Colonization and African Development

Introduction & Analytical Framework

Elias Papaioannou

London Business School

Wheeler Institute Lecture Series. African History through the Lens of Economics

March 2022

Colonization and African Development

Outline

1. **Introduction**
2. **A Macro Viewpoint. The Colonial Origins of Comparative Development**
3. **Unbundling Colonization**

Colonization and African Development. Introduction

Outline

1. **Introduction**
2. A Macro Viewpoint. The Colonial Origins of Comparative Development
3. Unbundling Colonization

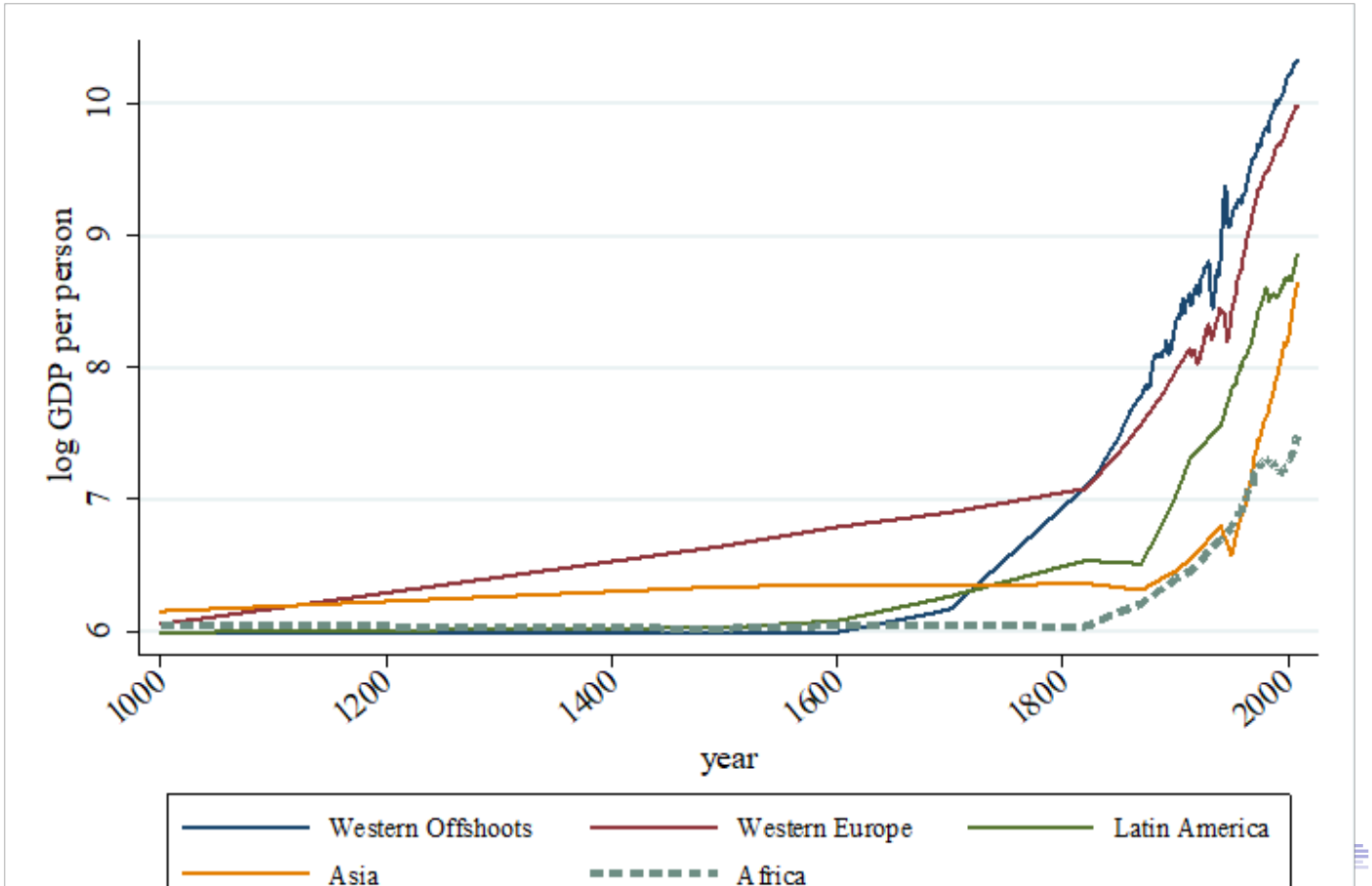
Colonization and African Development. Introduction

Section Outline

1. **African Development and the Great Divergence**
2. **Broad Classifications**
3. **Digressions, Notes, and Caveats**

