14.773 Political Economy of Institutions and Development.
Lecture 1: Introduction and Overview

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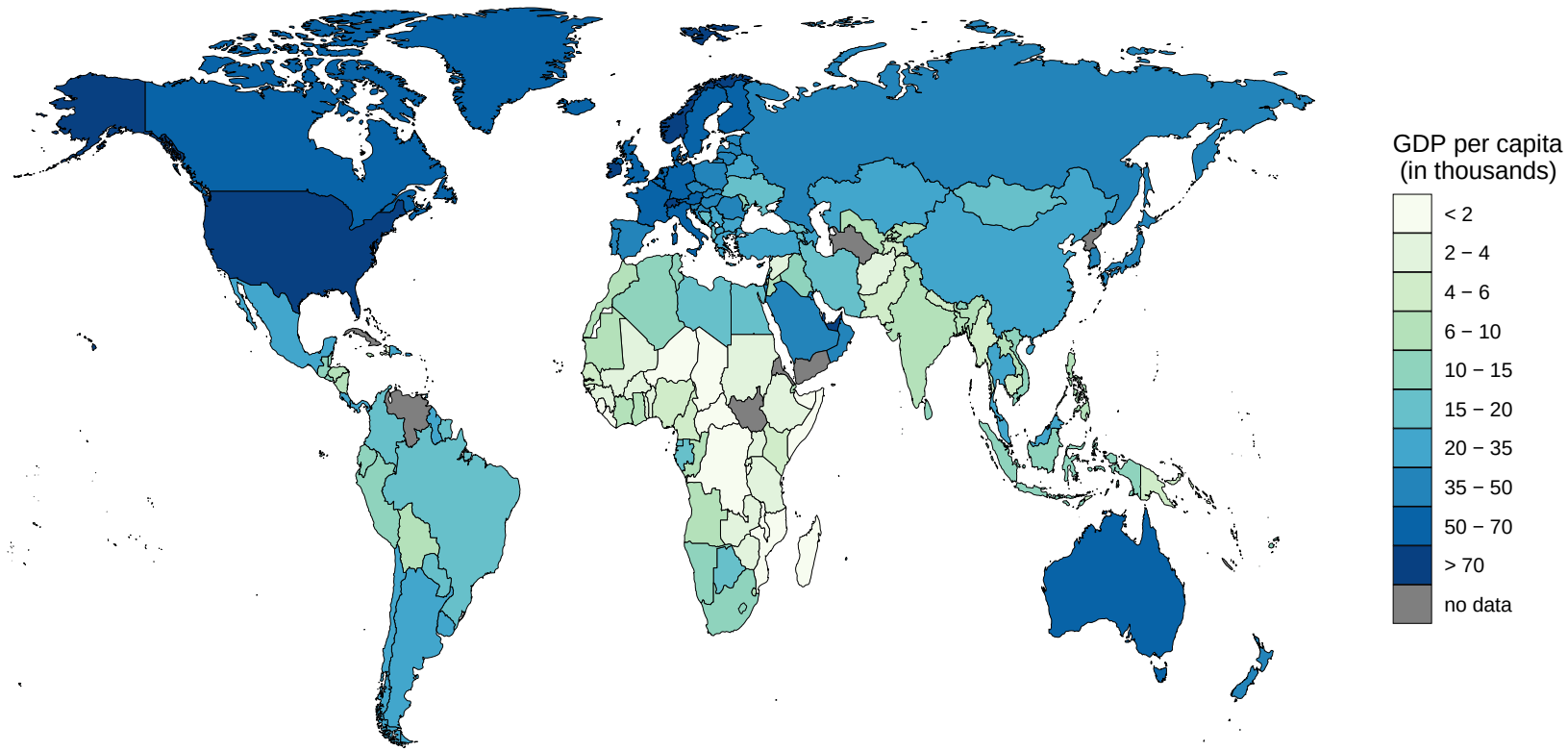
The Question: What Explains the Big Gaps in Economic Development?



The world distribution of income (GDP per capita, PPP, 2019-2023)

Institutions

- Loosely defined in general.
  - Could be anything.
  - The challenge is to find a good workable and useful definition.
- Douglass North: role of institutions as "to reduce uncertainty by establishing a stable (but not necessarily efficient) structure to human interaction."
- Question: what is the difference between institutions and organizations?

Institutions: A Canonical Definition

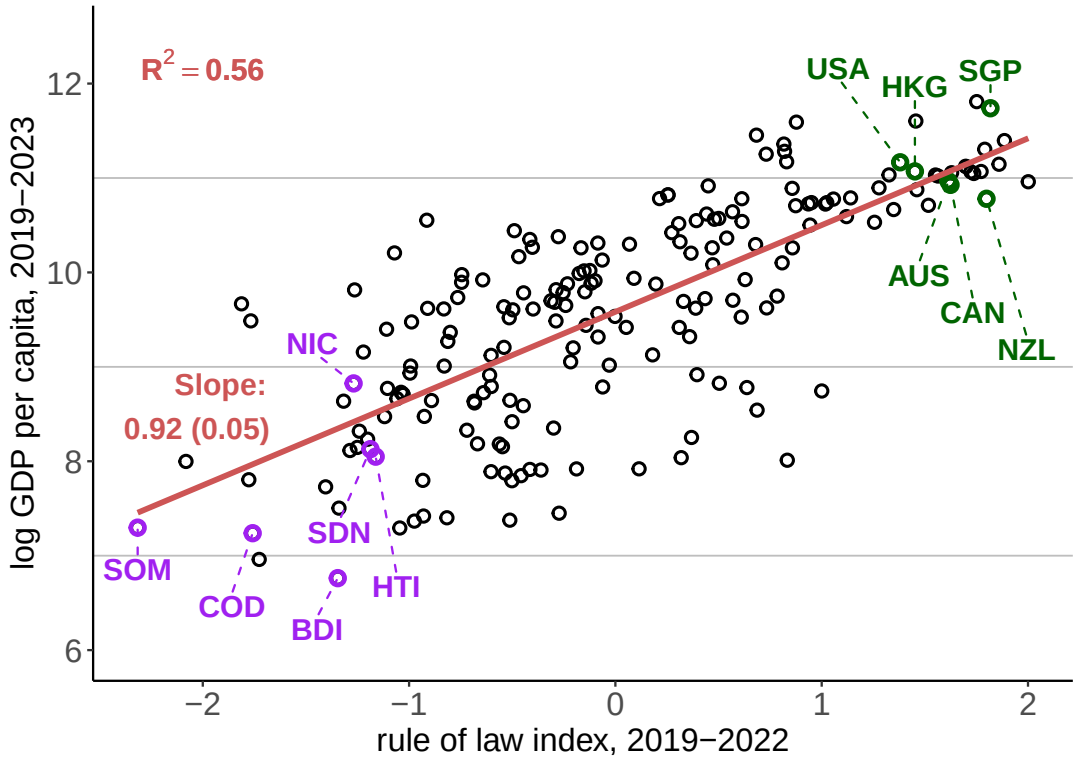
- Let us take another definition from Douglass North as a starting point:

  "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction."

- Key points: institutions are
  - are humanly devised
  - set constraints
  - shape incentives
- Economic institutions$\rightarrow$ economic rules of the game (property rights, contracting institutions)
- Political institutions$\rightarrow$ political rules of the game (democracy versus dictatorship, electoral laws, constraints)
- Not perfect, but will become clearer in the context of well-defined formal models.

Institutions and Prosperity

- **Institutions** shape the **incentives and opportunities**.
- Polar opposites: **extractive** and **inclusive** institutions.
- Proxy the extent of institutional variation a broad index: World Bank's **rule of law index**.
- Several letter indices capture the same variation and give similar results.



Correlation between institutions and GDP

Institutions Are Endogenous

- Correlation between institutions and prosperity does not imply a causal effect from institutions.
- Perhaps rich countries can "afford" better institutions, or their populations "demand" such institutions.
- Or omitted factors influence both institutions and prosperity.
- One such factor may be "geography". Montesquieu:

  The heat of the climate may be so excessive as to deprive the body of all vigour and strength. *Then the faintness is communicated to the mind; there is no curiosity, no enterprise, no generosity of sentiment; the inclinations are all passive; indolence constitutes the utmost happiness; scarcely any punishment is so severe as mental employment; and* **slavery is more supportable than the force and vigour of mind necessary for human conduct.** *(The Spirit of the Laws, 1748)*

- Then, how do we determine the effects of institutions?

