

AREC 345: Global Poverty & Economic Development

**Lecture 7:**

**The Legacy of Colonialism**

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Facts about Colonialism

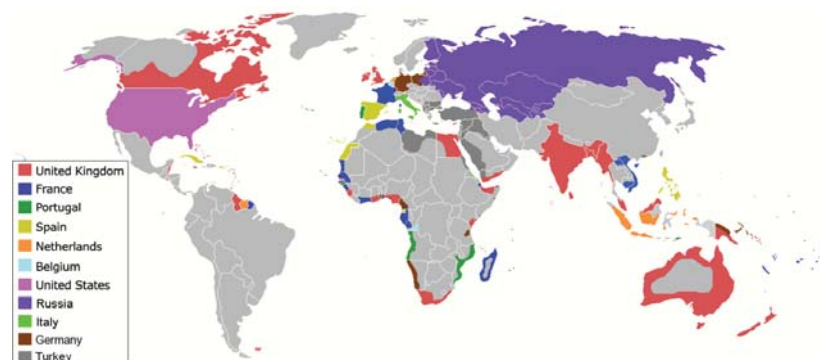
## European Colonialism: Basic Facts

**Q:** Which countries were colonized by Europeans?

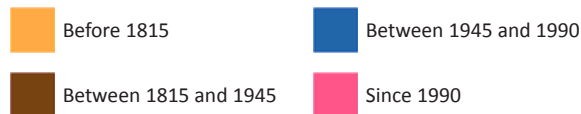
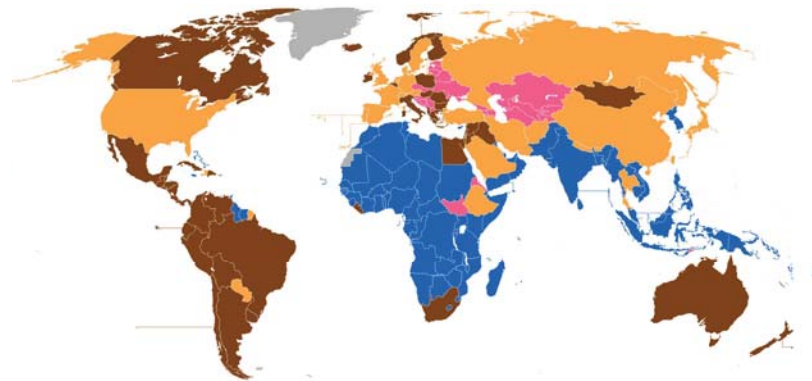
**A:** Almost all of them

- At different times, and for different lengths of time

## European Colonialism: 1885



## Dates of Independence



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## European Colonialism: Basic Facts

**Q:** What did the colonizers do when they got there?

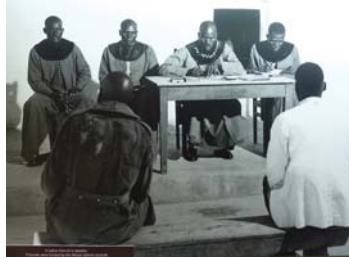
**A:** Different things in different places

- **European settlement vs. resource extraction**
  - ▶ To what extent did diseases, European settlement, and the importation of slaves radically reshape a colony's population?
  - ▶ What system of property rights was established?
- **Direct vs. indirect rule:** how was power delegated in the colony?
  - ▶ To what extent were some ethnicities, classes, castes, etc. empowered to oppress others in the colonial legal system?
- **Infrastructure investment vs. resource extraction**
  - ▶ Did the colonial power invest in roads, railroads, schools, etc.?

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## What Do (Colonial) Governments Do?

making laws



enforcing laws

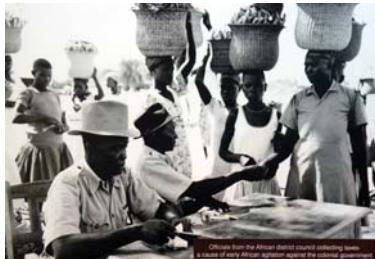


The functions of government (according to economic theory):

- Governments facilitate efficiency-enhancing trade (and discourage theft) by **protecting property rights** and **enforcing contracts**

## What Do (Colonial) Governments Do?

collecting revenues



building infrastructure



The functions of government (according to economic theory):

- Governments **collect taxes** and use the money to **provide public goods** (e.g. defense, infrastructure, schools), or to enrich the elites

## Islands as a Natural Experiment

### Tropical Islands as a Natural Experiment



Tropical islands similar in terms of climate, ecology, etc.

