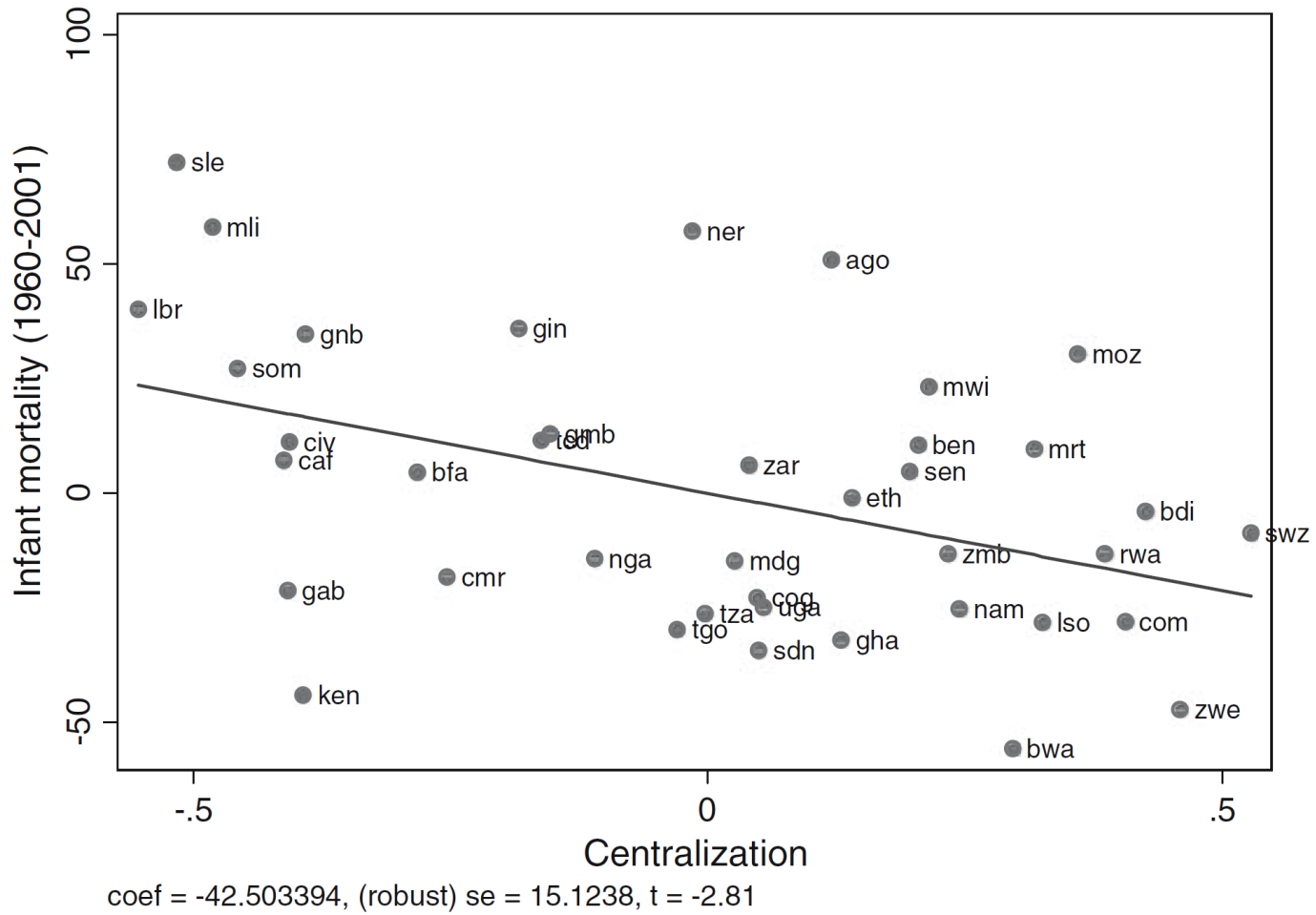
On Origins of African States

James Fenske

University of Warwick

Why you should care about African States



coef = -42.503394, (robust) se = 15.1238, t = -2.81

Fig. 3 Precolonial centralization and infant mortality (partial relation controlling for log of GDP/cap in 1960)