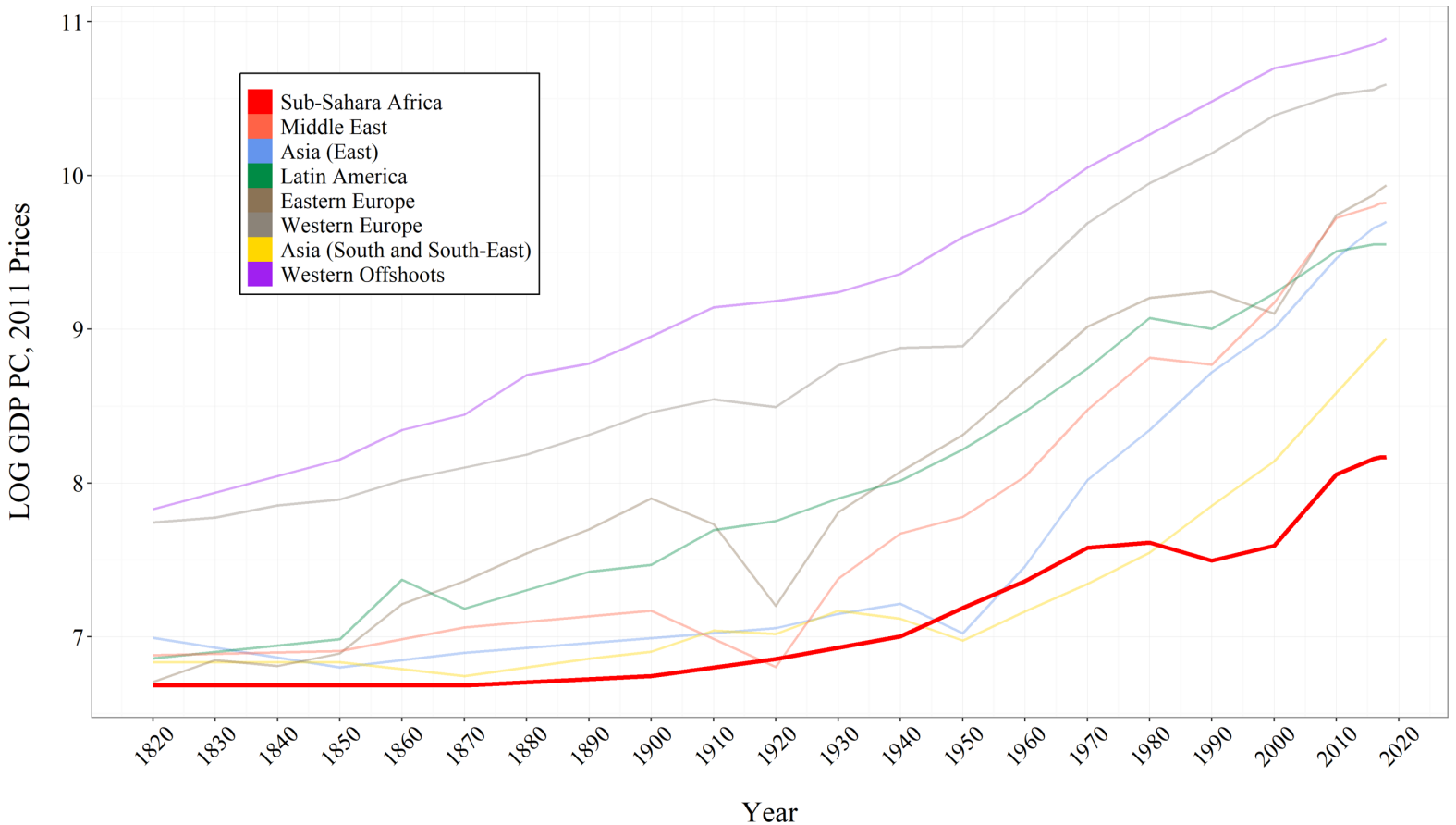
The Great Divergence. GDP p.c. Trends since 1000. Not Much Controversy in the Data

Madisson Data



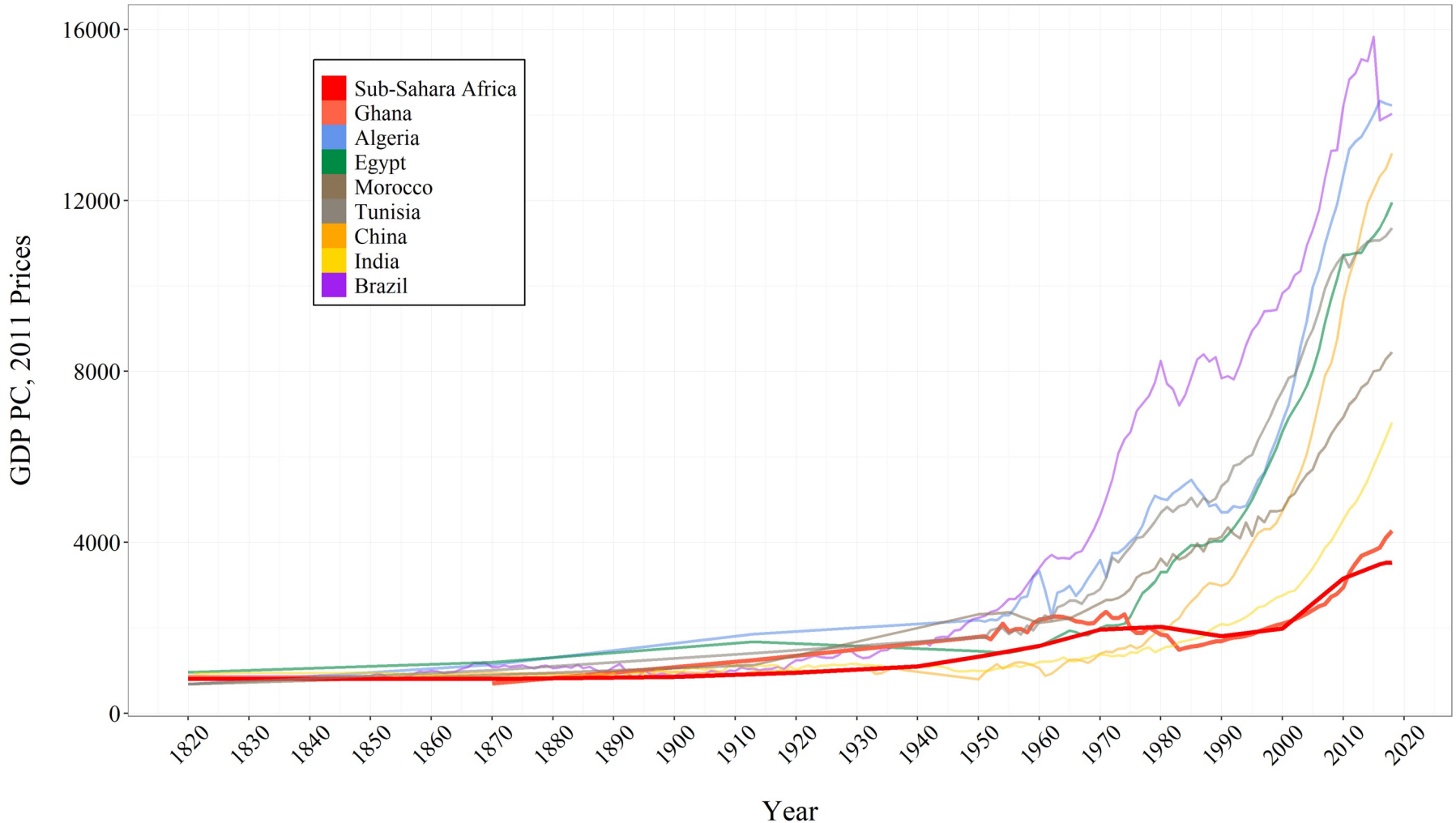
GDP p.c. Trends since 1820

Continental Patterns (Madisson Data)