- Bahamas, Haiti, Jamaica colonized by 1500
- Palmerston Island, in the South Pacific, was not even discovered until 1774 (by Captain Cook) and wasn't settled until 1862

**Winds and currents primary determinants of timing of colonization**

## Tropical Islands as a Natural Experiment

In “Colonialism and Modern Income: Islands as Natural Experiments,” James Feyrer and Bruce Sacerdote examine a data set of 81 small islands

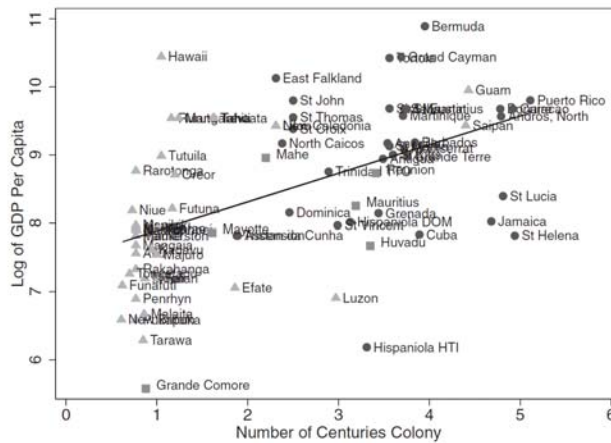
- Colonized between 1492 (Haiti) and 1916 (Funafuti)
- Earliest colonies in the Caribbean dominated by sugar plantations
- Earlier colonization meant more years of imperial trade

**Regress income per capita in 2000 on years as a colony:**

$$E[\text{IncomePerCapita2000}_i] = a + b \cdot \text{YearsColonized}_i$$

Also show results that control for: land area, absolute latitude, ocean

## GDP per Capita and Years as a Colony



Circles = Atlantic islands, triangles = Pacific islands, squares = Indian Ocean islands

## GDP per Capita and Years as a Colony

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Log GDP per Capita	Log GDP per Capita	Log GDP per Capita—IV	Log GDP per Capita	Log GDP per Capita—IV	Log GDP per Capita	Log GDP per Capita—IV	Infant Mortality per 1,000	Infant Mortality per 1,000—IV
Number of centuries a colony	0.42 (0.076)***	0.491 (0.110)***	0.712 (0.253)***					-3.885 (1.472)**	-13.47 (5.434)**
First year a colony				-0.456 (0.112)***	-0.883 (0.354)**	-0.342 (0.108)***	-0.626 (0.304)**		
Final year a colony						0.499 (0.755)	0.527 (0.874)		
Remained a colony in 2000						0.954 (0.311)***	0.81 (0.373)**		
Abs (latitude)		0.053 (0.012)***	0.054 (0.011)***	0.06 (0.012)***	0.068 (0.016)***	0.038 (0.012)***	0.046 (0.015)***	-0.797 (0.207)***	-0.841 (0.225)***
Area in millions of sq km		-20.374 (3.894)***	-21.738 (3.970)***	-26.34 (5.142)***	-34.764 (8.252)***	-15.071 (5.383)***	-20.769 (7.148)***	266.288 (147.186)*	325.479 (138.716)**
Island in Pacific		0.752 (0.464)	1.018 (0.559)*	0.782 (0.510)	1.364 (0.762)*	0.664 (0.491)	1.043 (0.641)	-8.476 (9.329)	-20.036 (14.379)
Island in Atlantic		0.425 (0.395)	0.188 (0.477)	0.471 (0.396)	0.019 (0.568)	0.319 (0.383)	0.043 (0.481)	-5.161 (8.549)	5.14 (8.501)
Constant	7.472 (0.205)***	6.033 (0.552)***	5.484 (0.834)***	15.026 (1.872)***	22.302 (5.894)***	4.879 (15.218)	7.406 (17.308)	44.914 (11.085)***	68.754 (21.610)***
Observations	81	81	81	81	81	81	81	81	81
R-squared	0.273	0.527	0.498	0.488	0.396	0.655	0.616	0.371	0.063

