



Further evidence on the link between pre-colonial political centralization and comparative economic development in Africa

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ABSTRACT

We examine the link between pre-colonial statehood and contemporary regional African development, as reflected in satellite images on light density at night. We employ a variety of historical maps to capture the former. Our within-country analysis reveals a strong positive correlation between pre-colonial political centralization and contemporary development (and urbanization). If anything, the association strengthens when we account for measurement error on the historical maps of pre-colonial political organization.

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1. Introduction

1.1. Previous research

In Michalopoulos and Papaioannou (2013) we examined empirically the role of pre-colonial ethnic institutions on comparative regional development within African countries. We combined information on the spatial distribution of ethnicities before colonization (as portrayed in George Peter Murdock's [1959 map]) and anthropological sources describing political organization at the time of colonization across ethnic groups (from Murdock (1967), Figure 1(a)), with regional variation in contemporary development, as captured by satellite images of light density at night. This approach follows Henderson et al. (2012) and subsequent works (e.g., Chen and Nordhaus (2011), Pinkovskiy (2013) and Hodler and Raschky (2014a)) who proposed proxying development (GDP) with luminosity (per area), especially for war-prone countries and for regional analyses where output data are scarce.¹

The analysis establishes that there is an association between pre-colonial political centralization and regional development across ethnic homelands. Our study offers supportive evidence to the arguments in the African historiography, dating to the work of Fortes and Evans-Pritchard (1940) on the salience of deeply-rooted organizational structures. Our findings also complement cross-country works showing a positive correlation between early statehood and subsequent development in a global sample (Bockstette et al. (2002)) and across African (Gennaioli and Rainer (2007)). While this correlation does not necessarily imply a causal relationship, it appears quite robust.² While hard-to-account-for unobserved features – related to geography, culture, or early development – may explain this long-run relationship, it is intriguing that ethnic-specific legacies dating back to mid-late 19th century still matter nowadays.

The link between pre-colonial centralization and regional development has been verified by a number of subsequent studies. Using two-stage-least-squares models, Fenske (2014) and Alsan (forthcoming) show that the geography–ecology predicted component of pre-colonial centralization is a robust correlate of regional

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¹ See also Hodler and Raschky (2014b), Hodler and Raschky (2014a), and Storeygard (2014), among others.

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² Michalopoulos and Papaioannou (2013) show that luminosity correlates with early political centralization, when they condition on dozens of pre-colonial ethnic characteristics, such as occupational specialization, economic organization, slavery, etc.

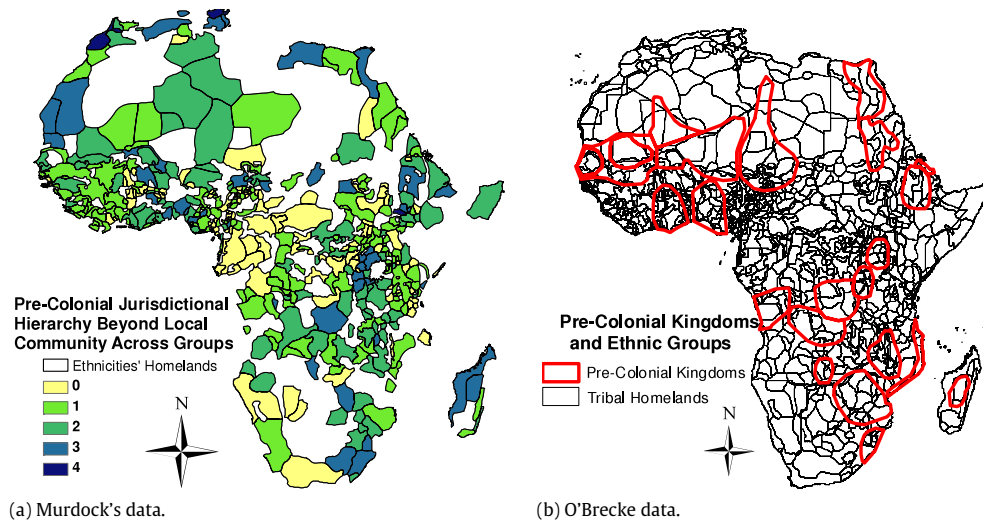


Fig. 1. Political centralization in pre-colonial Africa.

development. Moreover, a similar link seems to be also present outside Africa. Dippel (forthcoming) finds a strong positive correlation between political centralization and contemporary development across indigenous Native American Reservations. Likewise, Chiovelli (2014) uncovers a robust link between pre-colonial statehood and sub-national development (as captured by luminosity) within Latin American countries.