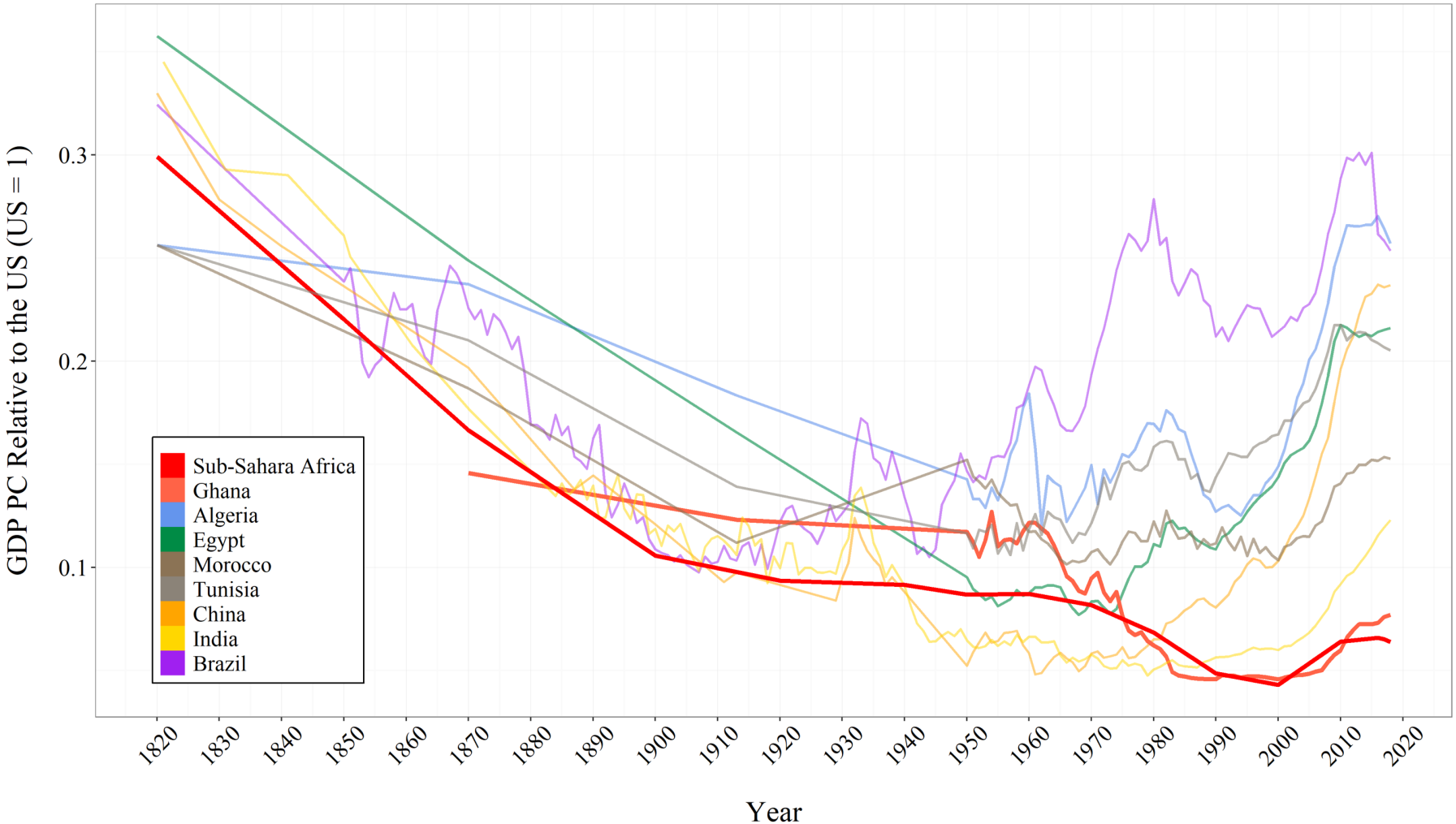
GDP p.c. Trends since 1820

African Countries, India, China, and Brazil



Divergence, since 1820

African Countries, India, China, and Brazil



Counterfactual Question. What If?

The Challenging Question

- **No colonization**. hard, as there are spillovers
  - absolutely no influence
  - smaller influence? [Ethiopia, Liberia]
- **Organic African development** [states, education, infrastructure]
  - Precolonial institutional development. Evolution?
    - state consolidation
    - innovation (market size and public goods)
    - technology adoption
  - Impact of preceding slave trades very harmful [Nunn (2008, 2017)]
    - state consolidation
    - market size effects, population
    - extraction, oppression

African Colonization. Some Aspects

Bundle Treatment

- **Colonial Institutions** [forced labor, indirect rule, oppression]
- **Infrastructure** [roads, railroads, ports]
- **Human Capital Investments** [education, health]
- **Cultural Aspects** Social Capital, Trust, Beliefs, Norms
- **Economic Structure and Dependency** [e.g., cash crops, mining]
- **Political and Economic Power.** (Ethnic) Inequality
- **Border and Country Design.** State Artificiality, Ethnic Partitioning, Country Size and Shape, Heterogeneity
- **Psychology**

Colonial Legacies and Contemporary Development. Moving Forward

Move beyond Average Effects. Micro and Meso Approaches

- **Average-Aggregate Effects**
  - data patterns, correlations
  - causation
- **Heterogeneity - Inequality**
  - regional
  - ethnic group [plus ethnic markers]
  - religious lines
  - gender
  - other
- **Aggregation [from micro/meso to aggregate]**. Ongoing work

African Colonization. Periods (Rough)

Late Colonial Period. [1945 to independence]

- Independence Movements; fighting against departing Europeans
- African socialism, alongside nationalism

WWI; Interwar Period; WWII [1914-1944]

- conscription, some conflict, Great Depression
- some change of colonial powers [defeat of Germany; expansion of Italy]

Early Colonial Era [1880/90-1914]

- exploration, expansion of power, investments, institutional setup

Scramble for Africa [1860-1905]

- border design; spheres of influence

Global. Broad Euro-Centric Classification I. Identity of Colonial Power

1. **British vs non-British** [Lipset, 1960]
   - Political science
2. **Legal Origin** [La Porta et al. 1997, 1998, 2006]
   - Common Law
   - French and German Civil Law [also socialist and Scandinavian]

- **Transplantation of Motherland Institutions & Ideology**.
- **Direct vs. Indirect Rule**. Rough

Global Viewpoint. Classification II. Imperial Strategy.