Source: Gennaioli and Rainer (2007, p. 197)

- Pre-colonial African states shaped colonial rule:
  - Systems of indirect rule relied on the power of pre-colonial authorities (Chanock, 1985; Mamdani, 1996).
  - Pre-colonial states affected the presence of missions (Jedwab et al., forthcoming; Falola and Heaton, 2008).
  - Regions of French West Africa with pre-colonial kingdoms had greater levels of resistance to settlement (Huillery, 2011).
  - Colonial forced labor systems drew on pre-colonial precedents (van Waijenburg, 2018).
- And they continue to shape post-colonial outcomes:
  - Pre-colonial states predict greater provision of public goods across African countries (Gennaioli and Rainer, 2007).
  - They predict greater development *within* African countries (Michalopoulos & Papaioannou, 2013).
  - They predict lower levels of civil conflict within African countries (Depetris-Chauvin, 2016).

A story: Geography and the State in Africa

Source: https://www.nationalgeographic.org/encyclopedia/great-zimbabwe/

- McCann (1999) describes several of the connections environmental historians have drawn between geography and states in pre-colonial Africa.
  - In the Sahel, states such as Ghana, Mali, and Songhay raised revenue from smallholder cereal farmers and trans-Saharan trade. The shifting boundaries of the Sahara shaped the rise and fall of states.
  - Great Zimbabwe, 1250-1450, thrived on cattle and may have declined due to greater moisture and the resulting exposure to the tsetse fly.
  - Aksum, before 700, prospered in part because of second nature geography (its position at the intersection of several trade routes) and an elaborate system of water storage and irrigation.
- Bates (1983) proposes a "Ricardian" theory of states in sub-Saharan Africa:
  - The state provides peace and order that makes trade and production possible. So: the gains from market promotion help explain states.
  - These gains are greatest where the products of different ecological zones can be traded.
  - Across 34 African societies, central monarchs are more prevalent on ecological boundaries.