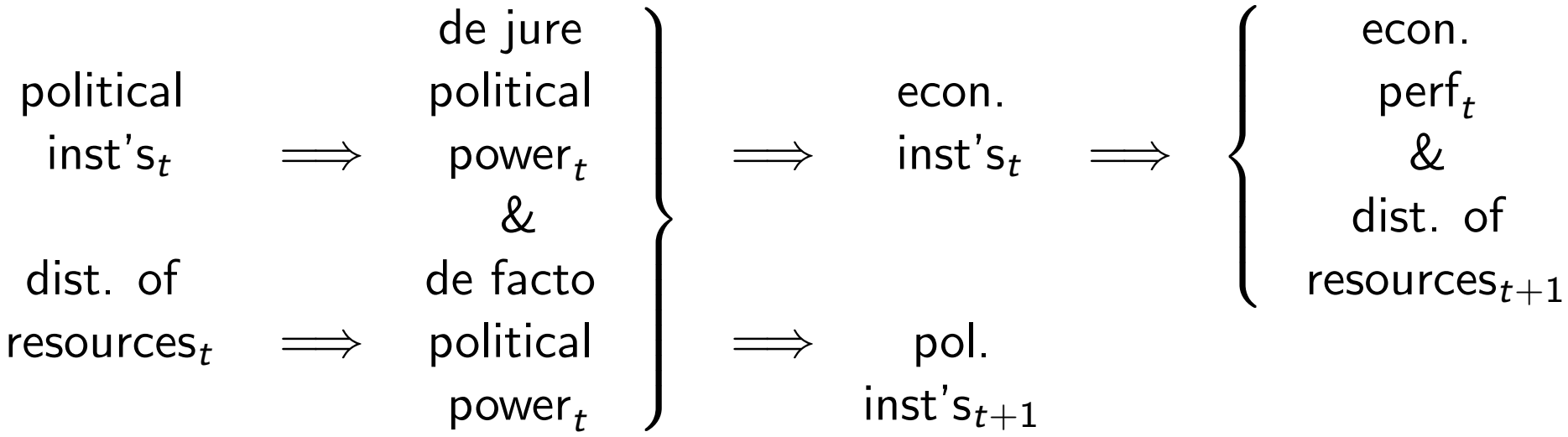
European Colonial History

- Colonialism is one of the most formative institutional events of the millennium.
- It also provides a laboratory for understanding the effects of institutions.
- Europeans set up—and led to the development of—very different sets of institutions across the colonial empire.
- We see in the colonial world the whole range of institutions, from highly **extractive** to broadly **inclusive** ones. But why?
- We need a **theory**.
- A theory plus the right kind of data can also enable us to develop an **instrumental-variables (IV)** strategy—to exploit the exogenous source of variation in colonial history and estimate the effects of institutions.
- This is what we attempted to do in AJR (2001).

De Jure vs. De Facto Political Power

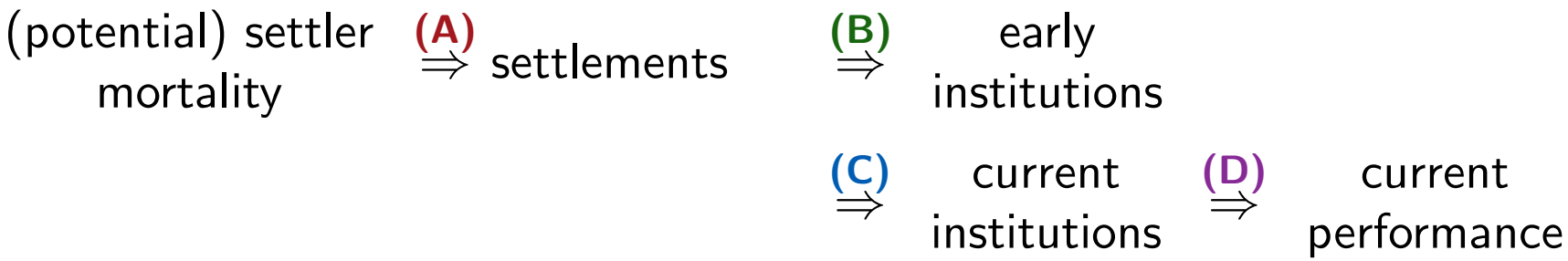
- Distinguish between two different types of political power: *de jure* and *de facto* political power.
  - De jure political power is allocated by political institutions (such as constitutions or electoral systems)
  - De facto political power emerges from the ability to engage in collective action, use brute force, paramilitaries, armies, or other channels such as lobbying or bribery.
- Equilibrium outcomes (institutions/policies) will be an outcome of total political power, which consists of the composition of these two sources of power.
- De facto political power useful for understanding why formal institutions function differently in different environments.

How Institutions Matter



- Political institutions and the distribution of resources (capital, land, human capital) as **state variables**.
- Economic institutions shape incentives for **investment, innovation** and **economic participation**.
- **Institutional persistence** and **institutional change** caused by the interplay of these dynamics.

Theory of Institutional Divergence among Colonies



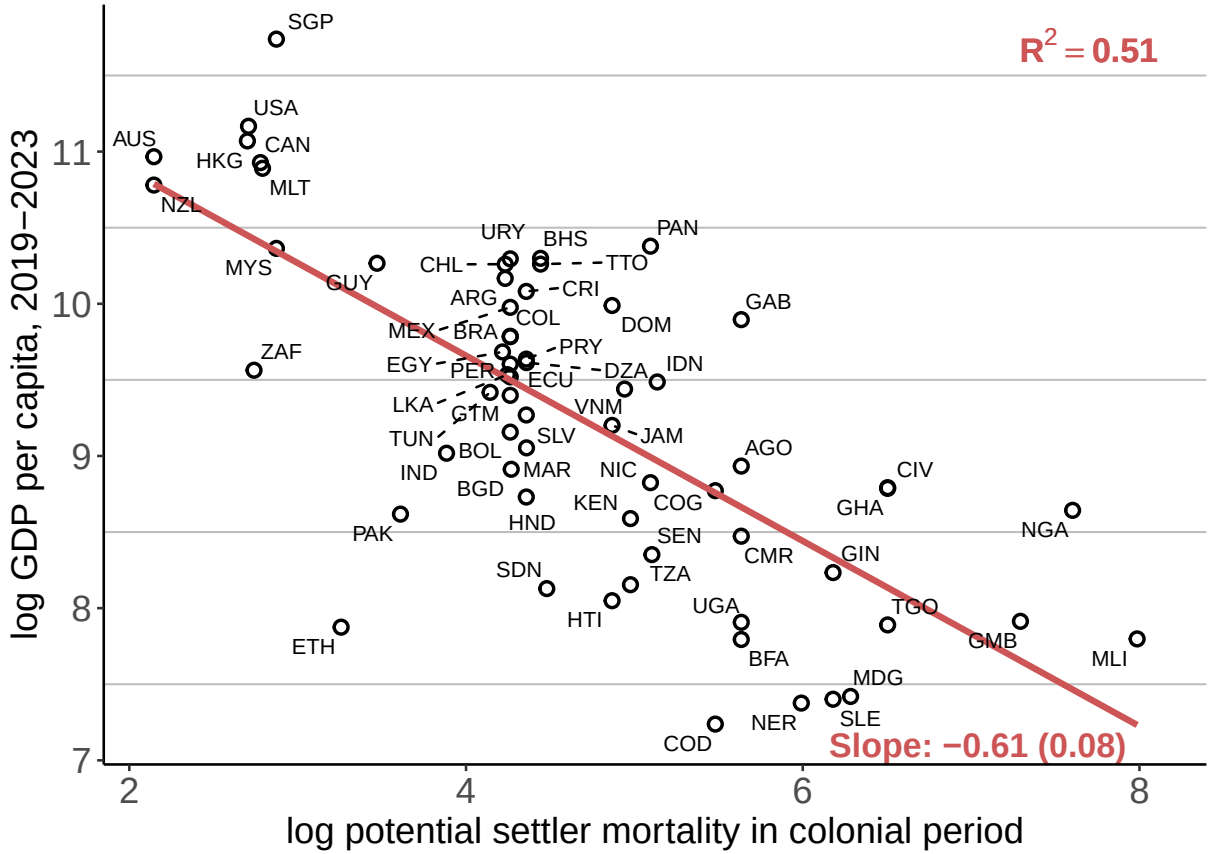
- **A** Huge mortality rates discourage settlements.
- **B** European settlers **resisted** colonial designs for **extractive institutions**, making the emergence of inclusive institutions more likely.
- **C** **Institutions persisted** through the channels highlighted above.
- **D** Exploit this source of variation to estimate the causal effects of current institutions on development, under the **exclusion restriction** that potential settler mortality has no direct effect on current performance ("IV strategy").

