

Why is Africa Poor?

Maddison Lecture - University of Groningen

James A. Robinson

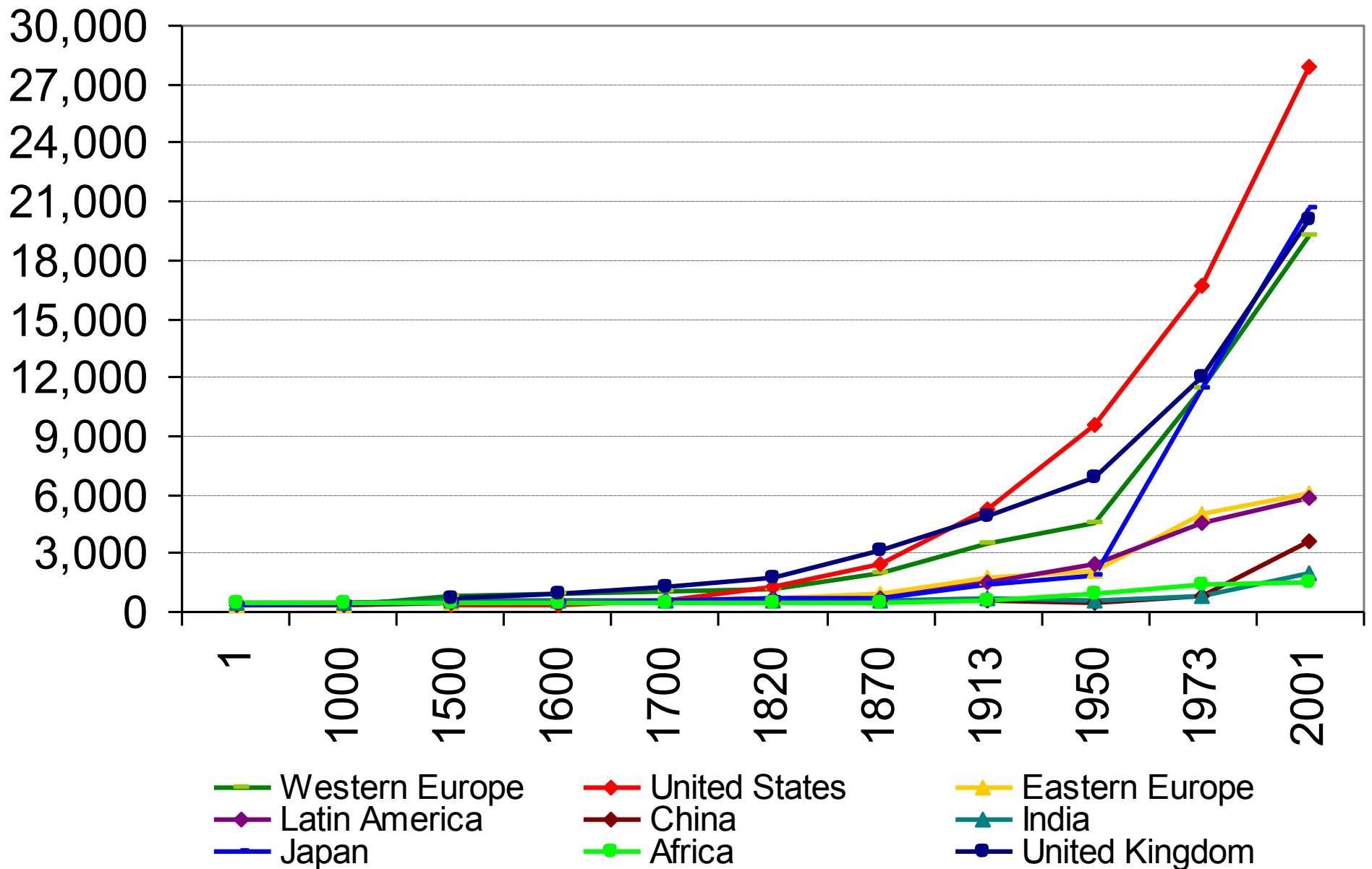
Harvard

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Introduction

- Africa is the poorest continent in the world in terms of GDP per-capita and the majority of the world's poor live in Africa.
- Good institutional explanations for this today
 - at the macro level: predatory and kleptocratic rule, weak states unable to enforce rules, order or provide public goods, lack of mechanisms of national accountability allowing rent extraction.
 - at the micro level: mechanisms for allocating land, lack of mechanisms of local accountability (chiefs), social institutions of mutual obligation.
- When and how did institutions become antithetical to development - **extractive** - in Africa?
- This is a fascinating question, which few people have asked (amazingly!), with a dearth of evidence, no conventional wisdom and on which reasonable people can disagree. I shall present one personal view which I believe is consistent with the facts I know.

Homage to Angus Maddison



Economic Development in Africa prior to the Scramble

Extractive Economic Institutions?

- There has been a long debate about whether Africa had the economic or political institutions necessary for growth in the pre-colonial period. I believe the answer is no:

- 1 Even in the late colonial period most Africans were engaged in subsistence activities outside of the formal economy.
- 2 Technology was backward - absence of the wheel, plow and writing outside of Ethiopia.
- 3 Slavery was endemic. In the 19th century various estimates suggest that in West Africa the proportion of slaves in the population was between $1/3$ and $1/2$ (Lovejoy, 2000).
- 4 States tended to heavily limit the extent of private enterprise, for instance in Asante (Wilks, 1979) and Dahomey (Law, 1977, Manning, 2004).
- 5 Ownership structure and allocation of land by chiefs not conducive to development (Goldstein and Udry, 2008).

Working for Subsistence

Table 6. Adult Male Population in Commercialized and in Subsistence Production, 1950

(Percentage of total male population over fifteen years of age)

<i>Territory</i>	<i>Commercialized production</i>			<i>Subsistence production</i>
	<i>Within indigenous economies</i>	<i>In outside wage earning</i>	<i>Total</i>	
Belgian Congo.....	29	30	59	41
French Equatorial Africa.....	23	15	38	62
French West Africa.....	18	5	23	77
Gold Coast.....	64	15	79	21
Kenya.....	5	25	30	70
Nigeria.....	39	4	43	57
Southern Rhodesia.....	9	40	49	51
Tanganyika.....	18	19	37	63
Uganda.....	29	12	41	59
TOTAL	27	13	40	60

Source: Calculations based on averages between upper and lower limits shown in table 3, above. See text for further explanation of derivation of figures.

Source: George Dalton (1976) "Review: An Economic History of West Africa by A.G. Hopkins," *African Economic History*, 1, 51-101.

Political Development in Africa prior to the Scramble

Extractive Political Institutions?

- Most crucial aspect is the relative lack of political centralization compared to Eurasia.
- This can be seen from Louis Putterman's state antiquity index which measures the length of period which people have lived under centralized states.
- The importance of this for development can be seen from case-study evidence (not a coincidence that only centralized states like Asante, Buganda, Dahomey and Ethiopia built real roads).
- Also evidence from the Standard Cross Cultural Sample show strong positive correlations between political centralization, public goods and development outcomes.