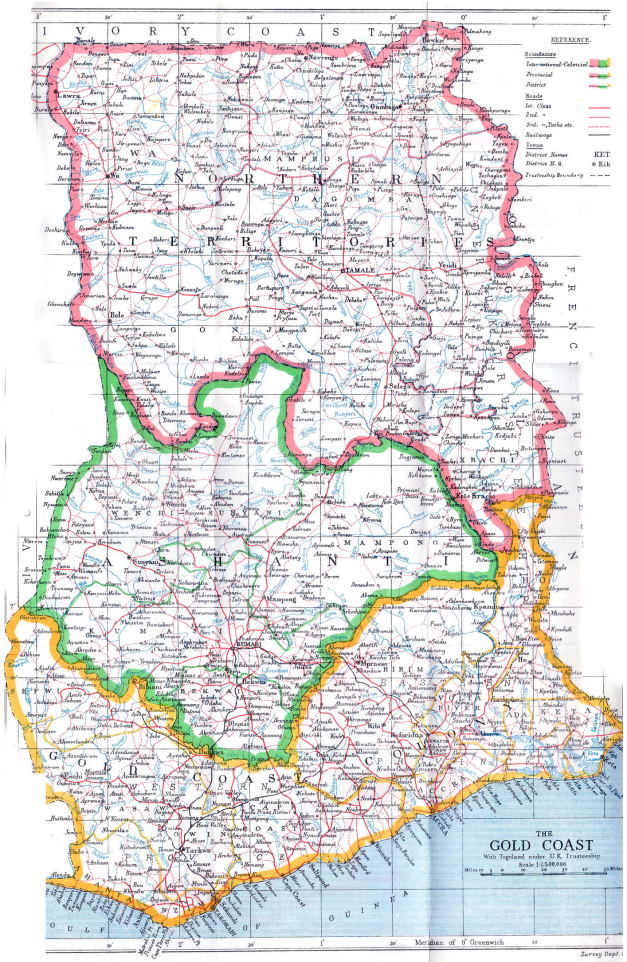
Acemoglu, Johnson, and Robinson (2001, 2002)

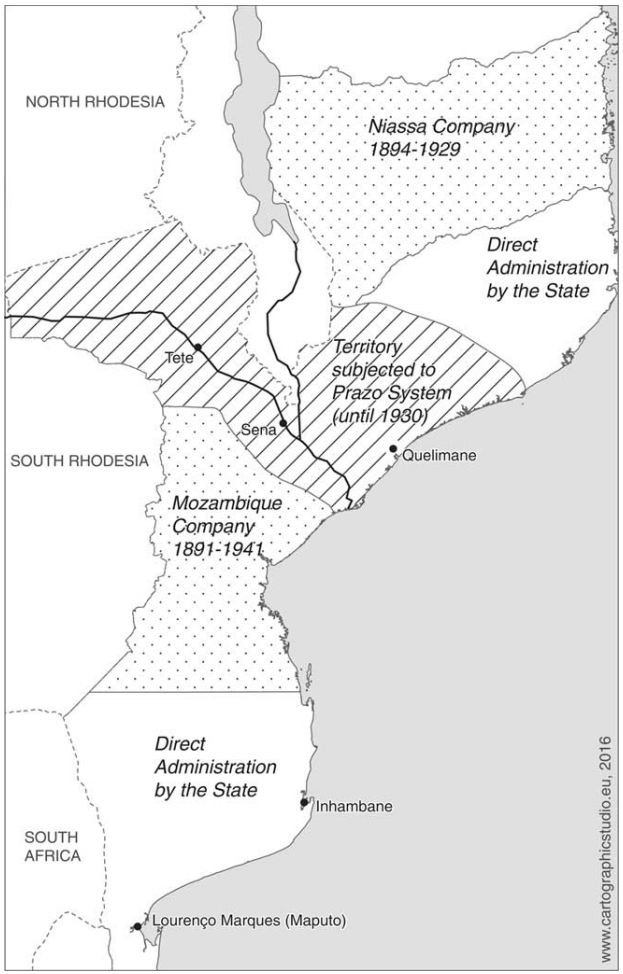
1. **Extractive**. Oppression, forced labor, violence, extraction, under-investments in education, health, and infrastructure, etc
   - small European settler communities
   - Indirect rule; Gate Keeper colonial apparatus
2. **Inclusive (relatively)**. Investments in infrastructure and human capital; more representative institutions for Europeans; inclusive economic institutions (to some extent)
   - Large(r) European communities
   - Direct rule, European institutions and ideology

African Colonies. Classification III. Macro Regions. Exploitation. Samir Amin

1. Traditional West Africa, Cameroon, Chad and Sudan formed the **Africa of the colonial trade economy**
   - coastal "rich" colonies
   - hinterland as labor reserves to the richer coastal areas
2. Traditional Congo basin (French and Belgian Congo, Gabon, and Central Africa), **Africa of the colonial concession companies**.
3. The Eastern and Southern parts (Kenya, Tanganyka, Mozambique, Angola, etc.), **Africa of the labor reserves**. Natural resources (gold and diamond in Southern Africa, copper in North Rhodesia) and fertile land, foreign capital "*needed to have a large proletariat immediately available*".

Classification II. Macro Regions. Exploitation. Within-Colony Differences





African Colonies. Classification IV. Settlement Patterns. G. Austin (2008)

1. **Settler-plantation colonies** with large European communities (e.g., South Africa, Rhodesia, and to a lesser extent Kenya and Namibia);
2. **Settler-concession colonies** with a small-to-modest European presence (like Congo, Angola, and Mozambique);
3. **Non-settler "peasant" colonies** with poor soil quality and unfavorable geography (e.g., Mali and Tanganyika);
4. **Non-settler agriculture** colonies (Nigeria, Gold Coast, Senegal, and Uganda).

- Hall and Jones (QJE 1999) and Easterly and Levine (JEG 2016) on European presence and contemporary development; within-colony variation, regional differences

African Colonies. Classification V. Heldring and Robinson (2012). Precolonial African States and Colonial Artifacts

Evolution of Precolonial African States

1. **Centralized States** (e.g., Benin, Botswana, Burundi, Ethiopia, Ghana, Lesotho, Rwanda, and Swaziland)
2. **White Settlement** (Kenya, Namibia, South Africa, Zimbabwe, parts of Mozambique)
3. **Neither strong precolonial states nor significant White settlements** or mixture of precolonial and acephalous societies (e.g., Congo, Nigeria, Sierra Leone)

Caveats

- **External Conditions.** Industrial Revolution (commodity prices), WWI, Great Depression, WWII, etc
- **Interactive** effects of colonization with slave trades, transatlantic commerce, etc
- **Complementarities** of colonial investments in education and infrastructure
- **Compression of history**; understand colonial epochs
  - tracing the impact of the shock under investigation
  - role of other "shocks" [attenuating or re-enforcing]

Caveats, cont.