## Early vs. Late Colonialism

	(1)	(2)	(3)	(4)
	Log GDP per Capita	Log GDP per Capita—IV	Log GDP per Capita	Log GDP per Capita
Centuries a colony before 1700	-0.152 (0.177)	-1.338 (0.810)	-0.020 (0.210)	-0.097 (0.221)
Centuries a colony after 1700	1.146 (0.163)***	1.915 (0.604)***		
Centuries a colony 1700-1900			0.840 (0.244)***	0.875 (0.233)***
Centuries a colony after 1900			2.246 (0.536)***	-0.354 (0.975)
Remained a colony in 2000				1.070 (0.346)***
Abs (latitude)	0.049 (0.011)***	0.032 (0.013)**	0.044 (0.011)***	0.036 (0.011)***
Area in millions of sq km	-14.990 (6.370)**	0.660 (16.164)	-6.892 (7.547)	-17.582 (6.425)***
Island in Pacific	1.295 (0.391)***	1.709 (0.618)***	1.005 (0.429)**	1.090 (0.415)**
Island in Atlantic	0.316 (0.337)	0.455 (0.573)	0.310 (0.336)	0.304 (0.338)
Constant	4.843 (0.493)***	3.827 (1.174)***	4.353 (0.580)***	6.218 (0.759)***
Observations	81	81	81	81
R-squared	0.638	0.385	0.663	0.693

Time as a colony matters, **but only after 1700**

## The Impacts of Colonialism: Summary

An additional century as a European colony is associated with (caused?) about a 50 percent increase in GDP per capita (as of 2000)

- Effect driven years as a colony after 1700
- Years as a Spanish or Portuguese colony not associated with increased income; years as a British, French, or Dutch colony matter

### **Colonialism wasn't all bad (for economic development)**

But there are some caveats:

- Evidence is specific to small island colonies
- Describes income today, not impact on native populations

## The Legacy of Colonialism in India



## Land Tenure in British India

**Land tenure system:** “arrangements made by the British administration to collect revenue from the cultivation of land”

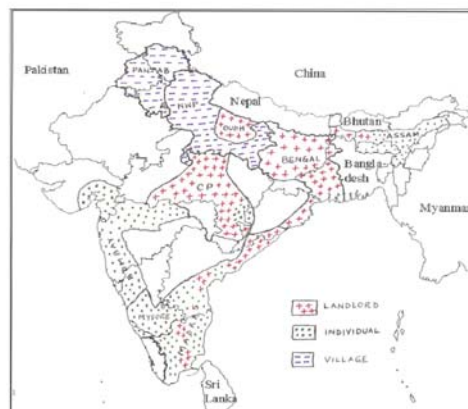
- In 1841, land taxes accounted for 60 percent of gov't revenue

Three distinct forms of land tenure, revenue collection

- **Zamindari system:**
- **Raiyatwari system:** individual cultivator-based systems
- Village-based systems

All three systems implemented in many different parts of India

## Land Tenure in British India



## Estimating the Impacts

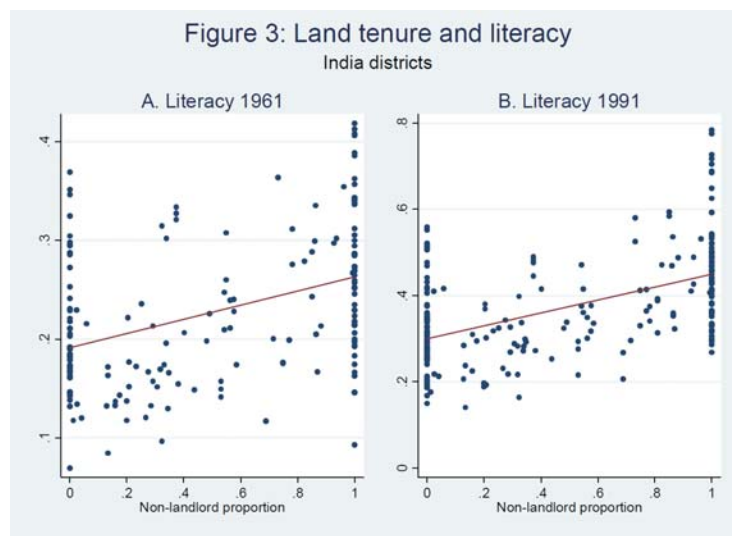
**Independent variable:** non-landlord proportion