Index of State Antiquity (Bockstette, Chanda and Putterman (2002))

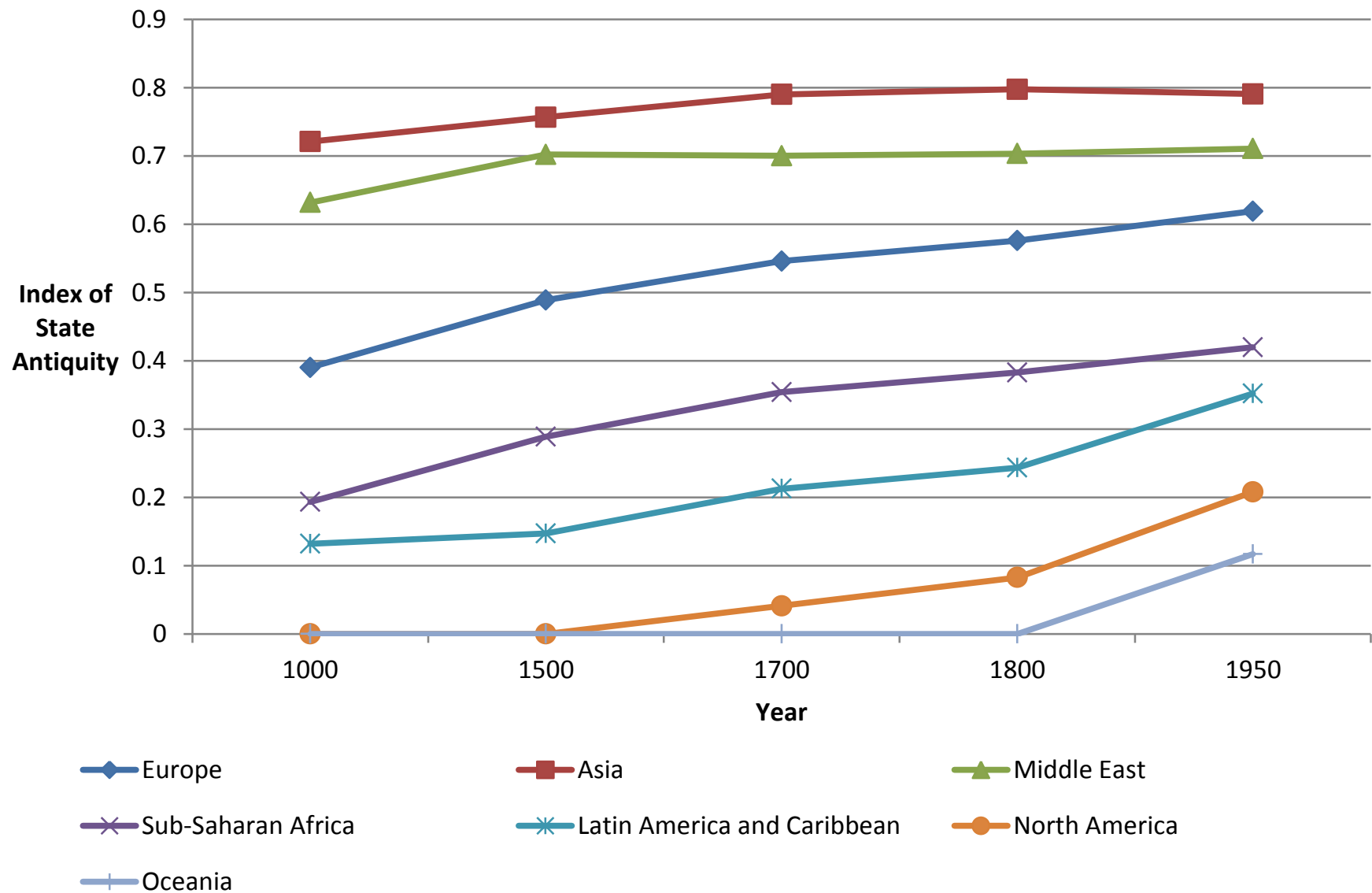


TABLE 2: POLITICAL CENTRALIZATION AND ECONOMIC INSTITUTIONS

	Market exchange	Mode of transport	Land transport routes	Availability of credit	Money	Police	Writing and record-keeping	Metal smelting	Property rights in land
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>Political Centralization</i>	0.252** (0.122)	0.432*** (0.0798)	0.425*** (0.0497)	0.221*** (0.0665)	0.486*** (0.0869)	0.927*** (0.0724)	0.678*** (0.0754)	0.0784*** (0.0266)	0.167** (0.0729)
Observations	95	183	179	168	182	178	184	184	97
R-squared	0.093	0.398	0.459	0.252	0.395	0.483	0.595	0.320	0.249

NOTES: Dependent variables in columns (1) to (9) are as follows: market exchange within local community (var. §1733), mode of land transport (head portage, wheeled vehicles, motorized vehicles, etc.) (var. §13), types of land transport routes (trails, unpaved roads, paved roads, etc.) (var. §14), availability of credit (var. §18), use of money as medium of exchange (var. §17), presence of police service (var. §90), availability of writing and record-keeping (var. §149), metal smelting (var. §129), and communality of land (var. §1726) — this variable is re-scaled, so that higher values refer to the availability of property rights in land. All columns include continent fixed effects and controls for geographic characteristics and the disease environment. Continent fixed effects provide separate intercepts for 5 regions: Africa, Mediterranean, Eurasia, the Pacific, North America and South America. Geographic controls are for longitude and latitude. Disease environment controls are for total pathogen stress (SCCS var. §1260), which is a measure of prevalence and severity of seven pathogens (leishmaniasis, trypanosomes, malaria, schistosomes, filariae, spirochetes, and leprosy). Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

When did African Institutions Become Relatively Extractive?

- We don't know the answer to this. Aksum had economic and political institutions on a par with the Eastern Roman Empire.
- But here is one way of seeing that at the start of the early modern period economic institutions were not good: Start with a famous paradox:
 - why, if population density was low in Africa so that labor productivity would have been high, were Africans exported as slaves at huge cost in terms of fatality?
- One answer could be that other factors made agricultural productivity very low irrespective of the factor proportions (Diamond, Sachs).
- An alternative: though it may have been true that the potential physical productivity of labor would have been high because of the factor proportions, the **appropriable** product would have been much lower because institutions were extractive.

Couldn't African Technologies rather than being Inefficient have been 'Adapted' to Different Circumstances?

- I don't think so. Here is one example.
- A previous generation of scholars argued that the lack of the use of wheeled transportation in Africa was because it was 'inappropriate', couldn't use wheeled transportation because of lack of draft animals and forest difficult to cut down.
- But simple social savings calculations show that early colonial railways (and other forms of wheeled transportation) generated significant social savings (in the order of 5-10% of GDP) and railways generated massive social rates of return (up to 100% in the Nigerian case).
- So head portage was **not** an efficient way of transportation given Africa's circumstances.

Using Railways rather than Head Porters generated Significant Social Savings And Massive Social Rates of Return

Table 13: Social Rates of Return %

	1909/1911	1924-25	1934-1935
Gold Coast	17.1	48.6	54.5
Sierra Leone	51.6	54.5	15.6
Nigeria	100.4	129.0	102.6

Source: Chaves, Isaias, Stanley L. Engerman and James A. Robinson (2012) "Reinventing the Wheel: The Economic Benefits of Wheeled Transportation in Early Colonial British West Africa,"

A Vicious Circle of Extractive Institutions

- One economic and political institutions are extractive this can easily lead to a vicious circle.
- Imagine economic institutions lead to slave exports. The dynamics this set up perpetuated and even intensified extractive institutions.
 - ① They made slavery more intense in Africa and human rights very insecure.
 - ② They destroyed states and created others which were based on rent (slave) seeking.
 - ③ They created political instability.