Settler Mortality and Institutions

- Compile data on **potential settler mortality rates** from historical sources.
- Use settler mortality as an instrument for current institutions.

First stage: potential settler mortality and institutions today

The Reduced Form



Reduced form: potential settler mortality and GDP per capita today

The Two-Stage Least Squares Estimates: GDP per capita

- This relationship is robust and quantitatively sizable.

Effects of Basic Covariates

- Basic covariates have no major effect on the 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

Identity of Colonizer Matters Little

Table 5
IV Regressions of log GDP per capita with Additional Controls

	Base Sample (1)	Base Sample (2)	British colonies only (3)	British colonies only (4)	Base Sample (5)	Base Sample (6)	Base Sample (7)	Base Sample (8)	Base Sample (9)
					Panel A: Two Stage Least Squares				
Average Protection Against Expropriation Risk, 1985-1995	1.10 (0.22)	1.16 (0.34)	1.07 (0.24)	1.00 (0.22)	1.10 (0.19)	1.20 (0.29)	0.92 (0.15)	1.00 (0.25)	1.10 (0.29)
Latitude		-0.75 (1.70)				-1.10 (1.56)		-0.94 (1.50)	-1.70 (1.6)
British Colonial Dummy	-0.78 (0.35)	-0.80 (0.39)							
French Colonial Dummy	-0.12 (0.35)	-0.06 (0.42)							0.02 (0.69)
French legal origin dummy					0.89 (0.32)	0.96 (0.39)			0.51 (0.69)
p-value for Religion Variables							[0.001]	[0.004]	[0.42]
					Panel B: First-Stage for Average Protection against Expropriation Risk in 1985-95				
Log European Settler Mortality	-0.53 (0.14)	-0.43 (0.16)	-0.59 (0.19)	-0.51 (0.14)	-0.54 (0.13)	-0.44 (0.14)	-0.58 (0.13)	-0.44 (0.15)	-0.48 (0.18)
Latitude		1.97 (1.40)				2.10 (1.30)		2.50 (1.50)	2.30 (1.60)
British Colonial Dummy	0.63 (0.37)	0.55 (0.37)							
French Colonial Dummy	0.05 (0.43)	-0.12 (0.44)							-0.25 (0.89)
French legal origin					-0.67 (0.33)	-0.7 (0.32)			-0.05 (0.91)
R-Squared	0.31	0.33	0.30	0.30	0.32	0.35	0.32	0.35	0.45
					Panel C: Ordinary Least Squares				
Average Protection Against Expropriation Risk, 1985-1995	0.53 (0.19)	0.47 (0.07)	0.61 (0.09)	0.47 (0.06)	0.56 (0.06)	0.56 (0.06)	0.53 (0.06)	0.47 (0.06)	0.47 (0.06)

Disease Environment Matters Little

TABLE 7—GEOGRAPHY AND HEALTH VARIABLES

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Instrumenting only for average protection against expropriation risk						Instrumenting for all right-hand-side variables		
	Panel A: Two-Stage Least Squares								
Average protection against expropriation risk, 1985–1995	0.69	0.72	0.63	0.68	0.55	0.56	0.69	0.74	0.68
	(0.25)	(0.30)	(0.28)	(0.34)	(0.24)	(0.31)	(0.26)	(0.24)	(0.23)
Latitude		−0.57		−0.53		−0.1			
		(1.04)		(0.97)		(0.95)			
Malaria in 1994	−0.57	−0.60					−0.62		
	(0.47)	(0.47)					(0.68)		
Life expectancy			0.03	0.03				0.02	
			(0.02)	(0.02)				(0.02)	
Infant mortality					−0.01	−0.01			−0.01
					(0.005)	(0.006)			(0.01)

Similar Results from Within-Country Variation

- A complementary approach focuses on within country variation (the effects of local institutions).
- Examples:
  - Banerjee and Iyer (2005)
  - Iyer (2004)
  - Besley (1995)
  - Field (2003, 2005)
  - Goldstein and Udry (2005)
  - Dell (2009).
- Often easier to compare apples to apples.
- But big assumption is that local institutions have similar effects to national institutions and no spillovers (e.g., local institutions do not impact neighboring areas etc., see Acemoglu, Garcia-Jimeno and Robinson, 2015).

The Effects of Forced Labor

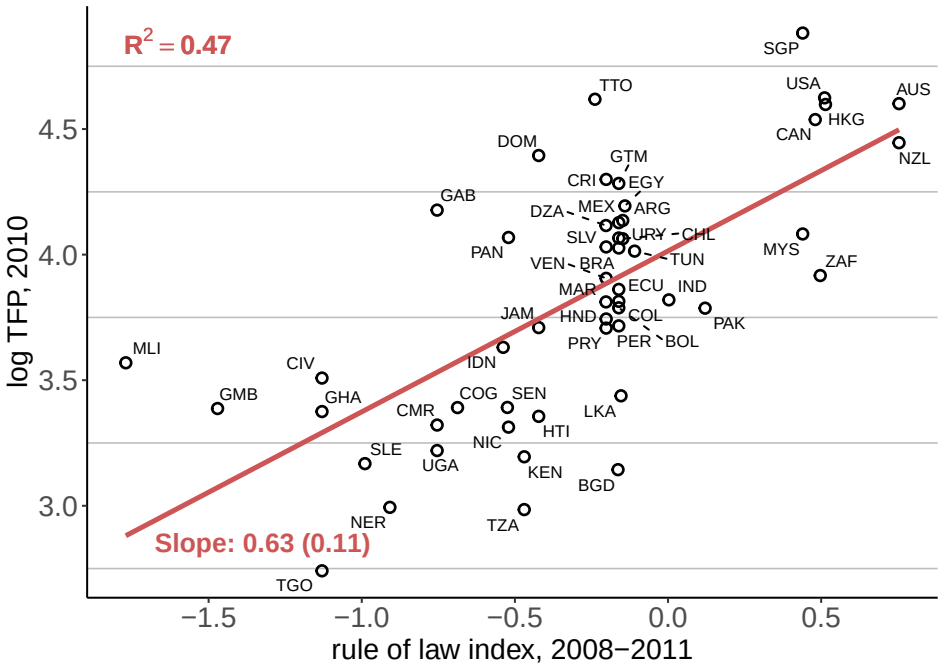
- As we have already seen, in places with dense indigenous populations the Spanish set up labor market institutions to extract rents from them.
- The most famous and largest of these was the *Potosí mita* (mita is a Quechua word which means a 'turn') for the silver mines in Bolivia. But others as well, such as the to the mercury mines in Huancavelica in Peru.
- Melissa Dell examines the long-run effects of the mita on current socio-economic outcomes in Peru.
- Her idea is to look at villages close to the boundary of the mita comparing places just inside to just outside. But these places have to be comparable, so she examines places in Peru where observable characteristics are similar (even going back to the 16th century).

The Effects of Forced Labor (continued)

- Melissa finds that consumption levels inside the mita areas are about 30% below those outside the mita.
- The proximate explanation for this is that although both areas grow the same crops, in non-mita areas people sell produce on the market, in mita areas people are subsistence farmers.
- One reason for this is that there is far less infrastructure in mita areas, fewer roads in worse condition.
- The reason for this seems to be that during the colonial period Haciendas (large landholdings) formed outside the mita areas because the Spanish state did not want them taking labor from the mines. But the owners of these Haciendas were powerful Spanish settlers who were able to lobby for public goods, infrastructure etc. This pattern of relative political power seems to have been very persistent.

Technology as a Major Mechanism: 2SLS Estimates

- Key channels: efficiency of economic arrangements and technology.
- Proxy: total factor productivity, **TFP** and **technology composition of exports**.