- Fraction of land area (within a district) under individual-cultivator and village-based system of land tenure — i.e. under local control

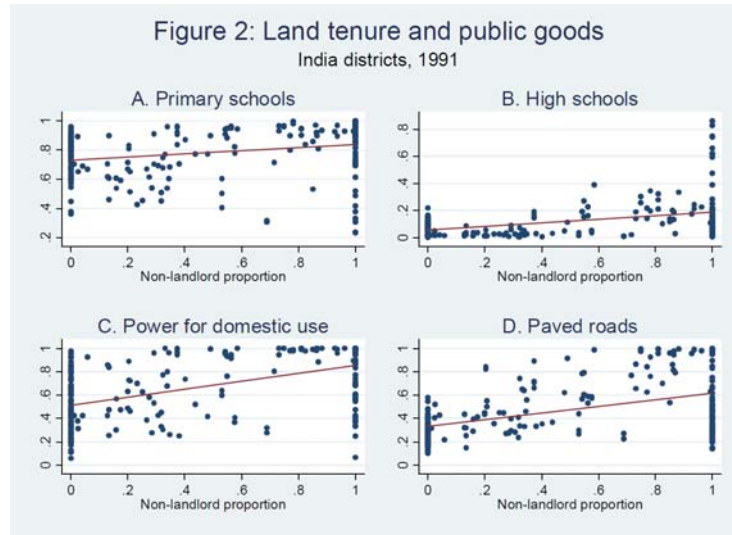
Could effects be explained by inequality?

- Post-independence land policies redistributed landholdings in areas with high inequality (including landlord-controlled areas)
- By 1961, differences in land inequality (between areas with different colonial-era land tenure systems) had more or less disappeared
- However, social dynamics could persist

## Estimating the Impacts



## Estimating the Impacts



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## Estimating the Impacts

Table 1: Colonial land tenure and differential paths of development

Variable	Average for landlord areas (zamindari)	Average for Individual-cultivator areas (raiyatwari)	Difference (3)-(2)	Percentage difference (4)/(1)	Regression difference 1	Regression difference 2
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A</b>						
Fraction of villages provided with public goods 1991:						
Primary schools	0.77	0.91	0.14	18%	0.11*	0.07*
High schools	0.08	0.22	0.14	182%	0.13*	0.11*
Power for domestic use	0.54	0.86	0.32	59%	0.34*	0.21*
Paved roads	0.31	0.58	0.26	85%	0.28*	0.25*
Literacy 1961	0.21	0.29	0.08	36%	0.07*	0.05*
<b>Panel B</b>						
Electoral variables (1980s)						
Voter turnout	0.591	0.613	0.022	3.7%	0.049*	0.050*

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## The Legacy of Colonialism in Africa

### Colonialism in Africa

*“Our policy may for the present chiefly assume a negative character. So long as we keep other Europeans out, we need not be in a hurry to go in.”*

— Vice Consul of Oil Rivers Protectorate (in what is now Nigeria)

**Berlin Conference:** colonial boundaries did not (usually) reflect reasonable groupings of population centers, ethnic groups into polities