Slave Exports are negatively correlated with Pre-Colonial Political Centralization

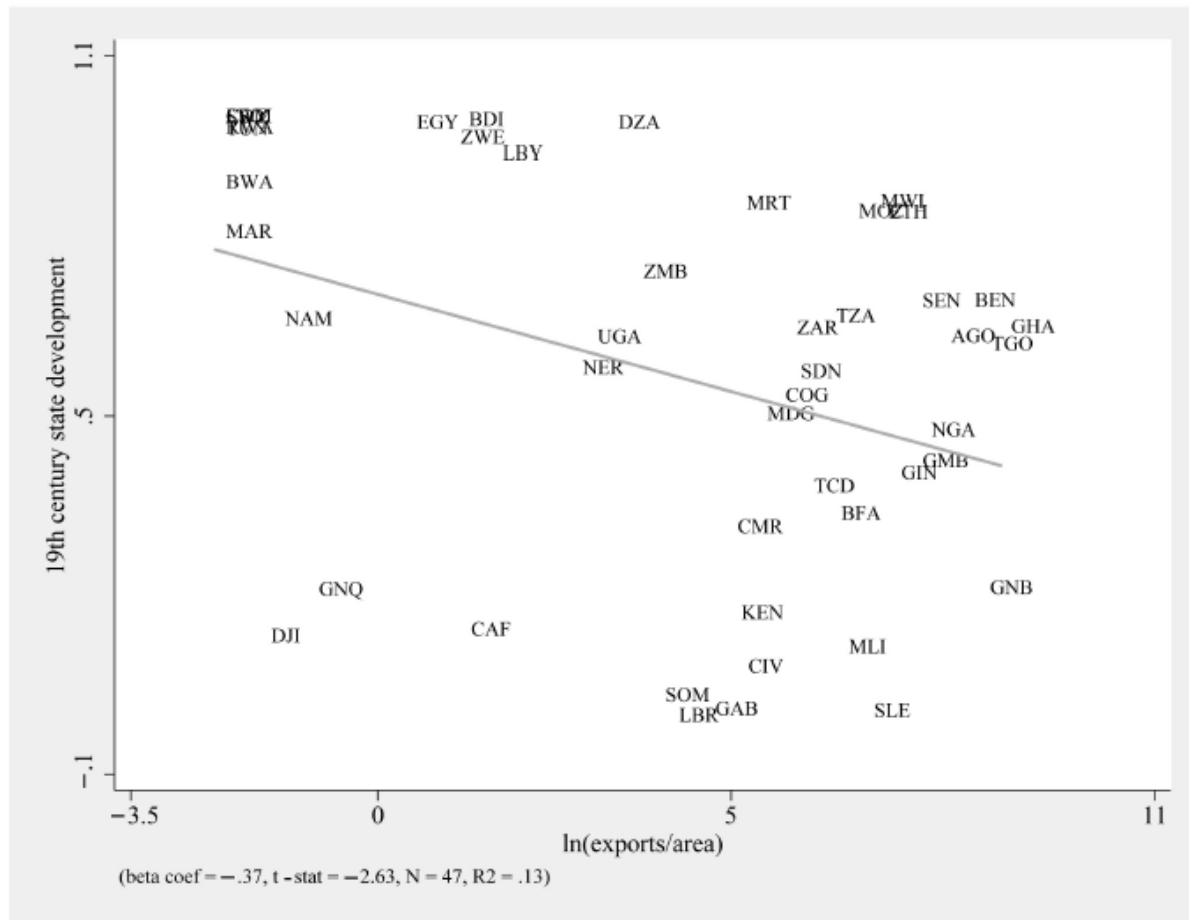


FIGURE VII

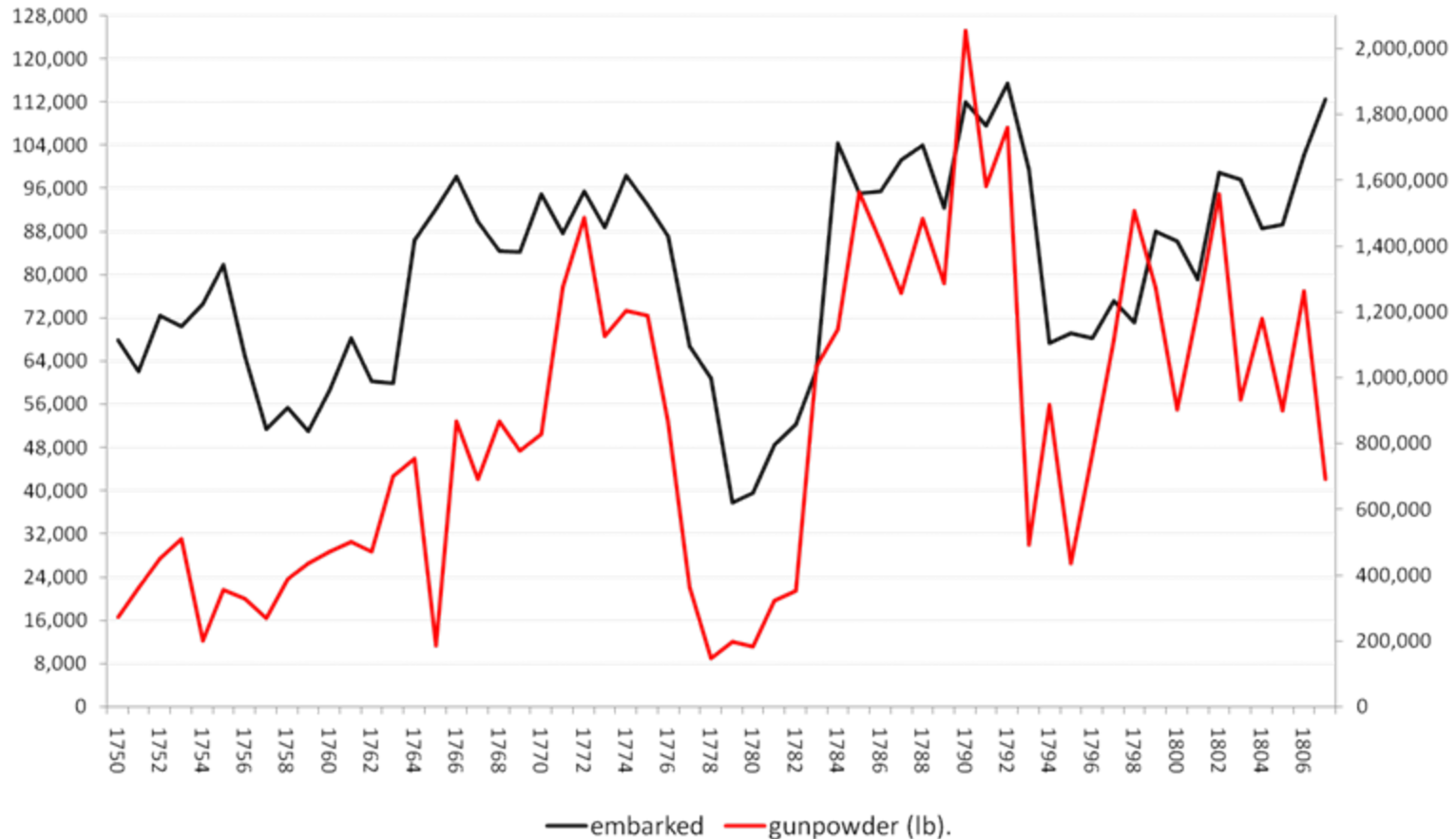
Relationship between Slave Exports and Nineteenth-Century State Development

Source: Nathan Nunn "The Long Term Effects of Africa's Slave Trades," *Quarterly Journal of Economics*, Vol. 123, No. 1, February 2008, pp. 139-176.

Slaves embarked bound for the Americas and British Shipments of Gunpowder to West Africa, 1750-1807

Slaves

Pounds of
gunpowder



Sources: Slave data from <http://www.slavevoyages.org>, data on shipments of gunpowder From Joseph Inikori (1977) "The Import of Firearms into West Africa, 1751-1807," *Journal of African History*, 18, 339-368.

From the Slave Trade to Colonialism

- The institutional consequences of the slave trade made African even more vulnerable to European colonialism.
- There are at least three views on the impact of colonialism
 - 1 Too short to influence anything (Jeffrey Herbst)
 - 2 The Eccentric Consensus: colonial officials and academics such as Peter Bauer and Niall Ferguson agree with Marxists like Lenin and Bill Warren's *Imperialism: Pioneer of Capitalism* that colonialism stimulated economic growth in Africa: it brought modern institutions, technologies and organizational forms and Europeans would not have bothered understanding what caused tropical diseases if they had not been intent on colonization.
 - 3 Most important source of African underdevelopment - the locus classicus of which is Walter Rodney's *How Europe Underdeveloped Africa*.