- **Data Limitations.** significant advancements in past decade; more can (and should) be done (esp. from Africans in African universities)
- **Inherent Biases.** Colonial-era administrative data and secondary sources come with biases, prevalent at the time
- **Massive Heterogeneity**
- **Economics research focus**:
  - traditionally on consumption, income, wealth
  - more recently in education, health, and infrastructure investments
  - increasingly focus on norms, beliefs, trust, etc

Notes, Digressions

- **Role of private capital and European business**.
  - Private (concessionary) companies working often alongside with the colonial administration and local chiefs.
  - Often private enterprises were the conduits of imperialism.
- **Role of freed slaves returning to the continent.** Liberia, Lagos, many parts of West Africa
- **Migrant communities from across the World**.
  - Asian communities in East Africa
  - Lebanese and Syrian communities in West Africa
  - Jewish communities in Southern Africa
  - many many more

Colonization and African Development. Introduction

Outline

1. Introduction
2. **A Macro Viewpoint. The Colonial Origins of Comparative Development**
3. Unbundling Colonization

The Colonial Origins of Comparative Development

Section Outline

1. Idea/Conjecture and Testable Hypotheses
2. Cross-Country Patterns

AJR (2001). Idea

Acemoglu, Johnson, and Robinson (AER 2001, QJE 2002) Conjecture

- **Small differences in development across countries/regions before 1500**, especially if one excludes Europe.
  - Colonial experience; subsequent industrial revolution
- **Semi-exogenous transplantation** of general and specific **institutional arrangements**
- **Persistence** [de facto political power hard to change]

AJR Conjecture. Schematic Representation

From Colonial Strategy to Contemporary Development

Colonial strategy/Institutions (extractive; inclusive) => **Early at-Independence Institutions & Political Power => Contemporary National Institutions => Development**

- **Key Elements**
  - Institutional persistence (plausible; though not always; Glaeser et al. (JEG 2004))
  - Persistence of economic and political power (some examples, incl. Sierra Leone)
  - Exogeneity of colonizer (plausible though far from random)
  - **Type of colonization strategy: Endogenous**

Colonial Strategy. Drivers?

Historical Settler Mortality and Pre-Industrial Population Density

Living Conditions for Europeans

- **Disease environment.** malaria, yellow fever, ecology, etc
- **Opposition.** political centralization, population density, urbanization, geography
  - drivers? [J. Diamond, Guns, Germs, and Steel, 1997]
  - origins of political centralization and urbanization in pre-industrial societies

Colonial Strategy and Settler Mortality

Acemoglu, Johnson, and Robinson (AER 2001)

- **Settler mortality was a key (not the only) influencing factor of the intensity of colonizer's migration and colonial strategy**
  - Australia, New Zealand, the U.S.: healthy for Europeans; large European communities; transplantation of institutions; investments
  - Africa, India, Indonesia, Caribbean: much less healthy for Europeans; small communities with goal to extract resources from the colonies; extractive institutions, under-investments
- **Issues**:
  - Data on settler mortality [Philip Curtin; Gutierrez; see Acemoglu et al. AER 2001 , 2011; and Albouy, AER 2013, for details]
  - Timing of colonization differs [and so does technology]

Colonial Strategy and Population Density in 1500

Acemoglu, Johnson, and Robinson (QJE 2002)

- **Colonial strategy driven by pre-industrial population density**
  - Low population density – Under-developed indigenous communities (U.S., Australia): small opposition; germs favored Europeans; massive European migration; transplantation of (growth promoting) European institutions
  - High population density – Advanced local communities (e.g. Africa, Latin America): huge resistance, relatively small European communities; extractive institutions
- **Issues**:
  - Data on population density around 1500 [Mc Evedy and Jones; see Acemoglu et al. QJE 2002 for details]
  - Timing of colonization differs [and so does technology]

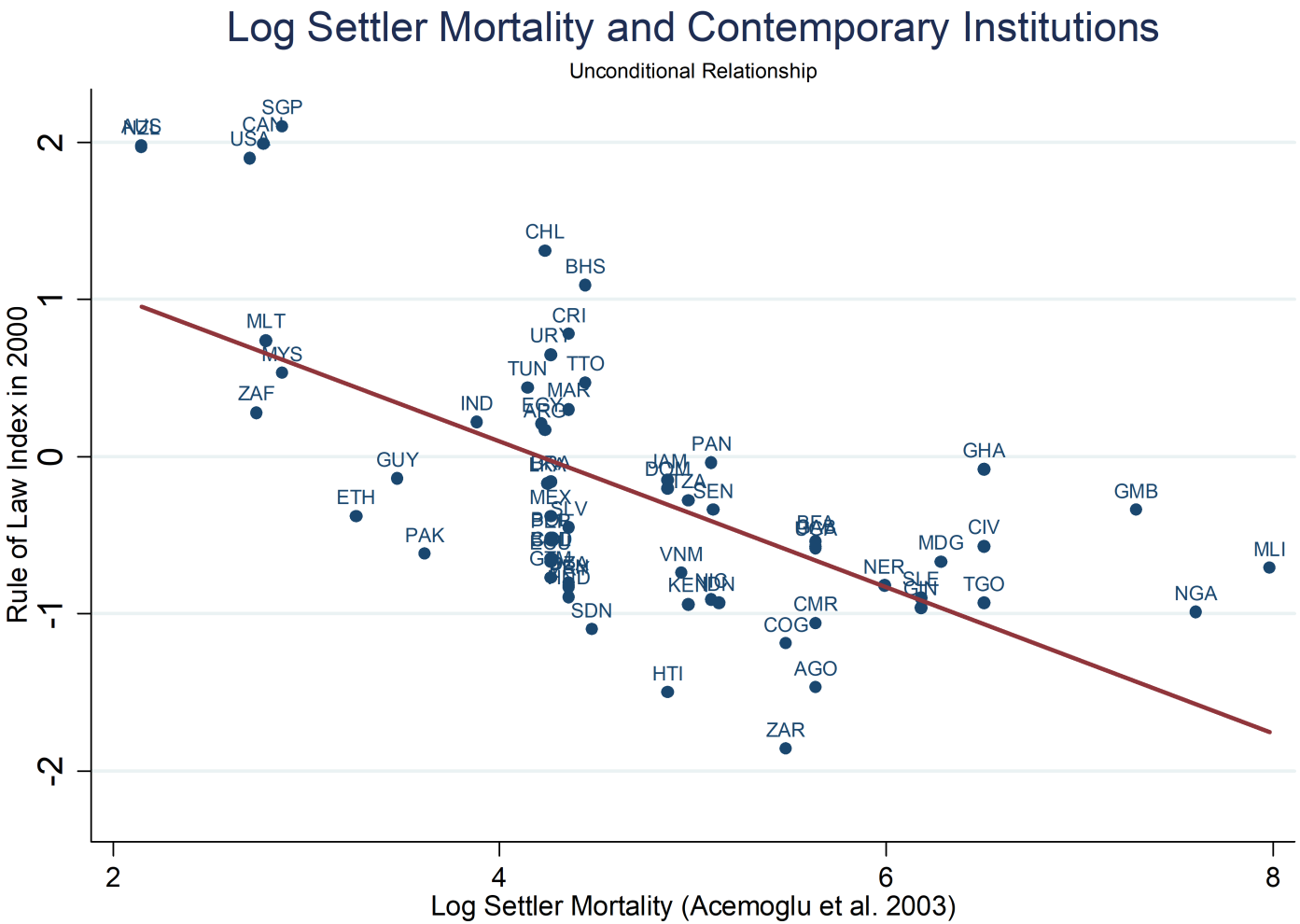
Acemoglu, Johnson, and Robinson (2001, 2002). Argument Summary