The increasing number of studies that use Murdock's classification of pre-colonial centralization as a proxy for pre-colonial institutional organization is subject to the critique that it may contain sizeable and (perhaps non-classical) measurement error. This note alleviates such concerns by showing with alternative proxies of pre-colonial centralization in Africa that the empirical regularities in Michalopoulos and Papaioannou (2013) remain intact.

1.2. Measuring pre-colonial political organization

Murdock's data and map clearly contain error for (at least) the following reasons:

1. Murdock (1959, 1967) relied mostly on secondary resources that for Africa are scarce.
2. There is always some subjectivity involved when classifying historical political regimes.
3. Murdock (1959) assigned each part of Africa to a single dominant group, while ethnicities overlap; and population mixing is higher closer to ethnic boundaries and in the capitals.
4. The maps of ethnic boundaries are (rough) approximations.³
5. Murdock's Ethnolinguistic Atlas reports pre-colonial ethnic-specific economic, institutional, and cultural traits only for a subset of the ethnic groups reported in Murdock (1959).
6. Moreover, scholars in African historiography maintain that the impact of statehood in pre-colonial Africa was evident in the centres of pre-colonial states, kingdoms, and empires decaying for regions in the periphery (see Herbst (2000) for an overview and Bandyopadhyay and Green (2012) for evidence from Uganda).

Linear regression analysis produces attenuated estimates, when the explanatory variable contains error that takes the "classical" form, i.e., it is orthogonal to the outcome variable and the key controls (e.g., Wooldridge (2002)). However, it is hard knowing ex ante whether error-in-variables takes the classical form.

Paper and structure

In this paper we use recently assembled data on pre-colonial statehood from Besley and Reynal-Querol (forthcoming) and re-examine the link between pre-colonial statehood and development across ethnic homelands. In Section 2 we present the data and the empirical specification. Section 3 gives the baseline results. In Section 4 we present two-stage-least-squares and OLS estimates that combine Murdock's data with the newly assembled data in an effort to account for error-in-variables.

2. Data and empirical specification

2.1. Data

To capture pre-colonial political centralization, we employ recently compiled data by T. Besley and M. Reynal-Querol (The Legacy of Historical Conflict. Evidence from Africa. *American Political Science Review*, 2014) that are based on historical maps put together by Cioffi-Revilla (1996) and O'Brien (1999). Besley and Reynal-Querol (forthcoming) provide georeferenced information on the reach of large kingdoms and empires just before the colonial era in Africa (Fig. 1(b)).

We construct three measures of pre-colonial statehood. First, we define a binary variable that takes on the value one when the centroid of a country-ethnic region (in Murdock's map) falls within the boundaries of a pre-colonial empire and zero otherwise. 302 of a total of 1218 country-ethnic homelands in Murdock's map (24.8%) have been part of pre-colonial states. Second, we construct an alternative indicator of political centralization that takes on the value one if any part of the ethnic homeland has been part of a pre-colonial state. This results in a sample of 444 (36.5%) ethnic homelands classified as being (at least partially) part of a pre-colonial kingdom and 774 (63.5%) country-ethnic observations, whose homelands have not been captured by one of the large pre-colonial African states. Third, we estimated the distance of each country-ethnic region to the boundaries of the closest pre-colonial kingdom-empire.

³ Michalopoulos and Papaioannou (2013) (page 143) write "while national borders are accurately delineated, drawing error in Murdock's map on the exact location of ethnic boundaries is likely to be nontrivial. Since Murdock's map, originally printed in the end of his book on African ethnicities, is available at a small scale, its digitization magnifies any noise inherent to the initial border drawing".

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