2SLS relationships between institutions and technology

Institutions and Political Economy

- Political economy intimately related to the *conflicting preferences over allocations and institutions*
  - How are conflicting preferences of different agents aggregated?
  - How do political institutions affect aggregation?
  - How do conflicting preferences over outcomes imply *conflicting preferences over institutions*?
  - How are different preferences over institutions resolved?
- Much on this course will be about trying to develop models and language for investigating these issues.

Political Power

- How are conflicting preferences reconciled?
- *Political power*.
- In the case of South Africa the resolution of social conflict was simple: whites could vote and determine the law, blacks could not.
  - The major issue for the Boer republics of the Transvaal and the Orange Free State at the foundation of the Union of South Africa in 1910 was to stop Africans voting, and similarly this became the basis of the Apartheid regime after the founding of the Union of South Africa.
- Whites have more political power because it is their preferences that count.

Institutions: Formal Versus Informal

- Formal institutions, for example, whether the country in question has a Supreme Court, separation of power, parliamentary system etc.
- Informal institutions, which determine how a given set of formal rules and informal institutions function in practice. For example, many Latin American countries have a presidential system similar to the U.S., but in practice, they have very different "political institutions".
- Example: Supreme Court under FDR and Juan Perón (see below).
- But informal institutions should not be used as a "catchall". We have to understand why a given set of formal rules imply different outcomes in different societies.
- Let me instead work with the notion of de facto power introduced above.

De Facto Power in Action: Perón and Menem

- When Perón was first democratically elected president in 1946 the Supreme Court had ruled unconstitutional an attempt to create a new national labor relations board. Perón sought the impeachment of 4 of the 5 members of the Court. In the end 3 were removed and the Chamber of Deputies and the Senate supported this.
- The 1946 impeachment established a new norm so that whenever a political transition took place, the incoming regime either replaced the entire existing Supreme Court or impeached most of its members.
- In 1990 when the first transition between democratically elected governments occurred, Menem complained that the existing Supreme Court, which had be appointed after the transition to democracy in 1983 by the Radical President Alfonsín, would not support him. He then proposed an expansion of the Court from 5 to 9 members which was duly passed and allowed him to name 4 new judges.

De Facto Power in Action: FDR

- Contrast with Roosevelt.
- During his first presidency, the supreme court began ruling key elements of the New Deal unconstitutional.
- Roosevelt responded by proposing that all judges over the age of 70 should be retired (the ones that opposed him). Though the Democrats had big majorities in both houses and Roosevelt had a huge mandate (like Perón), this was widely regarded as an attack on the independence of the court and he had to back down.
- Same "formal institutions" and thus the same "de jure power". Difference? In "de facto power" or "informal institutions".

Social Conflict in Action

- In 1911 in South Africa the Mines and Works Act extended a 'colour bar' which stopped Africans from taking specific occupations in the mining industry. The colour bar was extended to the whole economy after 1926 (it was repealed in 1984).
- The effect of the colour bar was to reduce the competition that skilled white workers faced and increase the supply of unskilled workers, thus driving down their wage. The net effect was to redistribute income massively from blacks to whites.
- Notice that from an economic point of view this institution was very inefficient impeding as it did the allocation of resources and undermining the incentives of Africans.

Social Conflict in Action (continued)

Table 4.1. *1904 schedule of skilled trades and occupations reserved for European workers*

amalgamator	engineer	painter
assayer	engine-driver	patternmaker
banksman	fireman-overseer	pipeman
blacksmith	fitter	plasterer
boiler-maker	ganger	plate-layer
brass-finisher	ironmoulder	plumber
brassmoulder	joiner	pumpman
bricklayer	machine rockdriller	quarryman-overseer
brickmaker	machine sawyer	rigger
carpenter	machinist	sampler
clerk	mason	signaller
coppersmith	mechanic	skipman
cyanide shiftsman	miller	stonecutter
drill sharpener	millwright	timberman
driver of air	mine carpenter	timekeeper
or steam winch	mine overseer	tinsmith
driver of mechanical	mine storeman	turner
or electrical machinery	onsetter	wiresplicer
electrician	overseer[a]	woodworking machinist

[a] In any capacity other than the management and control of labourers.

Social Conflict in Action (continued)

Table 3.3. *Nominal and real earnings per shift worked of African workers on the gold mines, 1911–61*

	(1) Earnings (including food)	(2) Retail price index	(3) Index of real earnings
	(cents)	(1911=100)	
1911	24	100	100
1916	24	116	86
1921	28	168	69
1926	26	136	80
1931	25	128	82
1936	26	120	90
1941	28	138	85
1946	37	171	90
1951	45	218	86
1956	56	263	89
1961	62	293	88

Source: (1) Wilson, *Labour*, p. 66; (2) *Union statistics*, H-23; (3) = (1) ÷ (2) converted to index with 1911=100.

Social Conflict in Action (continued)

South Africa in international perspective 11

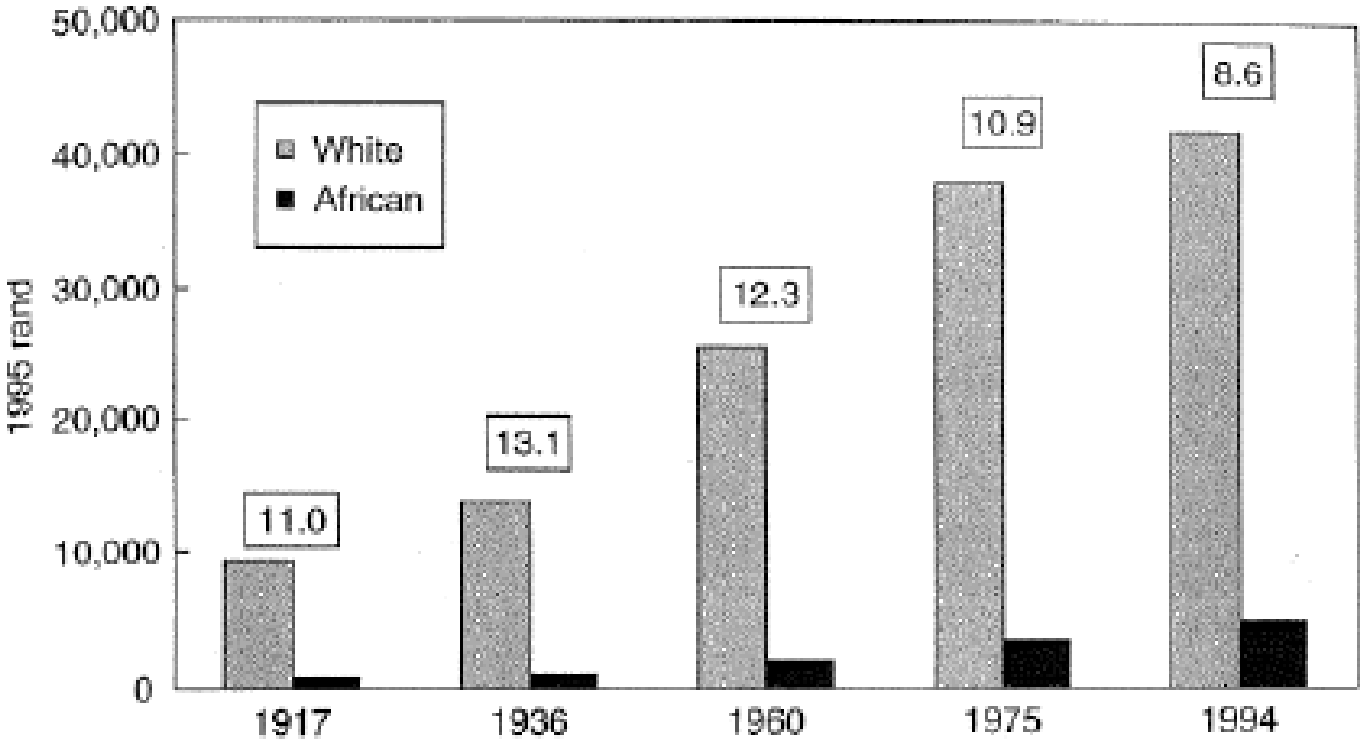


Figure 1.3. Per capita personal income, white and African, selected years, 1917–94