Institutional Legacies of Colonialism

Positive Arguments

- Europeans ended slavery, introducing modern legal systems and methods of administration and eventually constructing modern democratic institutions.
- Economic institutions improved, not just because slavery was abolished but also because Europeans made property rights secure and brought to an end conflicts within African society (which they had previously heavily exacerbated by generously supplying anyone who could pay with firearms, Inikori, 1977).
- They also started schools where there were none.

Institutional Legacies

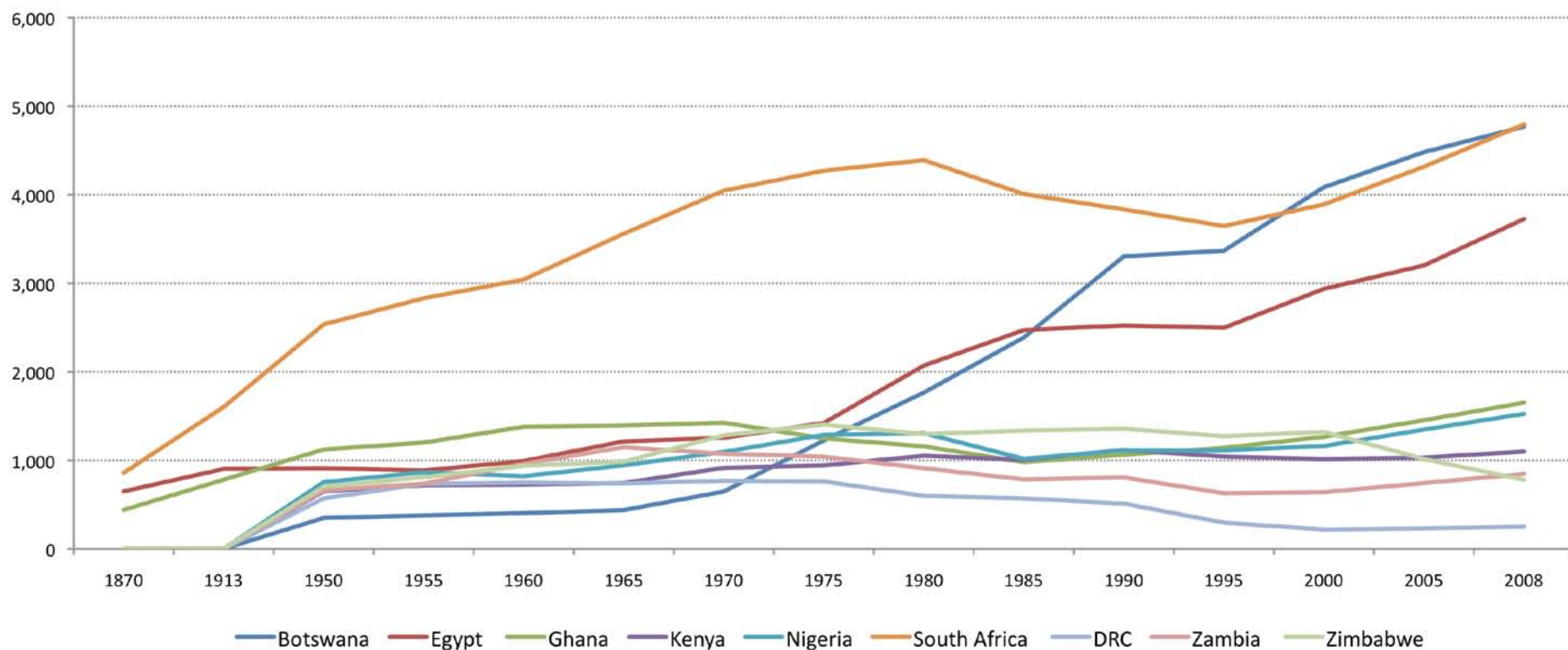
Negative Arguments

- 1 Perverse effects of particular colonial institutions, such as agricultural marketing boards (Bates, 1981).
- 2 Colonialism created an arbitrary state system which has led to political conflicts, instability and dictatorship (Engelbert, 2000).
- 3 Colonial authorities created “gate-keeper states” which were only interested in ruling rather than in developing the countries and these have left a path dependent legacy (Cooper, 2002).
- 4 The political authoritarianism of the colonial state is a direct source of the authoritarianism that has plagued Africa (Young, 1994) (Smith and Mugabe).
- 5 Structure of colonial indirect rule warped local institutions of accountability making them more autocratic (Mamdani, 1996).
- 6 Colonialism created and shaped identities and cleavages in dysfunctional ways (Hutu and Tutsi).

Economic Development in Africa during and after colonialism.

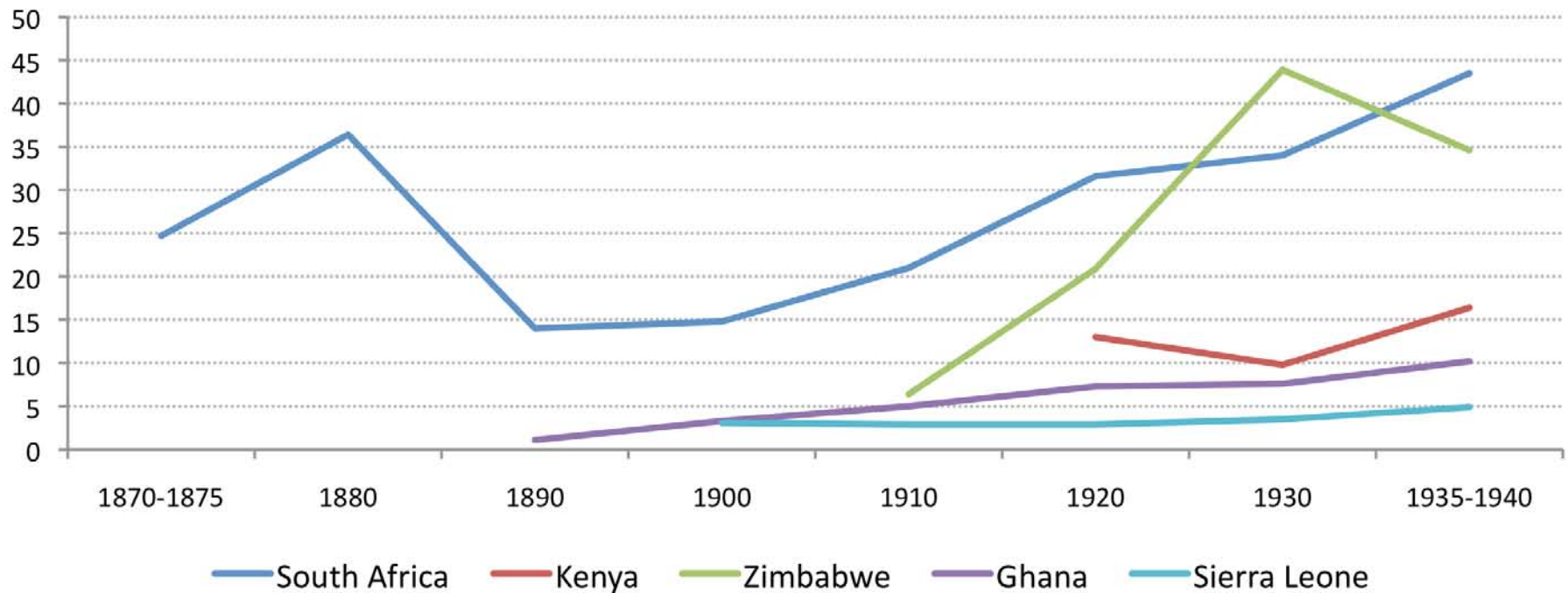
- The broad pattern of GDP per-capita is that on average this increased during colonialism (in the places for which there is reliable data) relative to the base year of around 1885.
- Europeans brought technology, such as railways and mining techniques and integrated their colonies more fully into world trade taking advantage of existing patterns of comparative advantage.
- Nevertheless, the rates of economic growth were extremely modest.
- Existing incomplete data also suggests that stature and life expectancy improved as did literacy and educational attainment from very low bases (Prados de la Escosura, 2011).
- After independence much of this went into reverse (see slide), even increasing height (Cogneau and Rouanet (2011) and Austin, Baten and Moradi (2011) on Ghana).