Taking the story to data: Methods

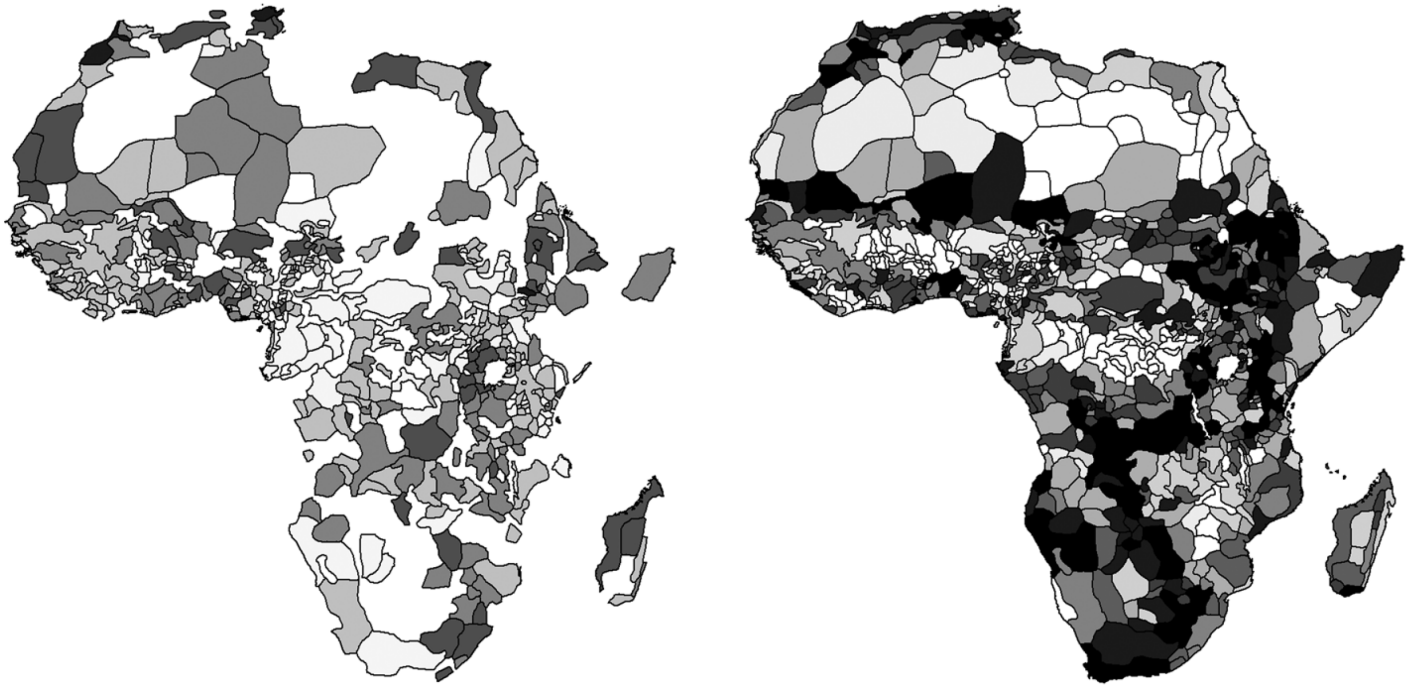


FIGURE 1. State centralization and ecological diversity. States, on the left, are from Murdock (1967). Darker regions have more centralized states. Ecological diversity, on the right, is computed using White (1983). Darker regions are more ecologically diverse.

Source: Fenske (2014, p. 618)

- In Fenske (2014), I set out to test Bates' theory in data.
- My unit of observation was the set of ethnic groups in Murdock (1967), which I joined to geographic data using the map in Murdock (1959).
- My main dependent variable was Variable 33 in Murdock – the number of levels of jurisdictional hierarchy above the local community.
- My main independent variable was "ecological diversity" – a Herfindahl index made from the shares of the ethnic group's territory that were accounted for by the vegetation types in White (1983).
- For exogenous variation, I constructed an instrument based on the difference between average rainfall in the wettest and driest parts of an ethnic group's territory.