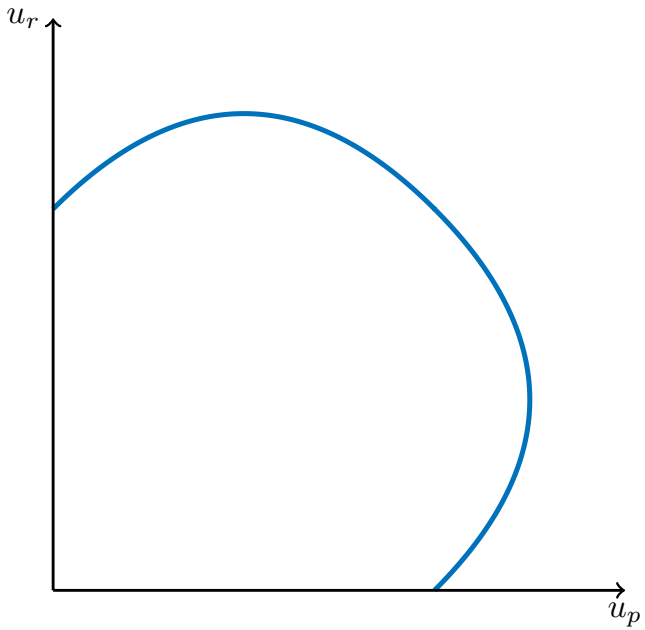
Note: Figure above bars is ratio of white to African per capita personal income.

Beginning of a Framework

- Technological choices are both critical for prosperity and the distribution of that prosperity, and are intertwined with institutional trajectories.
- A new framework for a more holistic account of how institutions evolve and impact technology and prosperity.
- The centerpiece is the **utility-technology possibilities frontier—UTPF**, which informs us about the levels of utility/prosperity/welfare that different groups can achieve given institutions and technology choices.
- Given this framework, study:
  - factors that shift the frontier.
  - factors that induce moves along the frontier given technology.
  - role of technological choices.
  - causes of institutional persistence and change.

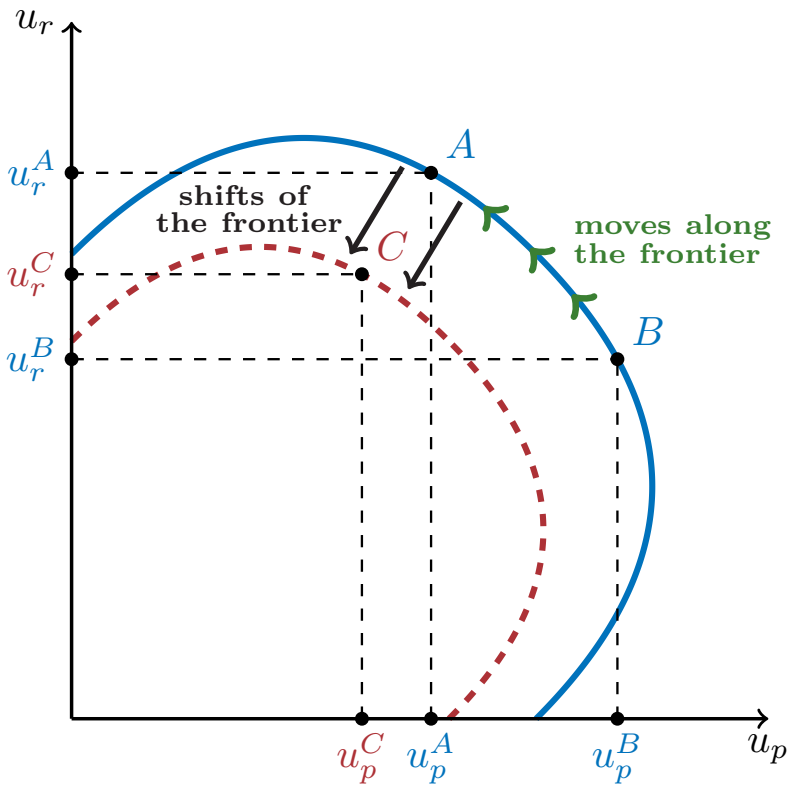
UTPF

- Focus on a world with just two groups, the rich and the poor, with the assumption that **the rich are initially politically more powerful/dominant**.



- Ex: rich=colonialists or landowners; and poor=indigenous population or peasants.

Moves and Shifts

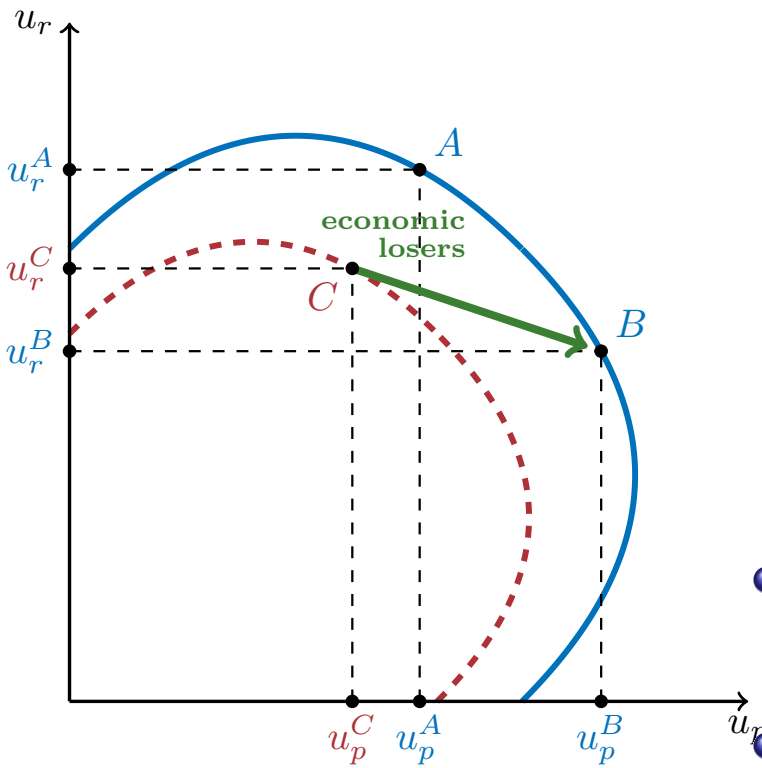


- Moves along the **blue frontier** driven by different balances of power.
- Such moves result when society can use "efficient" tools.
- Inefficient economic arrangements (e.g., monopoly power to extract rents) and technology distortions (including blocking of beneficial technologies) cause **shifts**—the move from **blue frontier** to the **red frontier**.

How Institutions Shift the Frontier

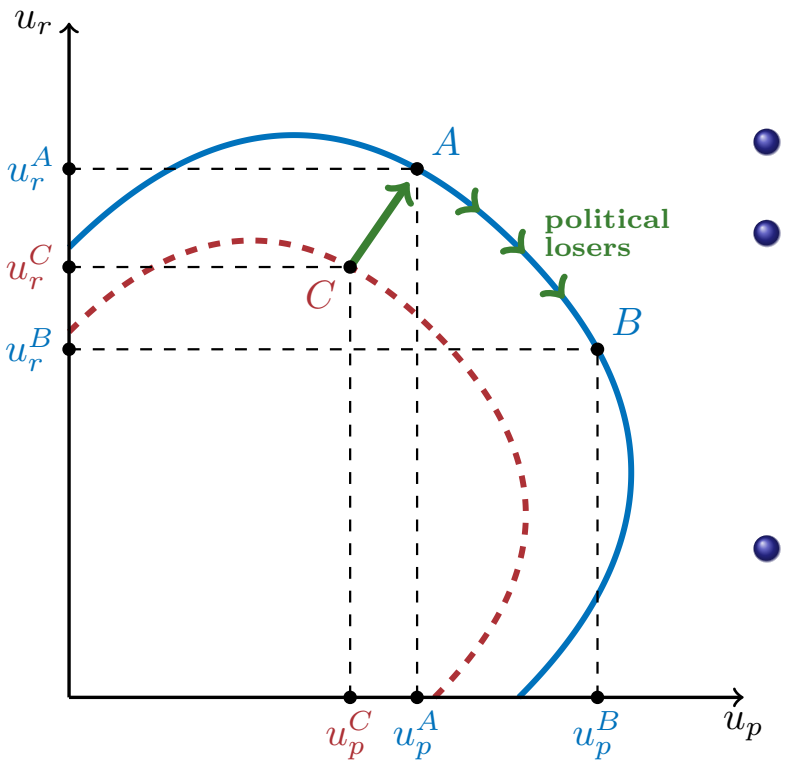
- **Holdup**: the politically powerful cannot refrain from using their power to extract income and resources, discouraging **investment, innovation** and **economic participation** by other groups.
- **Collapse of state capacity**: extractive institutions also intensify conflict (e.g. to take control of those institutions), potentially leading to the erosion of state capacity, and consequently to distorted economic incentives.
- **Discouraging experimentation and collective knowledge building**: even when the elites wish to encourage innovation, extractive institutions may discourage **experimentation** and thus **innovation**.
- **Economic losers**.
- **Political losers**.