- **Colonization with relatively inclusive institutions** (as well as considerable infrastructure and human capital investments) **in low-settler mortality and low population density regions**.
- **In high-settler-mortality places and/or more urbanized regions, the colonial strategy was that of extraction, coercion, and looting** (and under-investments in education and infrastructure).

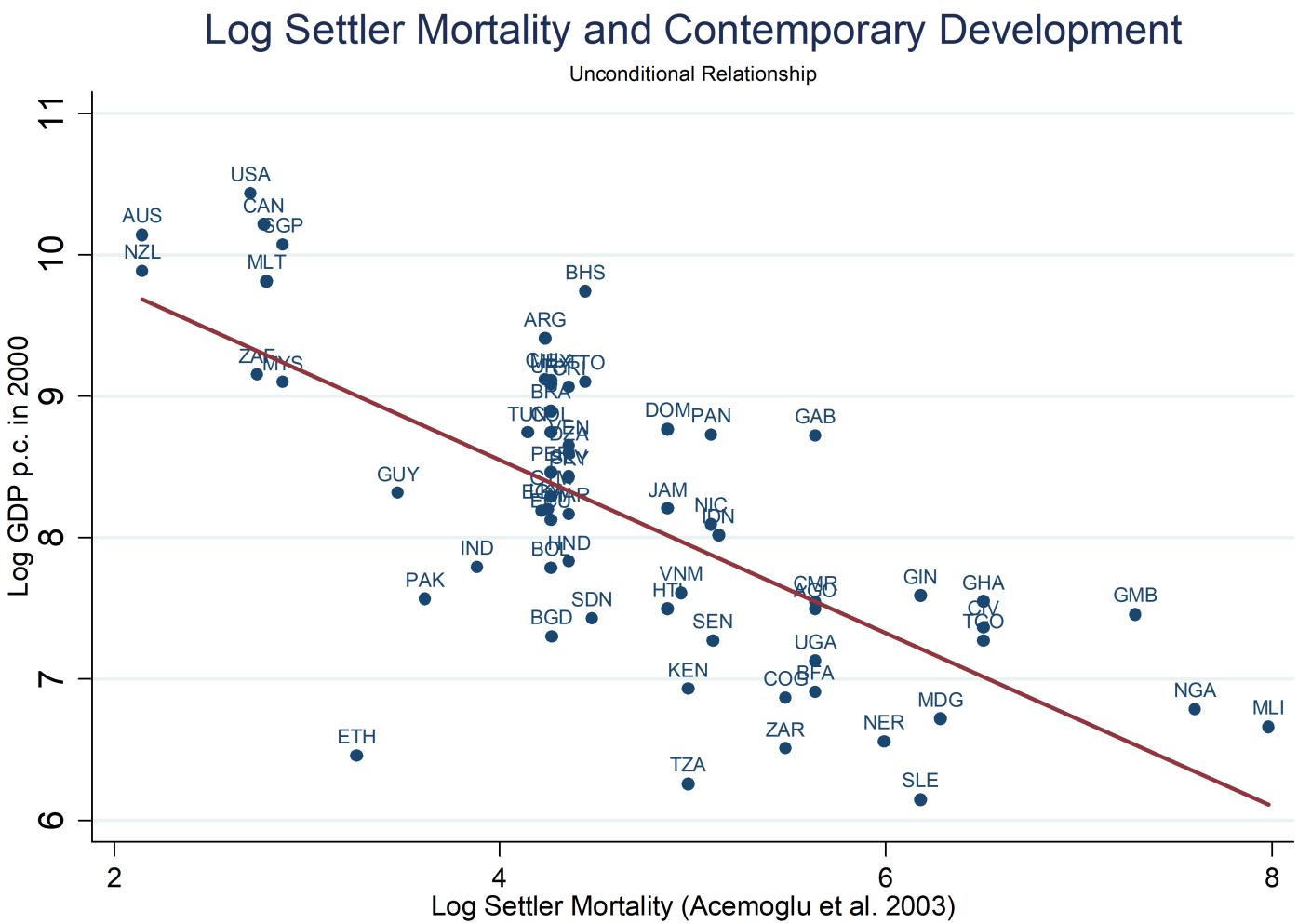
Acemoglu, Johnson, and Robinson (2001, 2002). Main Challenges

- **"Direct" effects of geography, disease environment, ecology, location** etc
- **Measurement** [pure, conceptual, timing]
- Very broad conjecture [mostly of inter-continental differences]
- **Mechanisms?**
  1. Institutions. forced labor, oppression, violence, genocide
  2. Under-investments in education, health and infrastructure
  3. Social capital, trust, psychology
  4. many other