Taking the story to data: Results

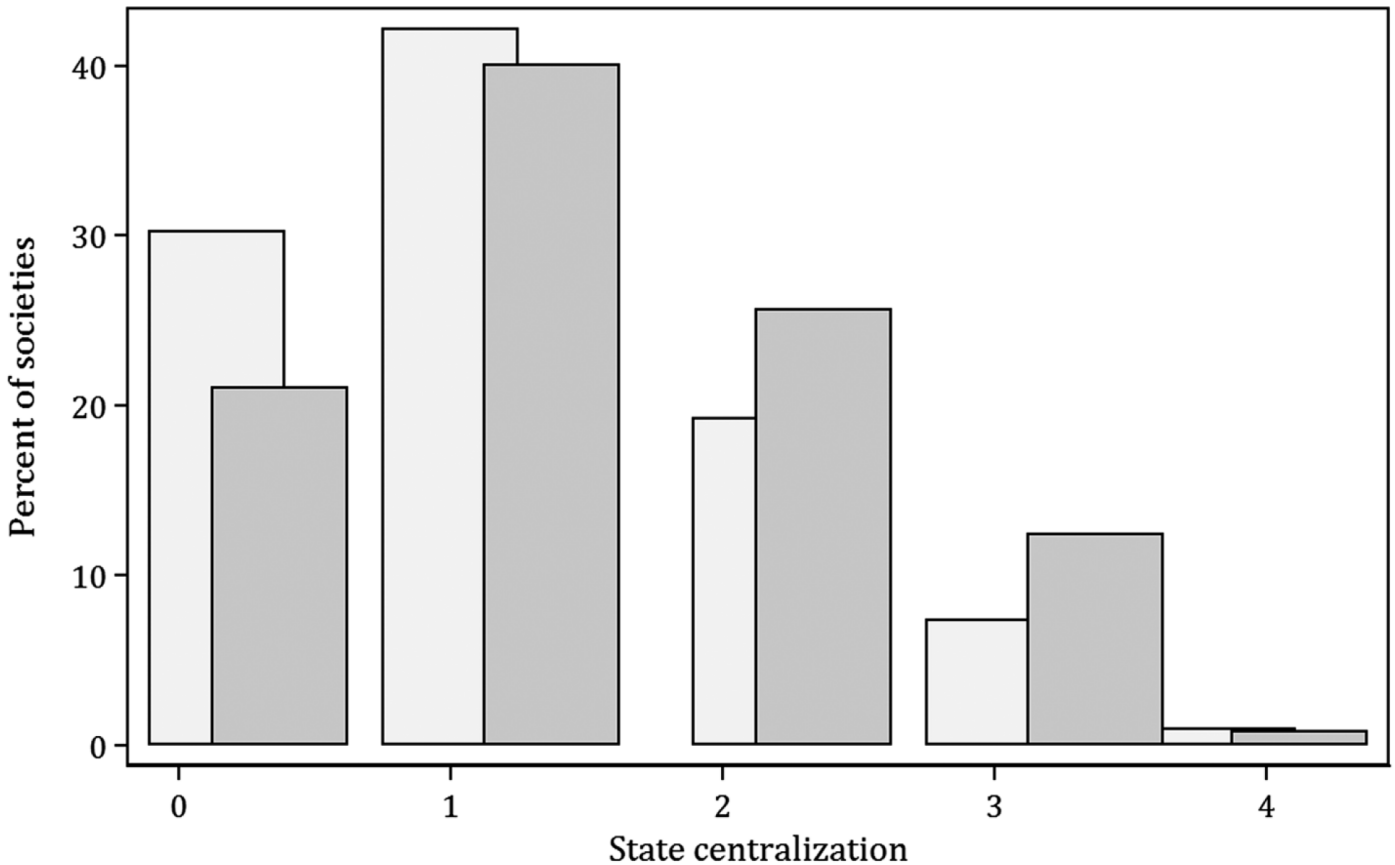


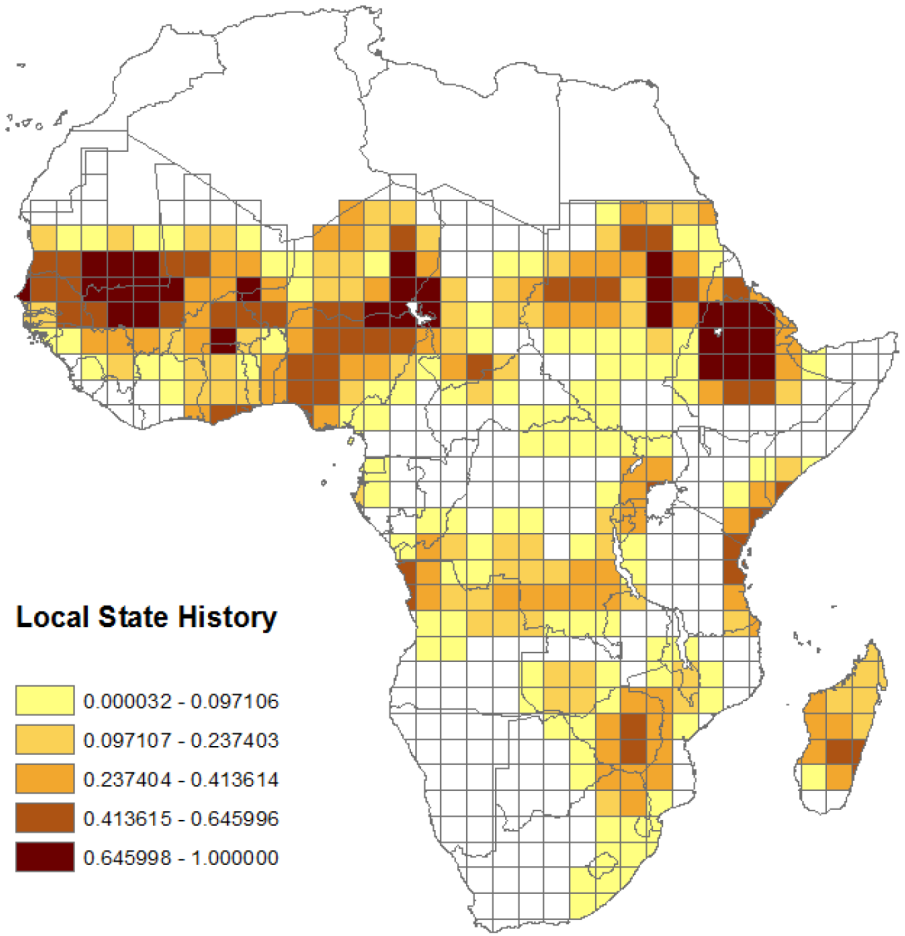
FIGURE 2. State centralization above and below median diversity. The dark bars are for ecological diversity above the median, the light bars for ecological diversity below it.