GDP Per-Capita in Sub-Saharan Africa, 1870-2008



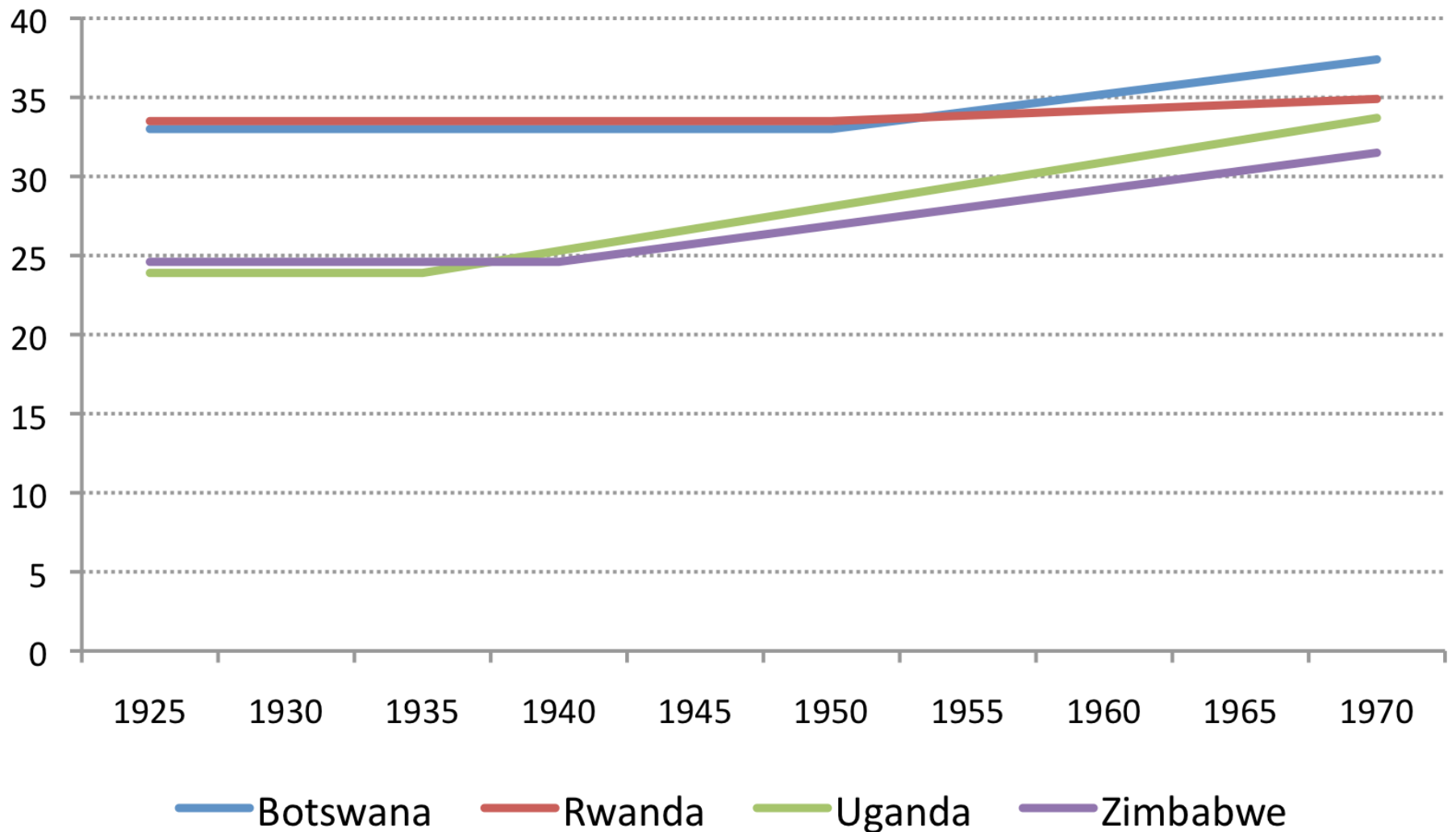
Source: Angus Maddison

Primary School Enrollment Rate, 1870-1940



Source: Benavot, Aaron and Phyllis Riddle (1988) "The expansion of primary education, 1870--1940: Trends and Issues," *Sociology of Education*, 66 (3), 191--120.

Life Expectancy at Birth



Source: Riley, J.C. (2005) "Estimates of Regional and Global Life Expectancy, 1800-2001", Population and Development Review, 31(3), 537-543.

Living Standards for Africans

- Even if there may have been a correlation between the colonial period and improvements in average living standards this does not imply that Africans incomes increased with colonialism.
- This can easily be seen from a simple calculation in the cases where Europeans expropriated large amounts of land (Angola, Kenya, Mozambique, Namibia, South Africa, Zimbabwe).

Economic Consequences of the Natives Land Act of 1913

- Let L be the total stock of land and N be the black workforce.
- Denote w^b the living standards of Africans before land expropriation and w^a the level afterwards.
- Assume (improbably) that Africans are paid the value of their marginal product.
- Prior to land expropriation we have

$$w^b = \alpha A N^{1-\alpha} L^{\alpha-1} \quad (1)$$

where A is total factor productivity and $0 < \alpha < 1$ is a constant.

- Now the Native Land Act of 1913 allocated 7% of land to Africans we have that after land expropriation African living standards are given by