Economic Losers



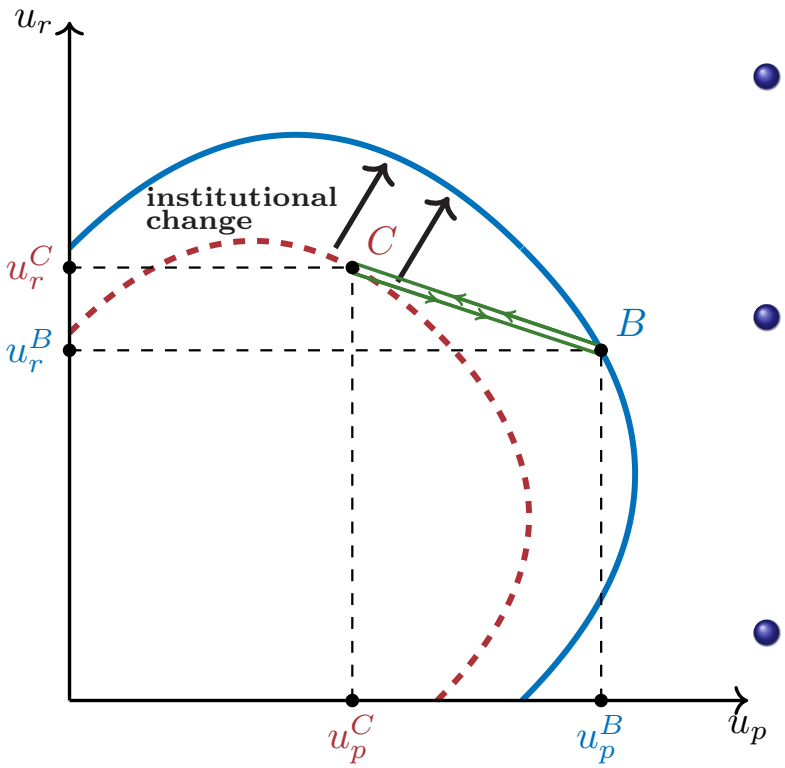
- Distribution and efficiency may be inseparable.
- Without tools to efficiently extract resources from the rest of the population, the elite may be faced with a choice between **point B** (better technology and better institutional arrangements, but low share for them) and **point C** (bigger share of a smaller pie due to worse technology and worse institutions).
- **Point C** on the red frontier is preferable to **point B** on the blue frontier for the elite.
- Choice of **point C** here signifies the **economic losers mechanism**, blocking new technologies and institutional reforms.

Political Losers and Institutional Persistence



- Even with tools to redistribute resources given technology and institutional arrangements, the rich elite may still stay away from the efficient arrangement.
- Suppose **point A** feasible.
- But better technology or institutional reform taking us to the higher frontier may destabilize their power—**political creative destruction**.
- Hence the effective choice may be between **C all the time** versus **A today** but **B from tomorrow onwards**.
- **Political losers mechanism** can keep society with **worse** institutions or technology and thus on the lower frontier.

Institutional Persistence and Institutional Change

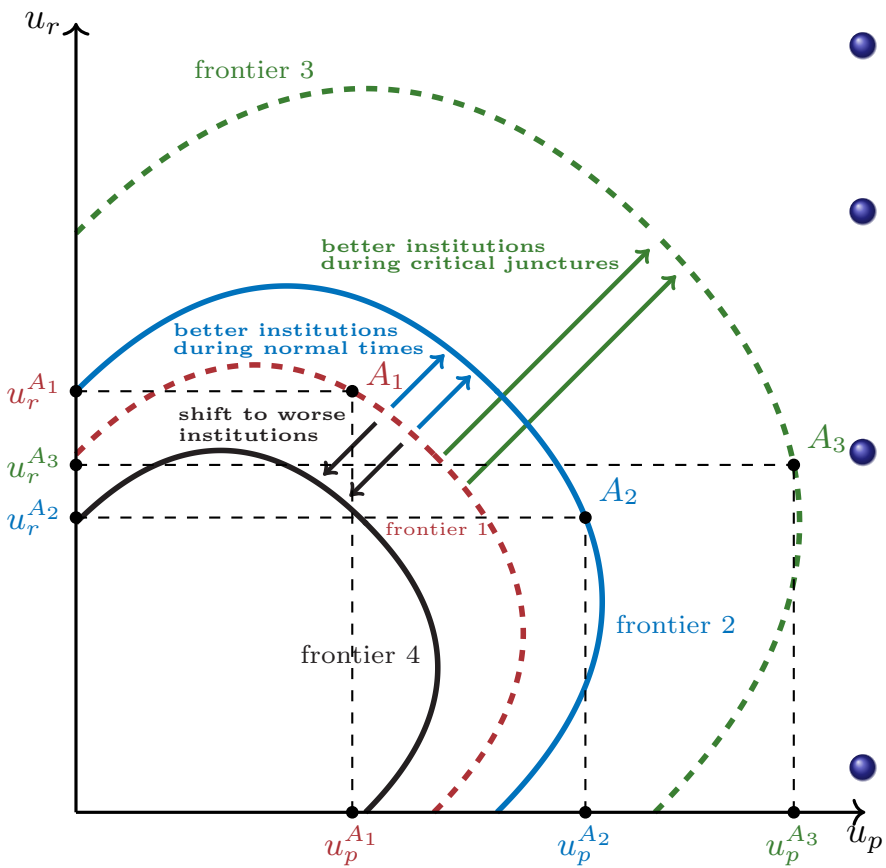


- Tensions for change as in *Economic Origins of Dictatorship and Democracy*.
- Suppose **B** is feasible, but the elite prefer **C**.
- Now the citizens gain temporary **de facto** power and demand concessions—"threat of revolution".
- Promises from the elite under the existing institutional arrangement are non-credible, because they prefer to revert to **C** when the temporary threat evaporates.
- Lord Grey in 1831: *"the principle of my reform is to prevent the necessity of revolution"*
- Demand for **institutional change**—to transfer power to citizens.

Applications of the Framework

- Understanding extractive colonial institutions:
  - **Huge power imbalance** between colonial authorities and native populations.
  - Limited fiscal tools, encouraging the use of monopoly, extraction and coercion.
  - **Political losers** mechanism is **critical** in encouraging choice of institutions for political control.
- Why different in settler colonies?
  - Colonial powers had **the same incentives**.
  - Yet, ideological factors and possible mobility of settlers created **a more balanced** distribution of political power between them and European settlers.
  - Attempts to impose extractive institutions similar to those in South America **failed** for this reason—e.g., Jamestown colony in Virginia or Pennsylvania.
  - This paved the way to economic institutions providing greater security to settlers as well as arrangements for self-governance (especially in Australia and North America).