Source: Fenske (2014, p. 620)

- My results confirmed Bates' hypothesis: ecological diversity predicted states in pre-colonial Africa.
  - Magnitude? Move an ecologically homogenous society like the Tallensi or Yako in a typically diverse region like that of the Fur or Wolof; the probability of any state centralization rises 7 to 13 percentage points.
- This correlation was robust to alternative measures of states, alternative measures of the gains from trade, alternative estimators, instrumental variables, and tests for the possible influence of alternative estimators.
- This correlation is better explained by the link from trade to states than alternative channels: geographic size; conquest; isolated locations with of land quality; population density; ethnic diversity, and; environmental risk.
- Using ecological diversity as an instrument for African states confirms the result in Michalopoulos & Papaioannou (2013): pre-colonial states increase present-day development.

... with the benefit of hindsight

Figure 3: Spatial Distribution of State History Index



Source: Depetris-Chauvin (2016, p. 36)

- What would I have done differently?
  - There are many ways to operationalize the concept of ecologically driven gains from trade. Is diversity really better than distance from a border? Than polarization? Dickens (forthcoming) instead uses a measure based on the potential yields of New World crops.
  - My main measure of states comes from Murdock, an expert on Native Americans. My alternatives come from work in cross-cultural anthropology and so are at the ethnicity level. Depetris-Chauvin (2016) has created a clever alternative based on historic atlases.
- Are the results supported by other research?
  - Galor & Klemp (2017) confirm this result in their study linking genetic diversity to autocracy.
  - Other researchers, in ongoing work, have used my ecology measure or similar measures to predict trade in other samples.

A story: War and the State in Africa

Source: https://casbs.stanford.edu/people/charles-tilly

- Tilly (1975, 1992) notes that, between 1500 and 1800, major powers in Europe were at war more than 75% of the time.
  - To defend against the threat of war, rulers made fiscal innovations that increased revenues. "War made the state, and the state made war."
  - Because of ratchet effects and lower marginal costs of maintaining than establishing fiscal institutions, this increase in state capacity can persist, creating scope for "anti-persistence" of conflict (Morris 2014; Fearon and Laitin 2014).
  - Dincecco & Katz (2016) show that historic conflicts predict greater state capacity and greater GDP across countries in the present.
- Is Africa different? While there is evidence that pre-colonial states predict greater state capacity (Gennaioli and Rainer, 2007; Michalopoulos and Papaioannou, 2013) and less violence (Depetris-Chauvin, 2016) in the present, the "war makes states" logic may not hold due to:
  - ... the political geography of low population density, that led to raiding wars without decisive conclusions (Herbst, 2000; Reid, 2012).
  - ... the transatlantic slave trade, which shaped both war and states (Rodney, 1972; Inikori, 1977; Whatley, 2018).
  - ... colonization, which established artificial borders (Michalopoulos and Papaioannou, 2016) and did not allow pre-colonial conflicts to resolve (Bates, 2014; Reid, 2014).