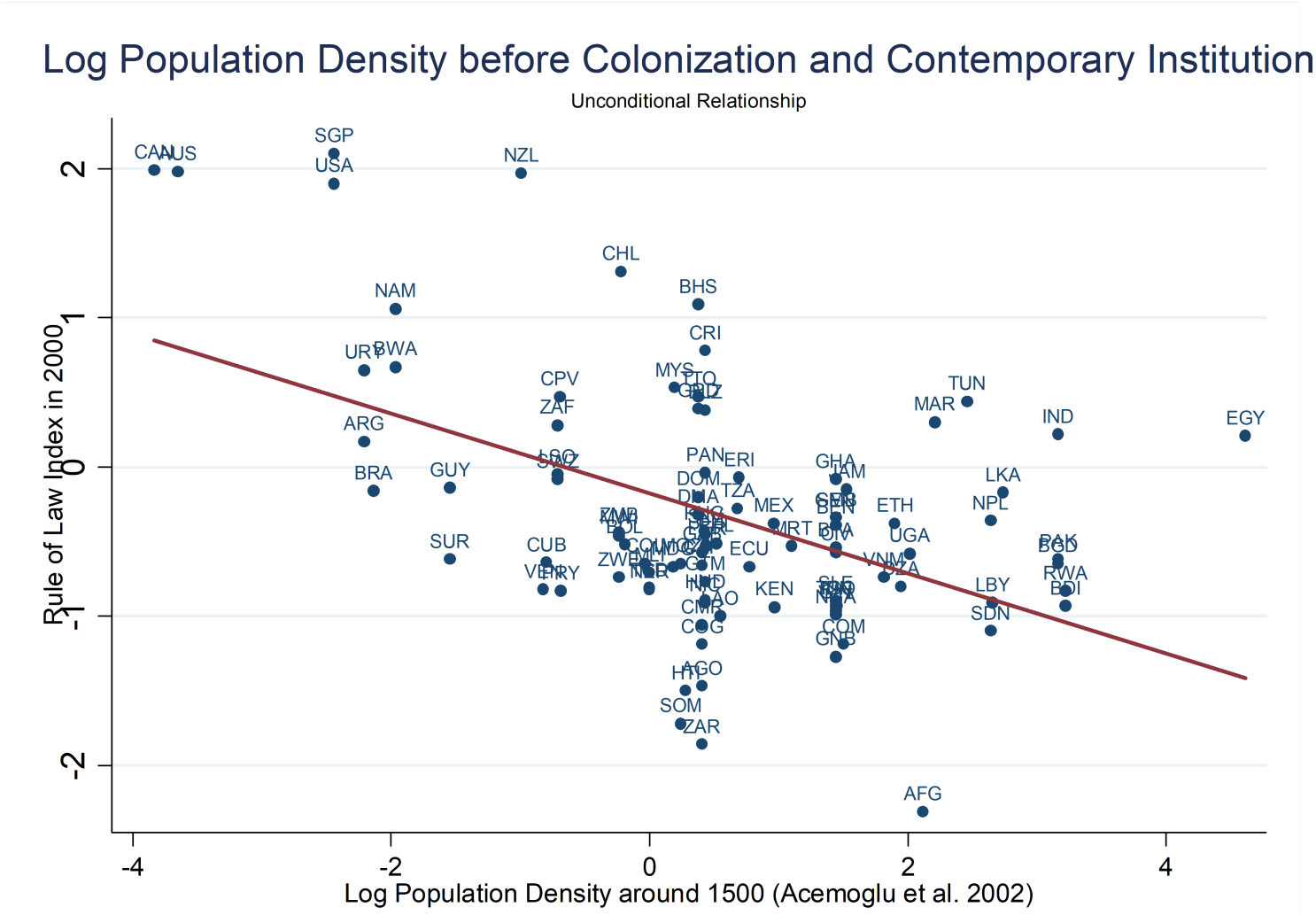
Cross-Country Patterns
Settler Mortality and Institutions. First-Stage



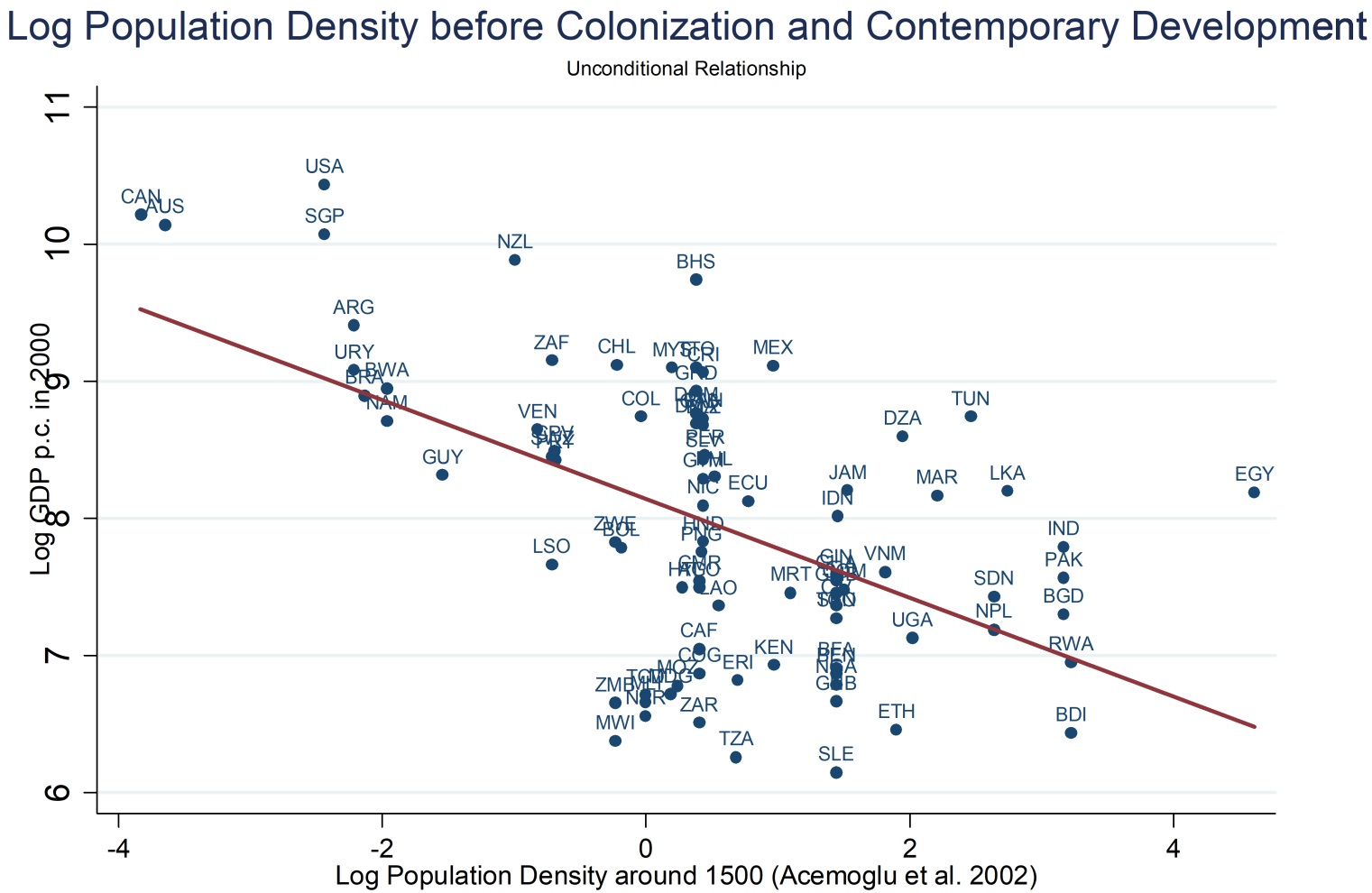
Cross-Country Patterns. Settler Mortality and Development. Reduced-Form