$$w^a = \alpha A ((0.07) N)^{1-\alpha} L^{\alpha-1} \quad (2)$$

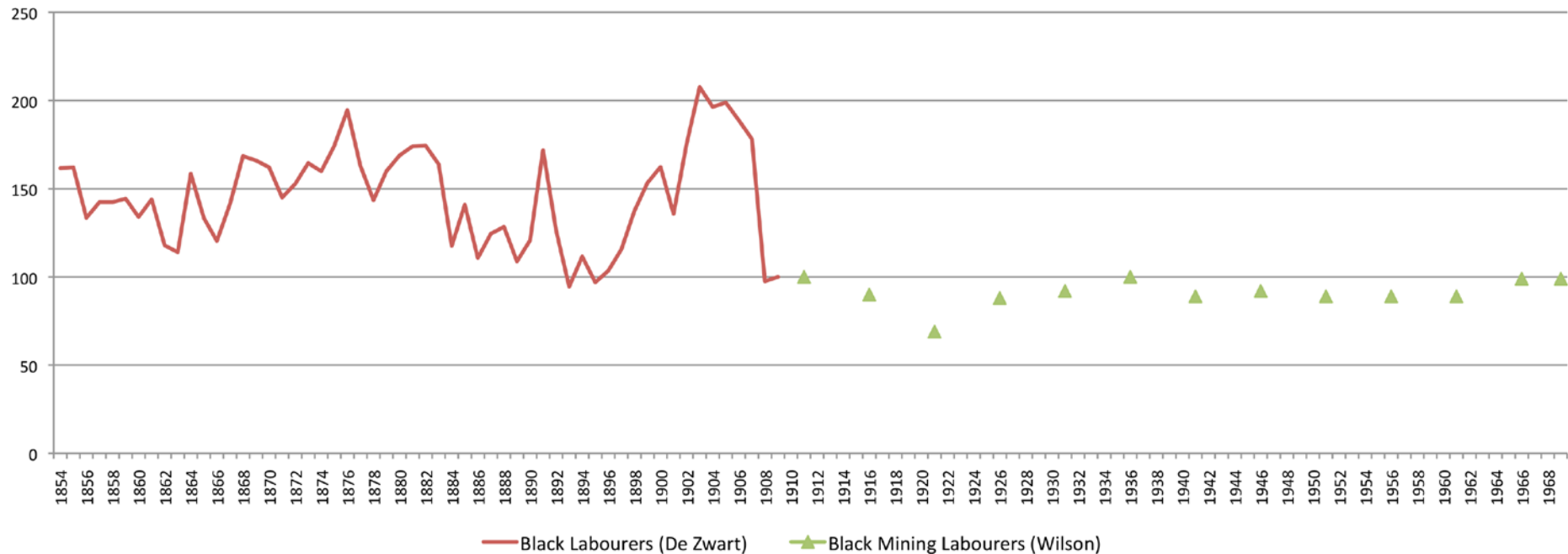
Now divide (2) by (1) to derive

$$\frac{w^a}{w^b} = (0.07)^{1-\alpha}$$

Economic Consequences of the Natives Land Act of 1913

- If all factor and product markets are competitive then we can calibrate this equation by setting α equal to the share of wages in national income.
- This is a rather heroic set of assumptions in the context of 1913 South Africa. Nevertheless, imagine it were true. Then, for $\alpha = 2/3$ we get $\frac{w^a}{w^b}$ is approximately 0.5 suggesting that expropriating 93% of the land would lead to a 59% decline in African living standards.
- That this figure is reasonable is seen from looking at de Zwart's (2011) data. Though his data comes only from the Cape Colony and is before the 1913 Land Act he finds an approximate 50% fall in African real wages. Bowden and Mosley (2010) for Kenya and Zimbabwe. Wilson (1972) found a smaller fall for gold miners.
- One consequence was massive increases in inequality (Bigsten, 1986).

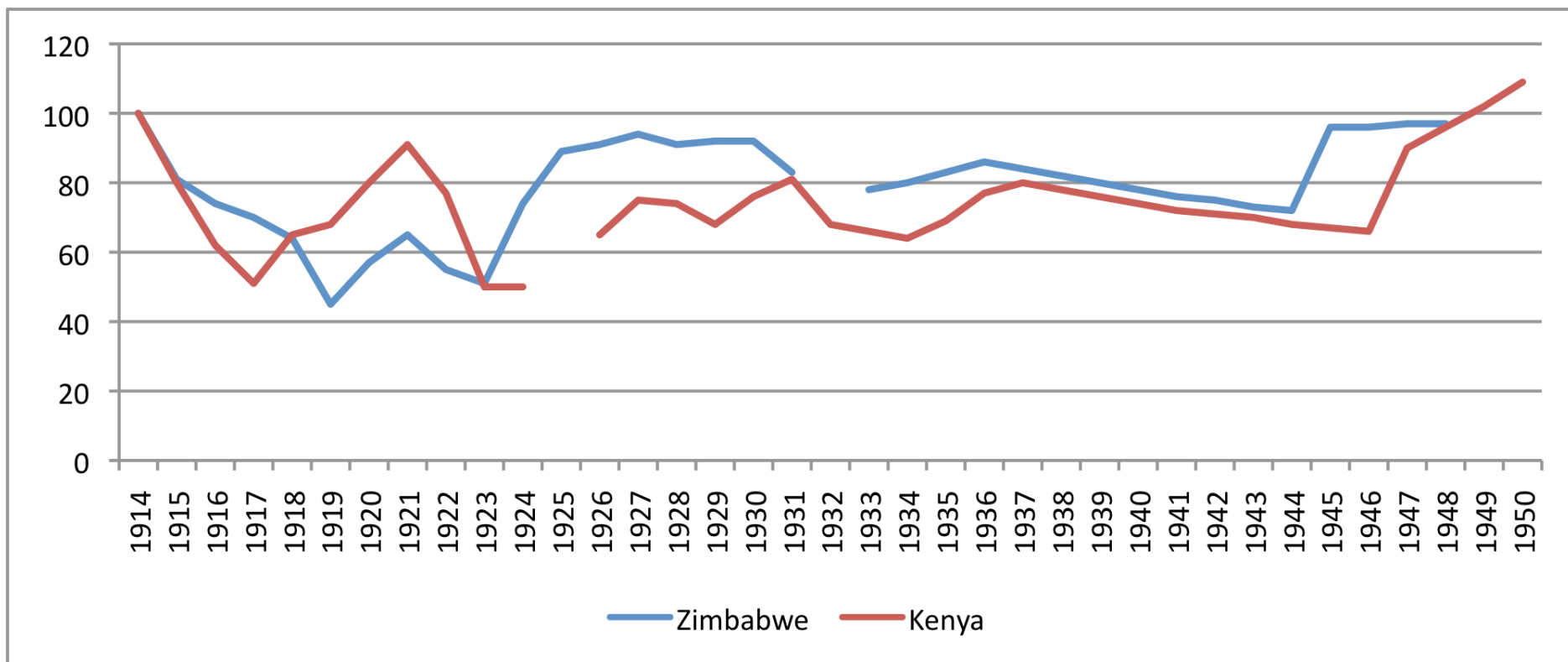
Real Wages for Africans in South Africa



Sources: de Zwart, Pim (2011) "South African Living Standards in Global Perspective, 1835-1910," *Economic History of Developing Regions*, 26, 48-73.

Wilson, Francis (1972) *Labour in the South African gold mines, 1911-1969*, Cambridge: Cambridge University Press.

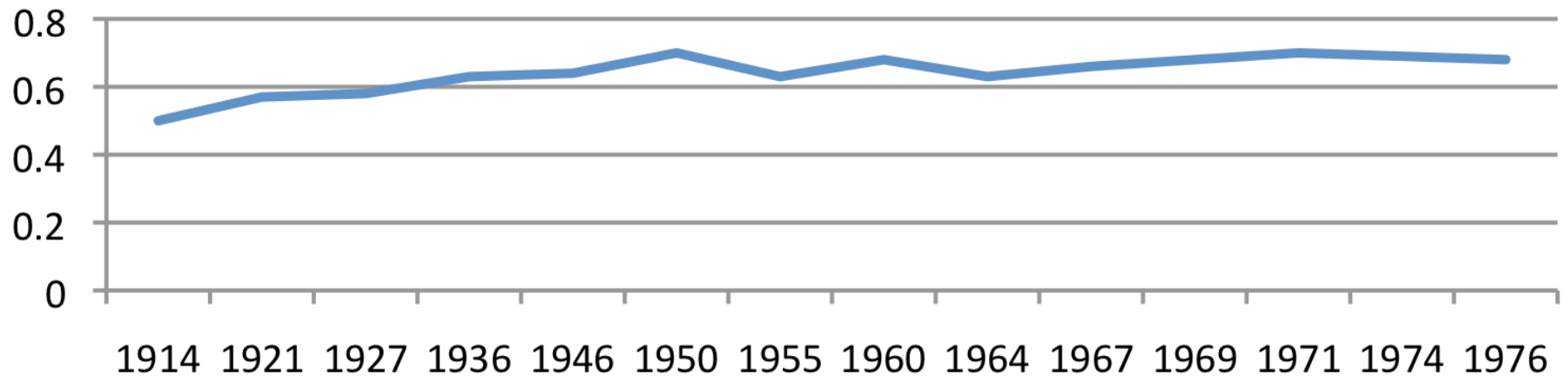
Real Wages for Africans in Kenya and Zimbabwe



Sources: Bowden, Sue and Paul Mosley (2010) "Politics, public expenditure and the evolution of poverty in Africa 1920-2009,"