Taking the story to data: Methods

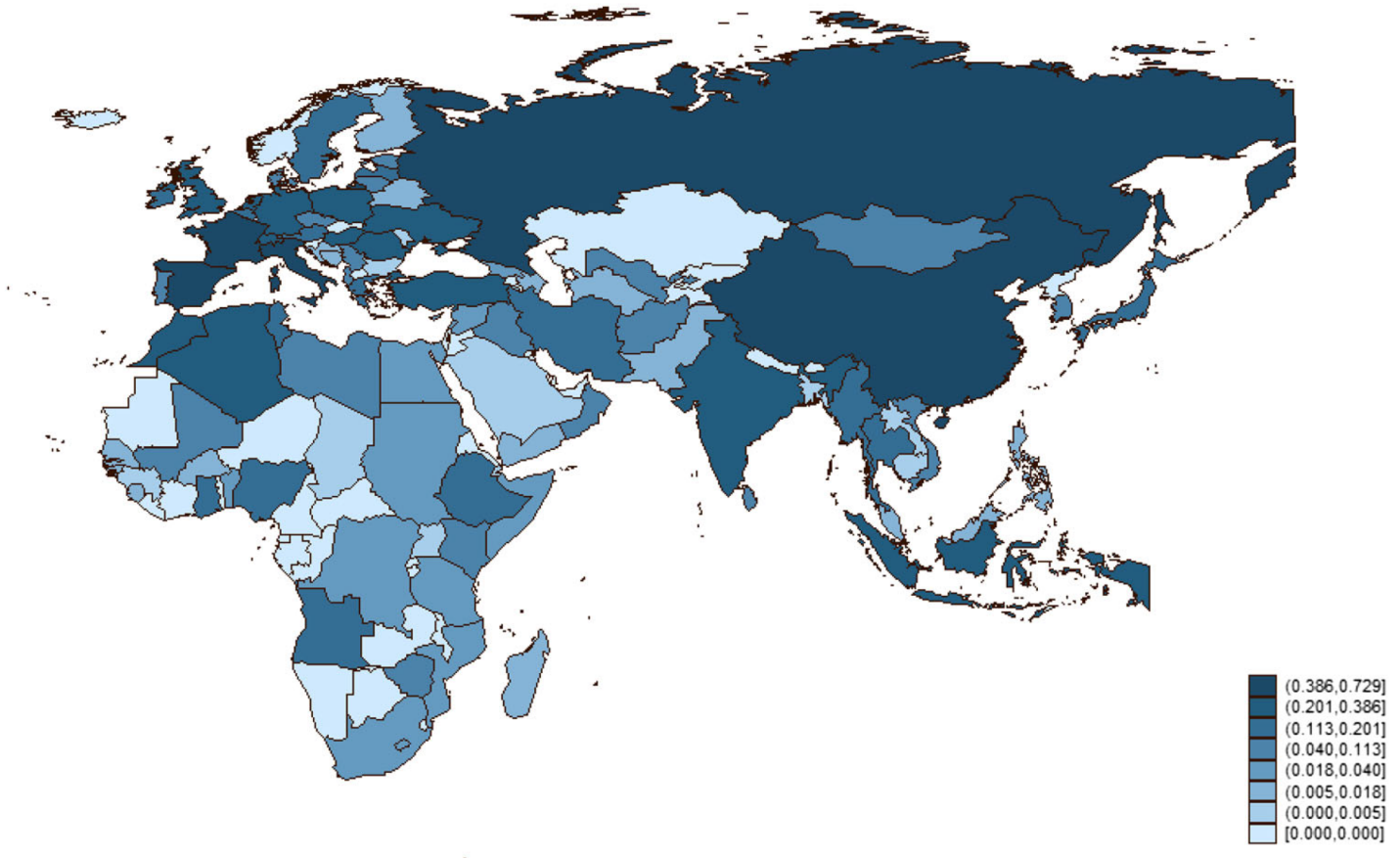


Figure 1: Historical conflict across the Old World
Note: Figure displays share of years from 1400 to 1799 in which a country experienced conflict on its soil. Countries with the largest share of historical conflict years receive the darkest shade, while those with the smallest share receive the lightest shade.