Critical Junctures and Institutional Change

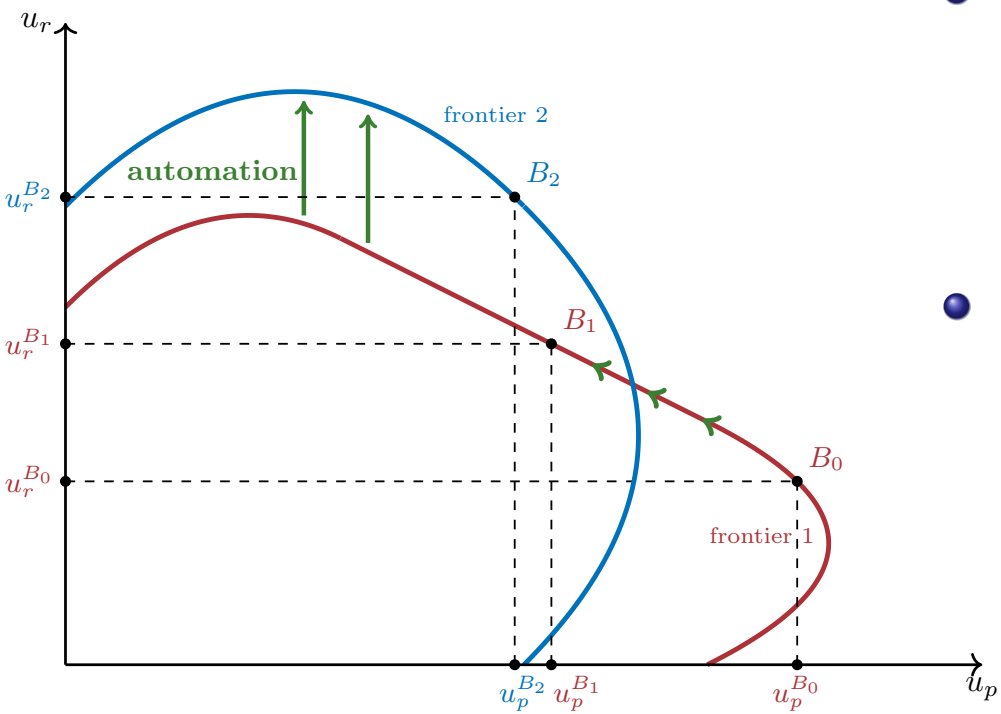


- During **critical junctures**, the effects of institutional changes are amplified.
- Instead of a shift from the **red** to the **blue**, now a shift to the **green** frontier.
- Or, **red frontier** becomes more costly to some groups, who may mobilize and **force institutional change**.
- But if elite increase repression in response to the critical juncture and succeed in staying in power, **then worse institutions**.
- **Path-dependent** change: even if a society does not stay on the **red frontier** after a critical juncture, its path is influenced by initial conditions.

Colonialism and Industrialization as Critical Junctures

- Reinterpreting the colonial divergence.
  - **Small differences now matter more**.
    - Ex: disease environments that mattered little before Europeans arrived became more consequential once European colonialists arrived.
    - Ex: Costa Rica vs. Guatemala—differences in indigenous population and labor relations.
- Reinterpreting the spread of industrialization.
  - Institutional differences that did not cause big divergence before (e.g., between Mexico and the United States or between France and the Habsburg Empire) start mattering more in the context of whether to encourage industrial technology and relevant investments (such as in railways).
  - von Gentz: "*We do not desire at all that the great masses shall become well-off and independent... How could we otherwise rule over them?*"
- Institutional responses during critical junctures.
  - The progressive era as a response to rising inequality and concentration of power during the critical juncture created by the rapid adoption of new technologies in many industries.

The Age of Digital Technologies and AI



- Change in balance of power between capital-labor (and professional-manual labor) moving society from **point** B_0 to **point** B_0.
- Equilibrium effects through technology choices, causing a tilt from the **red frontier** to the **blue frontier** via the development and adoption of **automation technologies**.

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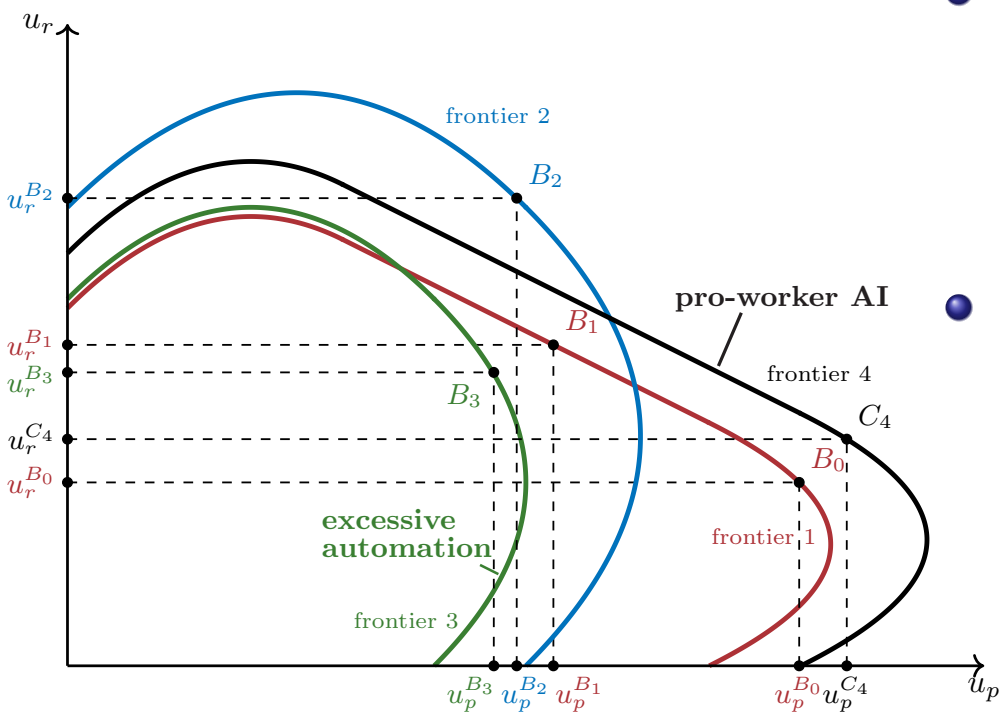

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- Equilibrium effects through technology choices, causing a tilt from the **red frontier** to the **blue frontier** via the development and adoption of **automation technologies**.
- **AI intensifying these trends**.
- AI can be developed in a pro-worker way (**black frontier**) or for excessive automation (**green frontier**).

A Little Formalism

- Consider an economy consisting of a rich elite, that control the capital stock, and poor agents supplying labor.
- Output of the unique final good is produced with:

$$Y = A(\alpha)\left(\frac{K}{\alpha}\right)^{\alpha}\left(\frac{eL}{1-\alpha}\right)^{1-\alpha}, \tag{1}$$

  where K is capital, L denotes the number workers (also taken as given), e is effort or participation by workers, and $A(\alpha)$ is a Hicks-neutral productivity term.
- For each worker, the cost of effort is given by

$$\text{cost}(e) = \frac{e^{1+\phi}}{1+\phi}.$$

- The elite can (forcibly) extract a fraction μ of the labor income, WL. They may also have access to a non-distortionary lump-sum tax at the rate τ, the proceeds of which are redistributed to the rich.

Markets and Incomes

- Markets are competitive, so that the equilibrium rate of return to capital is

$$R^* = \alpha^{1-\alpha} (1-\alpha)^{-(1-\alpha)} A(\alpha) k^{-(1-\alpha)} (e^*)^{1-\alpha}, \tag{2}$$

where $k \equiv K/L$ is the capital labor ratio (without taking account of e) and e^* is the equilibrium level of this effort. Total capital income is

$$R^* K = \alpha^{1-\alpha} (1-\alpha)^{-(1-\alpha)} A(\alpha) k^{\alpha} (e^*)^{1-a} L.$$

- The equilibrium wage rate per unit of effort, $\bar{w}^*$, is

$$\bar{w}^* = \alpha^{-\alpha} (1-\alpha)^{-\alpha} A(\alpha) k^{\alpha} (e^*)^{-\alpha}, \tag{3}$$

- Therefore, total per person labor earnings, given equilibrium effort e^*, are

$$W^* = \bar{w}^* e^* = \alpha^{-\alpha} (1-\alpha)^{-\alpha} A(\alpha) k^{\alpha} (e^*)^{1-\alpha}.$$

Equilibrium with Exogenous Technology

- Each worker takes the equilibrium wage rate per unit of effort, $\bar{w}^*$, and the expropriation of their labor income at the rate μ as given and solves

$$\max_{e \geq 0} (1-\mu)\bar{w}^* e - \text{cost}(e) = (1-\mu)\bar{w}^* e - \frac{e^{1+\phi}}{1+\phi}. \tag{4}$$

- An *exogenous-technology equilibrium* (given institutions) in this economy as factor prices, R and $\bar{w}$, that satisfy (2) and (3) and thus ensure market clearing for capital and labor given the supplies of capital K and labor L, and a participation decision e^*, which is a solution to (4) given $\bar{w}^*$ and the rate of extraction μ. Notice that this equilibrium takes technology, represented by α, and institutions, here represented by μ and τ, as given.