Rising Income Inequality in Settler Colonies

GINI coefficient Kenya

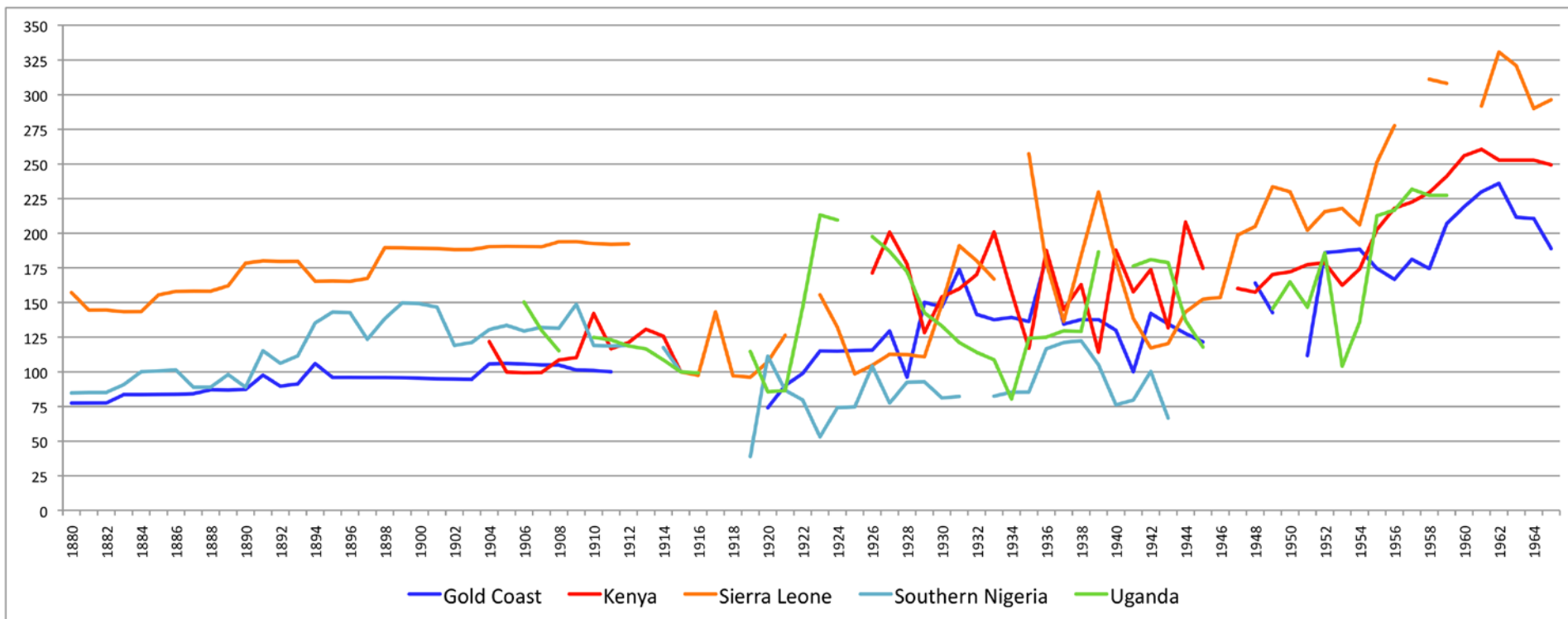


Source: Bigsten, Arne (1986) "Welfare and economic growth in Kenya, 1914--76,"
World Development, 14(9), 1151-1160.

Other Evidence

- Frankema and van Waijenburg (2011) have collected data on nominal wages and prices extracted from colonial Blue Books to construct real wage series for a number of British African colonies.
- This data (if I understand it) represents only the formal economy, a small part of the labor market.
- Nevertheless, though there are examples of quite large falls in real wages, for example in Uganda and Southern Nigeria, there is also evidence of improvements in real wages for the colonial period taken as whole, for example in Ghana and Sierra Leone

Real Wages for Africans in other British Colonies



Source: Frankema, Ewout and Marlous van Waijenburg (2011) "Real Wages in British Africa, 1880-1940," University of Utrecht.

Three Types of Colonies

- The above discussion suggests that it is useful to distinguish between different types of colonies where the development impact may have been different
 - ① Those with a centralized state at the time of Scramble for Africa, such as Benin, Botswana, Burundi, Ethiopia, Ghana, Lesotho, Rwanda, and Swaziland.
 - ② Those of white settlement, such as Kenya, Namibia, South Africa, Zimbabwe, and probably the Portuguese cases of Angola and Mozambique as well.
 - ③ Everyone else - colonies which did not experience significant white settlement and where there was either no significant pre-colonial state formation (like Somalia or South Sudan) or where there was a mixture of centralized and uncentralized societies (like Congo Brazzaville, Nigeria or Sierra Leone).

Plausible Counter-Factuals

International Dissemination and Interaction

- Reasonable to assume that all groups would have continued to experience the type of contact with the rest of the world they had had prior to the Scramble for Africa and which impinged on them when they were colonies and afterwards.
- ① This implies missionaries would have gone to convert people and built schools (Nunn, 2009, Frankema, 2010, 2011).
- ② The League of Nations would have tried to abolish coerced labor.
- ③ The World Health Organization would have tried to disseminate medical technology.
- ④ The World Bank and IMF would have lent them technical assistance and money.
- ⑤ The Cold War would have intervened in much the same way.

Plausible Counter-Factuals

Institutional Trends

- Assume that the trends in economic and political institutions we can discern in the 19th century would have continued (obviously very heterogeneous).
- States in the process of centralization (Asante, Buganda) and institutional reform (Tswana states) would have carried on with this process.
- Polities lacking states, Somalia, South Sudan, would not have acquired them.
- African countries would have continued to export, as many had prior to 1885 and they would have tried to adopt technology (e.g. Asante and Ethiopia with railways).

Balance of the Evidence

- In the first two types of colonies there is a clear case for colonialism retarding development
 - ① Colonies which corresponded to a pre-colonial polity: there was the essentials of order and public goods provision which could have been the basis for development, colonialism stopped the existing dynamics of centralization and severed links of accountability (indirect rule) and in many cases created/intensified conflicts.
 - ② Colonies of large scale white settlement: mass immizerization associated with land expropriation, creation of huge inequalities, institutionalized racism. These colonies were more successful on average during colonialism, but had worse problems to deal with afterwards (Zimbabwe).
- Many of these mechanisms of course operated in the third type of colony.