Source: Dincecco et al. (2019, p. 218)

- In Dincecco et al. (2019), my coauthors and I attempted to evaluate the Tilly story in Africa.
- Our unit of analysis is countries, and we focus on the Old World.
- Our first main dependent variable is the share of income taxes in total taxes from the IMF (2015).
- Our second main dependent variable is the share of years from 1950 to 2000 in which a country experienced a civil war, computed from Besley and Persson (2011).
- Our main independent variable is the share of years between 1400 and 1799 that a country experienced conflict on its soil, computed from Brecke (1999).
- To address selection and endogeneity, we show robustness to a number of controls, alternative samples, and tests from Altonji et al. (2005) for the possible influence of unobservables.

Taking the story to data: Results

Table 2: Historical conflict and state capacity: main results

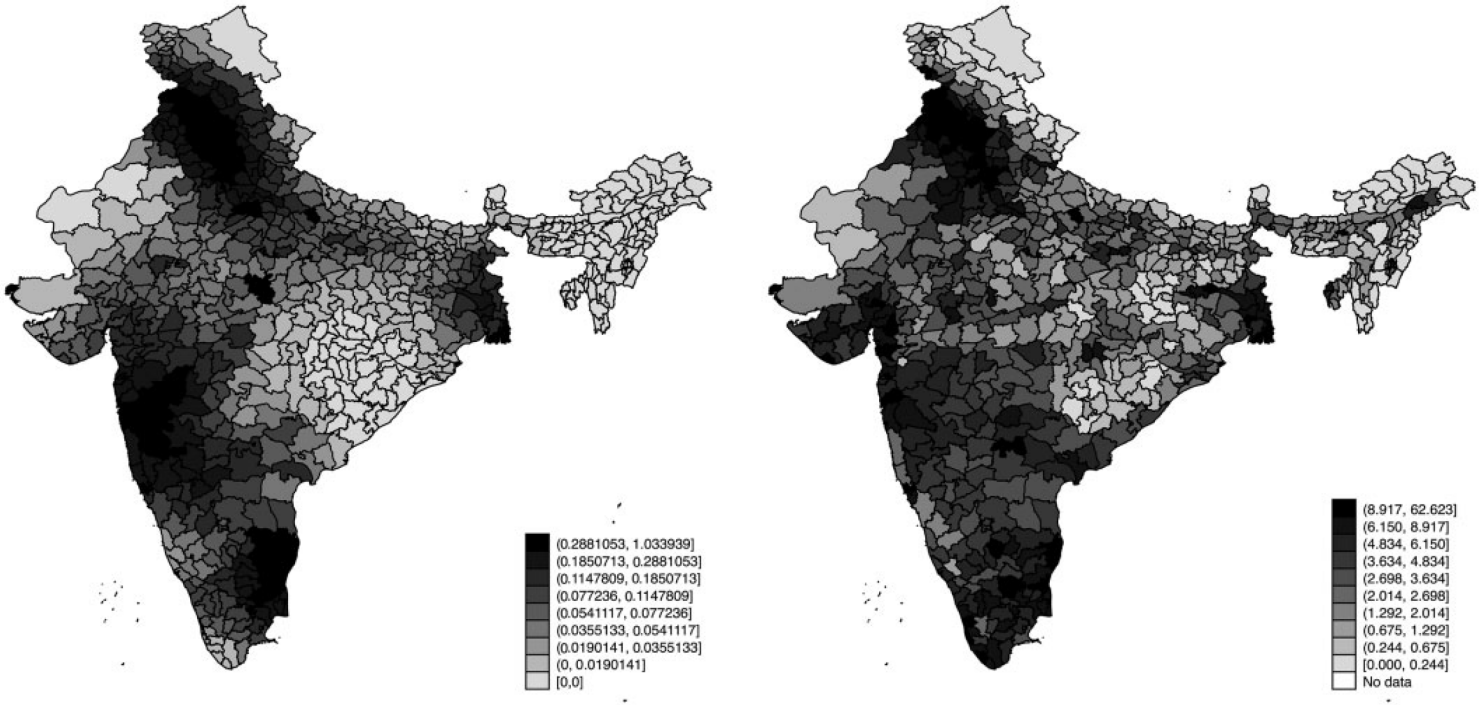
	(1)	(2)	(3)	(4)	(5)
Dependent variable	Income tax share, 1990–2014	Direct tax share, 1990–2014	Income tax/ GDP ratio, 1990–2014	Total tax/ GDP ratio, 1990–2014	Income tax share, 1990–2014
Conflict, 1400–1799	0.330***	0.600**	0.067*	0.048	0.556*
	(0.107)	(0.283)	(0.034)	(0.046)	(0.287)
	[0.003]	[0.044]	[0.052]	[0.333]	[0.056]
Conflict x Africa	–0.060	1.320	0.116	0.270	0.076
	(0.244)	(3.072)	(0.130)	(0.404)	(0.530)
	[0.806]	[0.671]	[0.375]	[0.505]	[0.887]
Conflict measure	Years	Years	Years	Years	Start
Continent FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
F-statistic	1.364	0.361	2.033	0.627	1.741
p-value	0.246	0.537	0.157	0.430	0.160
R-squared	0.265	0.716	0.451	0.516	0.243
Observations	110	37	110	118	110