Cross-Country Patterns. Population Density and Institutions. First-Stage



Cross-Country Patterns. Population Density and Development. Reduced-Form



Cross-Country Patterns. Settler Mortality, Contemporary Institutions and Development

IV Estimates

	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, dependent variable is log output per worker (9)
Panel A: Two-Stage Least Squares									
Average protection against expropriation risk 1985–1995	0.94	1.00	1.28	1.21	0.58	0.58	0.98	1.10	0.98
	(0.16)	(0.22)	(0.36)	(0.35)	(0.10)	(0.12)	(0.30)	(0.46)	(0.17)
Latitude		−0.65		0.94		0.04		−1.20	
		(1.34)		(1.46)		(0.84)		(1.8)	
Asia dummy							−0.92	−1.10	
							(0.40)	(0.52)	
Africa dummy							−0.46	−0.44	
							(0.36)	(0.42)	
"Other" continent dummy							−0.94	−0.99	
							(0.85)	(1.0)	

Cross-Country Patterns. Settler Mortality, Contemporary Institutions and Development, cont.

IV Estimates

Panel B: First Stage for Average Protection Against Expropriation Risk in 1985–1995									
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^2	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 expropriation risk 1985–1995	0.52	0.47	0.49	0.47	0.48	0.47	0.42	0.40	0.46
	(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

Acemoglu, Johnson, and Robinson (2001, 2002). Main Results

- Settler Mortality and Population Density and Contemporary Under-Development
  - cond. on health, geography, ecology
- Settler Mortality and Population Density and Contemporary Institutional Development
  - cond. on health, geography, ecology
- Component of National Institutions driven by Settler Mortality and Pre-industrial Population Density correlates with Development
  - cond. on health, geography, ecology

Acemoglu, Johnson, and Robinson (2001, 2002). Takeways

1. **Colonial Origins of Comparative Development**
   - Role of transatalntic trade and the commercial revolution [Acemoglu, Johnson, and Robinson (AER 2004)]
2. **Reversal of Fortune**
   - Places, not people
3. **Institutions Main Mechanism** and Economic and Political Power
   - human capital [and infrastructure] investments of secondary role [Glaeser et al. (2004)]
   - geography-ecology matter mostly via shaping colonial strategy and institutions

Identification. Main Issues

Challenges and Critique

1. **Data and First-Stage Fit**. [Albouy, AER 2012; Acemoglu et al. AER 2012]
   - interpolation; quality; campaigns, bishops; gaps; outliers

2. **Mechanisms, Omitted Variables and Exclusion Restriction**
   - 2.1 The factors that affected the type of colonization impact development **only** via their effect on contemporary national institutions (conditional on other relevant characteristics)
   - 2.2 The type of colonization affected contemporary development **only** via shaping contemporary institutions

Challenges

Exclusion Restriction Violation (A)

- Unfavorable geography and health conditions is unlikely to affect development **only** via shaping colonial and then early post-independence, and contemporary national institutions.
  - Acemoglu et al. (2001, 2002) explore this in detail
  - See also Acemoglu and Johnson (JPE 2008) on health and development.

- **BUT**
  - almost impossible to account for geography (various aspects; measurement; differential effects)
  - limited degrees of freedom & multi-colinearity & measurement error [pathologies of cross-country specifications]

Challenges, cont. Other Channels

Exclusion Restriction (B)

- Human capital [Glaeser et al., JEG 2004; Acemoglu, Gallego and Robisnon, ARE 2011]
- Social capital and culture [Nunn, 2012]
- Early infrastructure (roads; railroads)
- Economic Paradigm
- Psychology
- More

Colonization and African Development. Introduction

Outline

1. Introduction
2. A Marco Viewpoint. The Colonial Origins of Comparative Development
3. **Unbundling Colonization**

Unbundling Colonization

Section Outline

1. Issues
2. Progress
3. Approach

Approach. Unbundle Colonization

Study Specific Aspects of Colonization

- **Institutions**
  - Direct vs Indirect Rule
  - Oppression, Violence, Prison labor, and conscription
- **Human Capital.** Schooling, Health
  - Missionary activity
  - Colonial schools and clinics, Medical campaigns
- **Transportation Infrastructure.** roads, railroads, ports
- **Taxation, Agriculture, and Trade Policy**
- **Structure of Colonial Economy**. mining, cash crops, marketing boards, commercial companies

Approach. Unbundle Colonization

Elements

- **Historical Approach**.
  - study closer history, as well as political science, anthropology
  - historical data [primary and secondary]
- **Political Economy**
  - Political and economic power
  - persistence and dynamics
- **Institutions.** Rules of the game
  - graft, rule of law, bureaucratic quality, regulation
  - role of local elites, traditional and new
- **Culture.** Which aspects?

Approach. Unbundle Colonization

Research Designs

- **Meso Approaches**
  - regional, ethnic, neighborhood, rural-urban variation
- **Micro Approaches**
  - Individual, household, family

Approach. Unbundle Colonization

Data

- **Geospatial Data**
  - location of schools, Missions, railroads, villages with medical campaigns, plantations, etc.
- **Individual Data**.
  - Education, chiefs, colonial officials, returned from the American Africans, etc
- **Narratives**.
  - Folk tales, case studies, stories, newspapers

Approach. Unbundle Colonization

Research Designs. Causal Effects, Origins, and Mechanisms

1. **Causal Identification**
   - quasi-random experiments
   - border analyses, RDD (national, ethnic)

2. **Mechanisms.** Contemporary data
   - administrative, census, large surveys
   - beliefs, norms, trust
   - satellite images on light density and other Big Data
   - lab-in-the-fields

Origins. geography, ecology, earlier history, ...

Taking Stock

- historical (institutional) inertia
  - data, theory, empirics
- advance on causation
- focus on colonization
- think about national policy endogeneity [see also Acemoglu et al., JME 2003]
- de jure and de facto political power