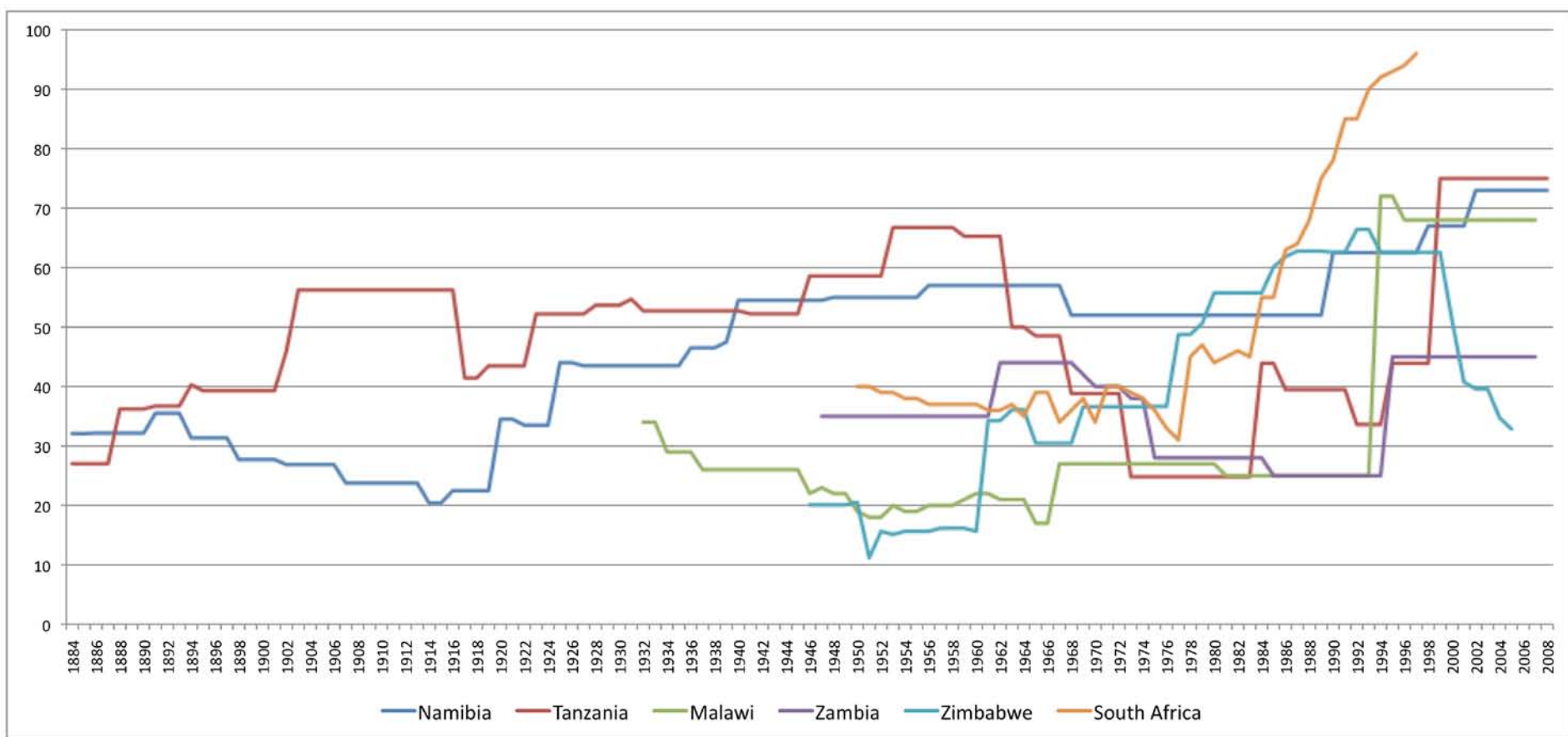
Colonialism and Institutions: Slavery

- Many colonists argued that the abolition of slavery was a key goal and payoff of colonial rule. But...
- ① It took a long time to abolish slavery in most African colonies. For example, in Sierra Leone it was only finally made illegal in 1928, in Ghana 1930 and in Nigeria 1936
- ② Not clear to what extent slavery vanished because of these laws (which had to be enforced) or because of economic changes. At least in the Ghanaian case such changes had little to do with the colonial powers (see, Austin, 2008).
- ③ The colonial state extensively used forced labor to build infrastructure.
- ④ Slavery was coming to an end everywhere in the world in the 20th century and not clear that slavery ended any faster in colonies. Slavery was abolished in 1915 in Thailand and 1928 in Iran. Even in Africa the non-colony of Liberia was forced by international pressure in the 1920s to abolish, if not slavery, then something very close to it.

Colonialism and Institutions: Private Property Rights

- We can actually say something empirically about this as the result of a very innovative project organized by Johannes Fedderke and his colleagues and students who have been coding institutional variables for a large number of African countries during the colonial period.
- The data has drawbacks
 - ① It focuses on the laws and de jure situation.
 - ② It does not tell us about the institutional impact of the transition to colonialism
- But it tells us many interesting things. Here I examine the property rights index.
- This data does not suggest to me that European colonialism brought benefits in terms of better private property rights.

Private Property Rights Index



Source: Johannes Fedderke and colleagues.

Conclusions on Colonialism

- I summarized some of the facts and conceptual issues relevant to determining the impact of colonialism on the development of Africa.
- Two types of colonies are likely less developed today than they would have been absent colonialism.
- Africa was the poor and technologically backward in the first half of the 19th century. Nevertheless, so were other parts of the world, Japan, Thailand, most of Latin America, and they are much more prosperous today.
- Colonialism did bring some benefits in terms of technology, peace and an access to and implantation of modern institutions. Yet little attempt was really made to make such benefits endure, and many were restricted to the colonial period. They also brought racism, discrimination, inequality and seriously warped many African political and economic institutions.
- Once the European powers left, much of what was positive was ephemeral and went into reverse while many of the negatives endured.

What Set this Vicious Circle in Motion?

- But colonialism and post-colonial economic decline are only the most recent incarnations of a long vicious circle of extractive institutions in Africa.
- Why did Africa get onto this path?
- Let me end by presenting three different hypotheses:

What Set this Vicious Circle in Motion?

A Vansinerian Model - Fundamental Differences

- Africa differed in fundamental ways from the rest of the world that set it on a different path of economic and political development.
- Which fundamentals? Consider political centralization.
- A simple hypothesis would relate this to geography - agricultural productivity was low, population density low, state formation retarded.
- **Problem with this view:** Political centralization is uncorrelated with population density in Africa!
- These regressions also show that there is something different about the forces lying behind political centralization in Africa.
- **Alternative Hypothesis:** African social structures such as Age Sets make it very difficult to concentrate political power. Political centralization involves one clan/lineage dominating another (Percys versus Nevilles in England's Wars of the Roses, the clan of Ndori as described by Jan Vansina is the creation of the Nyiginya Kingdom (Rwandan state) in the 17th century).

TABLE 3B: CORRELATES OF STATE FORMATION
(AFRICA SUBSAMPLE, WITH CONTROLS)

<i>Dependent variable: Level of State Centralization (v83)</i>						
	(1)	(2)	(3)	(4)	(5)	(6)
popdensity	0.124 (0.158)	0.0749 (0.185)				
beingattacked			-0.446 (0.316)	-0.457 (0.331)		
trade					-0.00595 (0.333)	0.00560 (0.355)
Region FE	YES	YES	YES	YES	YES	YES
Full Controls	NO	YES	NO	YES	NO	YES
Observations	40	40	32	32	22	22
R-squared	0.015	0.032	0.048	0.057	0.000	0.013

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

TABLE 2B: CORRELATES OF STATE FORMATION
(FULL SCCS SAMPLE WITH CONTROLS)

<i>Dependent variable: Level of State Centralization (v83)</i>				
	(1)	(2)	(3)	(4)
popdensity	0.393*** (0.0557)	0.367*** (0.0624)		
trade			0.194* (0.106)	0.245** (0.117)
Region FE	YES	YES	YES	YES
Full Controls	NO	YES	NO	YES
Observations	184	184	99	99
R-squared	0.370	0.379	0.320	0.376

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

What Set this Vicious Circle in Motion?

A Brennerian Model - Slight Initial Differences

- Extractive institutions have been the norm in world history.
- Western Europe diverged because of a series of idiosyncratic shocks interacting with small institutional differences.
- Robert Brenner hypothesized that the divergence between Western and Eastern Europe in the aftermath of a common shock - the Black Death - was because of slight differences in institutions - in the West peasants were a bit more organized, landed estates smaller, Lords less powerful.
- Africa as Eastern Europe? The wrong side of slight institutional differences?

What Set this Vicious Circle in Motion?

An Gibbensen Model - Different Shocks

"Encompassed on all sides by the enemies of their religion, the Aethiopians slept near a thousand years, forgetful of the world by whom they were forgotten." Edward Gibbon from The Decline and Fall of the Roman Empire

- An alternative is that Africa experienced very different shocks than Eurasia did.
- The basic extractive economic institutions of the absolutist Ethiopian empire, such as *gult*, and the feudalism created after the decline of Aksum, lasted until they were abolished after the 1974 revolution.
- Africa as Ethiopia (or maybe Bhutan)? Sufficiently isolated from global shocks that extractive institutions remained unpeturbed?