Note: Estimation method is OLS. All regressions include full set of fixed effects for continents and country-level controls for log population density in 1500, log timing of Neolithic transition, log land suitability for agriculture, log absolute latitude, and area. F-statistic is for test of hypothesis that sum of coefficients for direct effect and interaction effect equals zero. Robust standard errors in parentheses, followed by corresponding p-values in brackets.
*** p<0.01, ** p<0.05, * p<0.1

Source: Dincecco et al. (2019, p. 221)

- Our results confirm that Africa is indeed different. While we cannot reject that the correlation between a history of warfare and state capacity in the present is similar in (sub-Saharan) Africa to the rest of the world...
- ... we find a positive correlation between past warfare and modern civil war in Africa that we do not find elsewhere.
- The standardized magnitude of the war-tax relationship is 0.357. The standardized magnitude of the war-war relationship in Africa is 1.549.
- Using Besley and Persson's (2014) typology, while historical warfare predicts "common-interest states" in the rest of the Old World, it predicts "special-interest states" in sub-Saharan Africa.
- As intermediate outcomes, we show that:
  - A history of warfare predicts more extensive railway networks on the eve of the First World War, but only outside of Africa.
  - Warfare before 1799 also predicts intra-African conflict in the late pre-colonial period.

... with the benefit of hindsight



(a) Conflict Exposure

(b) Luminosity

Source: Dincecco et al. (forthcoming, p. 12)

- What would I have done differently?
  - Not written a paper based on cross-country regressions, even if the state capacity outcomes are fundamentally at the country level.
  - Started with a source of exogenous variation in historic warfare.
- Are the results supported by other research?
  - These results are consistent with work by historians of Africa (Law, 1995) and by myself (Fenske and Kala, 2017) showing that both the slave trade and its disruption led to violence.
  - They are also consistent with a pattern that emerges from several papers by Mark Dincecco (e.g. Dincecco et al. (forthcoming)): the military competition framework applies beyond Western Europe in cases of dense population and political fragmentation.
  - Besley and Reynal-Querol (2014) show the persistence of conflict in Africa *within* countries.

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