Characterization of Equilibrium

- The maximization in (4) yields $e^* = \left[(1-\mu)\bar{w}^*\right]^{1/\phi}$. Substituting for $\bar{w}^*$, and solving for e^* we get

$$e^* = \left[(1-\mu)\alpha^{-\alpha}(1-\alpha)^{\alpha}A(\alpha)k^{\alpha}\right]^{\frac{1}{\phi+\alpha}}. \tag{5}$$

- Substituting for this term, total output is

$$\begin{aligned} Y &= \alpha^{-\alpha}(1-\alpha)^{-(1-\alpha)}A(\alpha)k^{a}L\left[(1-\mu)\alpha^{-\alpha}(1-\alpha)^{\alpha}A(\alpha)k^{\alpha}\right]^{\frac{1-\alpha}{\phi+\alpha}} \\ &= (1-\mu)^{\beta-1}\alpha^{-\alpha\beta}(1-\alpha)^{-(1-\alpha\beta)}A(\alpha)^{\beta}k^{\alpha\beta}L, \end{aligned} \tag{6}$$

  where $\beta \equiv (1+\phi)/(\alpha+\phi)$, and thus the effective share of capital in production—after the response of labor participation decision is taken into account—is $\alpha\beta$.

- Likewise, substituting for e^*, we can obtain total labor earnings and capital income.

Derivation of UTPF

- Now taking expropriation at the rate μ and taxes into account, we have:

$$\begin{aligned} u_r &= T_r + R^* K + \mu W^* L \\ &= \tau L + (1-\mu)^{\beta-1} \alpha^{1-\alpha\beta} (1-\alpha)^{-(1-\alpha\beta)} A(\alpha)^{\beta} k^{\alpha\beta} L \\ &\quad + \mu(1-\mu)^{\beta-1} \alpha^{-\alpha\beta} (1-\alpha)^{\alpha\beta} A(\alpha)^{\beta} k^{\alpha\beta} L, \end{aligned}$$

and

$$\begin{aligned} u_p &= -\tau + (1-\mu) W^* - \text{cost}(e^*) \\ &= -\tau + \frac{\phi}{1+\phi} (1-\mu)^{\beta} \alpha^{-\alpha\beta} (1-\alpha)^{\alpha\beta} A(\alpha)^{\beta} k^{\alpha\beta}. \end{aligned}$$

- In addition to taxes and the expropriation, technology choices, represented by α, can also redistribute income between the rich and the poor (since greater α makes production more capital-intensive and favors the rich).

UTPF

- Given institutional features summarized by μ and technology α, we can trace the utility-technology possibilities frontier by varying the lump-sum tax τ. The resulting τ-frontier is partially linear.
- If such fiscal tools are not available, then we can consider a frontier traced by varying technology α, again given μ. This frontier is backward bending for very low or very high values of α.
- Moreover, there exists $\alpha^* < 1$ that maximizes output given in (6). The figure also shows that the τ-frontier (conditional on $\alpha = \alpha^*$) is everywhere above the α-frontier, which highlights that redistributing with lump-sum taxes and transfers is more efficient, provided that we start from a situation in which the technology choice is not distorted.
- Redistributing between the rich and the poor by changing μ intensifies **holdup** and inefficiently shifts the relevant frontier inward (because higher μ distorts effort. . Preferring high to low μ is the essence of the **economic losers mechanism**.

UTPF (continued)

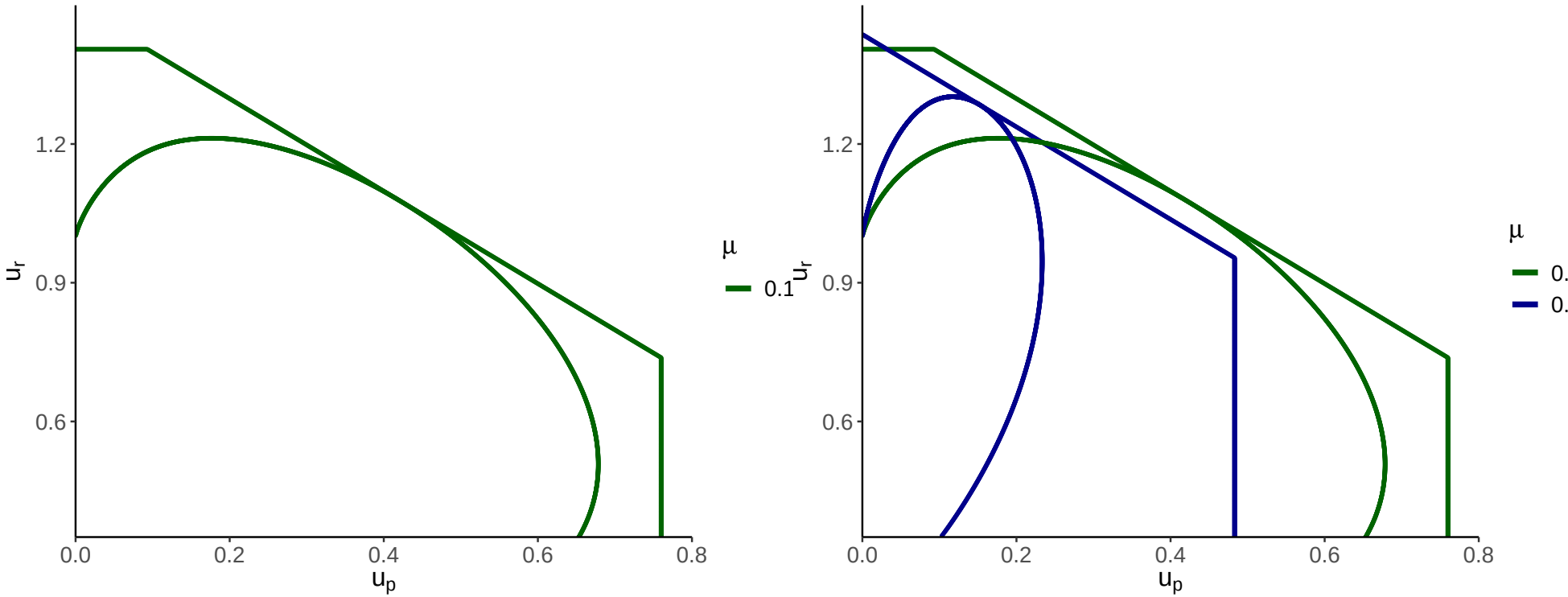

Figure: **The utility-technology possibilities frontier in the theoretical model**

Note: The left panel draws the frontier traced by changes in τ given α and μ, as well as the frontier obtained by changing α. It shows that the τ-frontier is (partially) linear since this instrument linearly transfers utility between the two groups. Moreover, conditional on $\alpha = \alpha^*$, the τ-frontier is everywhere above the α-frontier. The second panel highlights that changes in μ shift the relevant frontier.

Endogenous Technology

- Now let us follow Acemoglu (2007, 2010), which show in a micro-founded model of technology choice that the equilibrium technology is a solution to the maximization of (a fraction of) total output minus the costs of choosing different technology menus.
- Focusing on the choice of α, this problem can be written as

$$\max_{\alpha \in [0,1]} Y - B\Gamma(\alpha), \tag{7}$$

  where B is a constant and $\Gamma(\alpha)$ is the cost of choosing a technology with capital intensity α.
- We can think of $B = \bar{B}(1-\kappa)(1-\eta)$, where $\bar{B} > 0$ is a constant, $\kappa < 1$ is a distortion term, and $\eta < 1$ signifies the effects of different priorities, expectations or visions of researchers.
- An *endogenous-technology equilibrium* is an exogenous-technology equilibrium plus the choice of technology given by (7).
- The same results as summarized by the UTPF, but now instead of direct choice of α, policy determines κ and norms and ideology

Rest of Course

- In the rest of the course, we are going to explore these issues in greater detail, essentially filling in the gaps in the arguments that were discussed in this lecture.
- The emphasis will be on
  - How economic institutions affect economic decisions and outcomes.
  - How political economy shapes economic institutions and often lead to inefficient economic institutions (such as coercive systems).
  - The evolution of political power (in conjunction with political losers-type mechanisms).
  - Where does state capacity come from and how does it evolve?
  - Institutional change and democratization.
  - Where do preferences and beliefs come from?
  - Culture and norms.