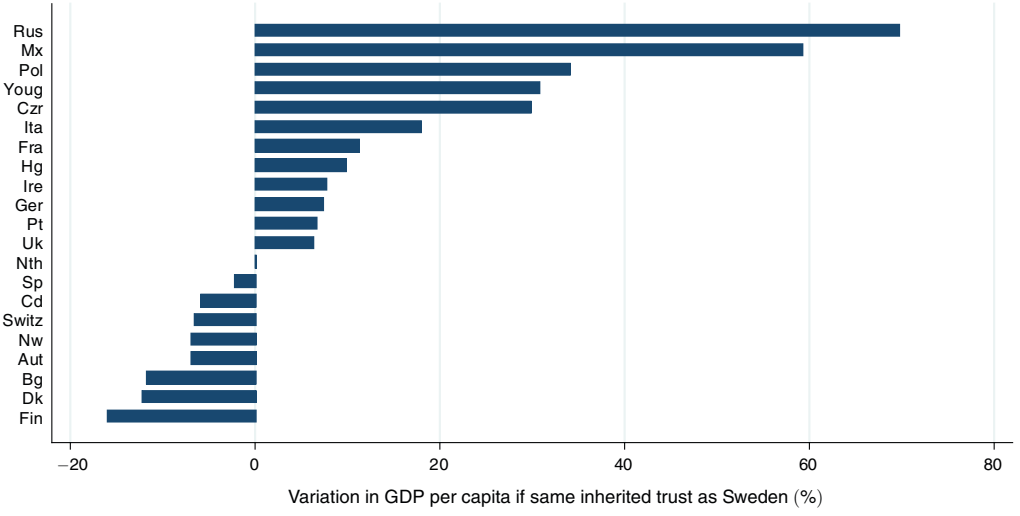


FIGURE 5. PREDICTED VARIATIONS IN GDP PER CAPITA IN 2000 IF INHERITED TRUST HAD BEEN THE SAME AS INHERITED TRUST FROM SWEDEN, CONTROLLING FOR LAGGED GDP PER CAPITA, CONTEMPORANEOUS POLITICAL ENVIRONMENT, AND COUNTRY FIXED EFFECTS

Conclusion on trust and growth:
Changes in trust over the 20th century explain a substantial part of the evolution of economic development for a large panel of countries

Conclusion: Institutions and Growth

- There is no question that these are exciting and important debates
- But we are still unsure of what is the correct interpretation:
  - education vs institutions → crucial effect of institutions operates through the former
  - causality
  - my personal reading: institutions are crucial but less so than Hall-Jones and Acemoglu, Johnson and Robinson claim
- Not all issues can be resolved at a macro level
  It is clear there is need for persuasive micro-economic evidence to back up the macro picture
- Question remains: What are the policy implications?
  How do you change institutions?