Africa's low population density + rugged geography

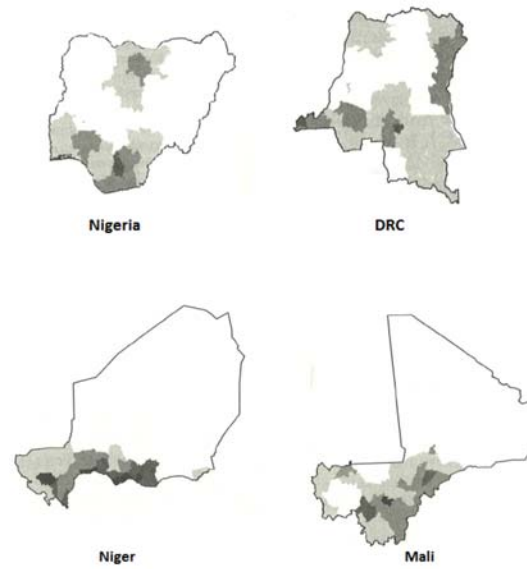
⇒ Difficulties project power across space

Africa was colonized late in the colonial period; European powers had learned that colonies were costly and were focused on making a profit

⇒ Minimal infrastructure investment

⇒ Indirect rule

## Colonialism in Africa: Post-Colonial Borders



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## Colonialism in Africa: Infrastructure

Road Density in Colonial Africa			
Colony	1935	1950	1963
Gold Coast (Ghana)	0.04	0.05	0.13
Kenya	0.03	0.05	0.08
Nigeria	0.02	0.04	0.08
Tanganyika	0.02	0.02	0.04
<b>All British Colonies</b>	0.02	0.04	0.09
French Equatorial Africa	0.007	0.007	0.03
French West Africa	0.01	0.02	0.05
<b>All French Colonies</b>	0.009	0.014	0.04
Belgian Congo	0.02	0.04	0.07
South Africa (independent)	0.11	0.23	0.27

**The colonial powers did little to build up Africa's infrastructure**

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## Colonialism in Africa: Law Enforcement

European powers also relied on Africans to enforce their laws

Native population to European colonial officers in 1939:

<b>Population per European Officer</b>	
British colonies	19,898
Belgian Congo	3,943
French West Africa	4,098
French Equatorial Africa	3,608

**Divide and rule** strategy typically took an ethnic dimension

- Examples: Tutsis vs. Hutus in Rwanda, Kikuyus vs. others in Kenya

## Measuring Ethnic Diversity

Soviet anthropologists compiled extensive data on “mother tongues” in 1964 *Atlas Narodov Mira* (Atlas of the Peoples of the World)

- Ethnic groups defined as speakers of shared native language

**Ethnolinguistic fractionalization** (ELF) measures the probability that two randomly-chosen people will be drawn from different language groups

- For ethnic groups  $i = 1, 2, \dots, I$ ,  $p_i$  is the share of the population belonging to ethnic group  $i$
- Ethno-linguistic fractionalization (ELF) index: continuous measure of diversity within a population

$$\text{ELF} = 1 - \sum_{i=1}^I p_i^2$$

## Measuring Ethnic Diversity

Example 1: purely homogeneous country

$$\text{ELF} = 1 - \sum_{i=1}^N p_i^2 = 1 - 1^2 = 0$$

Example 2: 5 equally-sized ethnic groups

$$\text{ELF} = 1 - \sum_{i=1}^N p_i^2 =$$

Example 3: 1 group with 50%, 2 groups with 25%

$$\text{ELF} = 1 - \sum_{i=1}^N p_i^2 =$$

## Measuring Ethnic Diversity

ELF gives us a bound on the size of the largest ethnic group:

- $\text{ELF} > 0.75 \Rightarrow$  no group larger than 50%
- $\text{ELF} > 0.9 \Rightarrow$  no group larger than 32%

Highest ELF countries:

- Tanzania (0.93), Uganda (0.90), DRC (0.89), Cameroon (0.89), India (0.89), South Africa (0.88), Nigeria (0.87), Ivory Coast (0.86), CAR (0.83), Kenya (0.83), Liberia (0.83), Zambia (0.82), Angola (0.78), Mali (0.78), Sierra Leone (0.77)
- Only Burundi is among the 15 least fractionalized countries

## Ethnic Diversity & Economic Growth

Does ELF explain Africa's low level of economic development?

- Easterly & Levine (1997) explore the correlation between ELF, growth in GDP per capita between 1960–1990
- Find a robust negative relationship: ELF = 0 to ELF = 1 associated with a 2.3 percentage point ↓ in growth rate
- Similar findings when other measures of ethnic diversity used
- ELF also negatively associated with educational attainment, fiscal surplus levels; positively associated with frequency of assassinations
- Estimates suggest that differences in ethnolinguistic fractionalization could explain the difference in growth between Japan and Tanzania

## Country Case Study: Kenya vs. Tanzania

Kenya



Jomo Kenyatta

Tanzania



Julius Nyerere

*"Nyerere's efforts to mould a national identity have borne fruit...  
If Tanzania once was an artificial construct of colonial map-makers,  
it is no more."*

— 2002 Afro-Barometer Survey



## Country Case Study: Kenya vs. Tanzania



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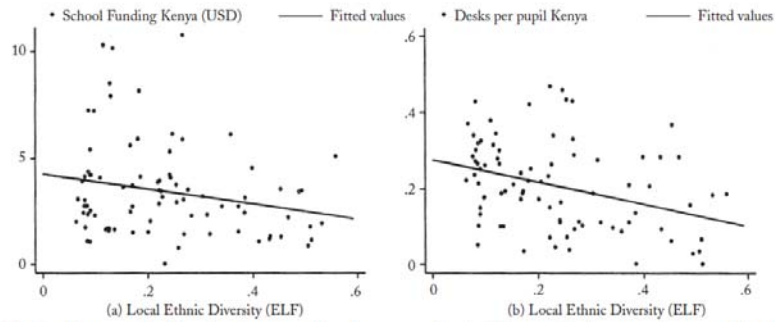
## Country Case Study: Kenya vs. Tanzania

Busia, Kenya, vs. Meatu, Tanzania

- Busia, Meatu similar ethnic diversity, agro-climatic conditions
- Local fundraising is important for schools in both areas
- Busia parents raise money for buildings, desks, and textbooks through school fees, local events
- Decisions about local projects in Meatu are made by the village council (“sungu sungu”), which determines how much each household must contribute in goods or labor

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## Country Case Study: Kenya vs. Tanzania

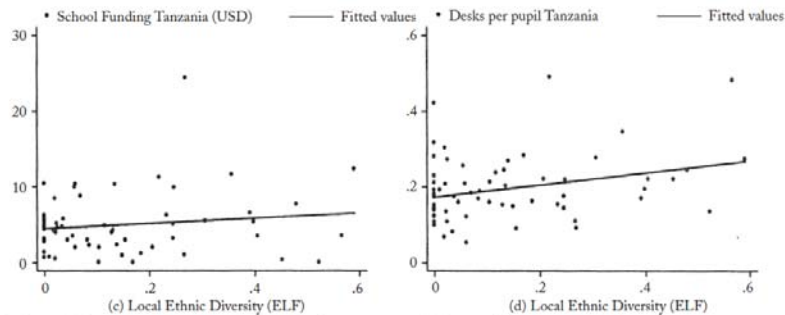


Busia, Kenya: total local primary school funds per pupil (2001 U.S. dollars) in 1995 versus local ethnolinguistic fractionalization

Busia, Kenya: desks per primary school pupil in 1996 versus local ethnolinguistic fractionalization

→ Negative relationship between ELF, school infrastructure in Busia

## Country Case Study: Kenya vs. Tanzania



Meatu, Tanzania: total local school funds per pupil (2001 U.S. dollars) per year in 1997–2002 versus village ethnolinguistic fractionalization

Meatu, Tanzania: desks per primary school pupil in 2001 versus village ethnolinguistic fractionalization

→ No such negative relationship in Meatu

## Ethnic Diversity and Local Public Goods

In Busia, Kenya:

- Rivalry between ethnic groups over control of school committee
- Social sanctions on free-riding households rarely applied in more heterogeneous communities

In Meatu, Tanzania:

- “This is Tanzania — we do not have that sort of problem.”
- “We are all Tanzanians.”

## Study Guide: Key Terms

- natural experiment
- indirect rule
- split countries
- hinterland countries
- ethnolinguistic fractionalization
- nation-building