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# National institutions and subnational development in Africa

Few issues have received more inquiry in the social sciences than “”what are the fundamental determinants of comparative development?”” The institutional view asserts that the ultimate causes of underdevelopment are poorly performing institutional structures, such as lack of constraints on the executive, poor property-rights protection, as well as inefficient legal and court systems (see Acemoglu, Johnson and Robinson 2005 for a review and Acemoglu and Robinson 2012 for an influential popular argument). Other works downplay the role of formal institutions, emphasising instead the importance of geographical features, informal cultural norms, genetic, and epidemiological traits (see Spolaore and Wacziarg 2013 for a review, and Diamond 1997 and Landes 1998 on popular arguments on the importance of geography and culture, respectively).

**Empirical issues**

The key conceptual and econometric challenge in isolating the role of institutions is that these features interact with cultural traits – such as religion, family structure, and trust – and with geography (for example, prevalence of malaria). Favourable geography, growth-promoting cultural traits, and institutional capacity often go hand-in-hand. Moreover, since institutional and economic development may be driven by common features – for example, the colonial experience (see for example La Porta et al. 2008, Glaeser et al. 2004, Acemoglu et al. 2008) – it is very hard to tease out the one-way effect of national institutions on development.

**Recent research**

In our paper “National Institutions and Subnational Development in Africa” we circumvent these challenges by developing a methodology that exploits the ‘quasi-experimental’ drawing of African national borders. This took place in the European capitals in the mid to late 19th century, well before African independence, at a time when Europeans had hardly settled in the regions whose borders they were designing. The drawing of colonial boundaries partitioned more than 200 ethnicities across two or more countries. To take advantage of this historical accident we compare economic performance in adjacent regions which belong to the same ancestral homeland but fall in different countries, and which are thus subject to different formal institutions.[1]

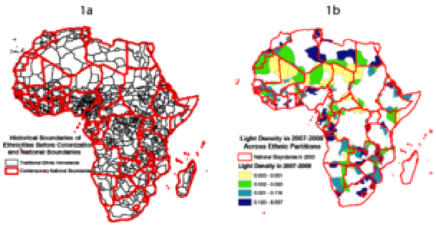
Implementing our approach entails two major challenges:

- First, we need to identify in a systematic way ethnic homelands

partitioned by national borders.
- Second, the economic performance indicators at the local (country-ethnicity) level are scarce.

To identify ethnic homelands we combine the George Peter Murdock (1959) map portraying the spatial distribution of African ethnicities in the mid to late 19th century with contemporary national boundaries (Figure 1a). To overcome the paucity of economic data across African regions we build on the recent contribution of Henderson, Storeygaard, and Weil (2012) and measure development at the ethnicity-country level using satellite images of light density. Figure 1b below maps the distribution of satellite light density at night at our (country-ethnicity) level of analysis for split groups.

**Figure 1.**



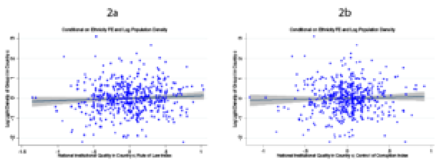

**New results**

Our analysis spans all African partitioned ethnicities and reveals new empirical regularities.

First, we document that differences in national institutions across the border do not systematically translate into differences in economic performance within partitioned ethnicities. While there is a significant positive correlation between national institutions and development across ethnic homelands, once we properly account for geographic-ecological and ethnic-specific differences via the inclusion of ethnicity fixed effects – which allows us to compare development of the same ethnic group across borders – the correlation weakens considerably and becomes statistically insignificant. This result is robust (see here) to various model permutations and units of analysis.[2]

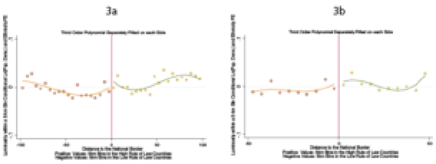
Figures 2a-2b below illustrate the lack of a systematic within-partitioned-ethnicity correlation between light density and institutional quality at the national level using two widely used proxies of institutions – a composite rule of law index and a corruption index (retrieved from World Bank's Governance Indicators). Clearly the insignificance is not driven by a few influential observations.

**Figure 2.** Economic development and national institutions: Evidence from within ethnicities across the national borders




Figures 3a and 3b provide a visual illustration of the regression discontinuity results that assess whether development is higher in the more institutionally developed side of the border. The figures plot the average likelihood that a small pixel (approximately 12.5 times 12.5 kilometers) is lit for bins of 5 kilometres wide in areas close to the national border (denoted by the vertical line). The figures also plot predicted pixel-level luminosity from a regression that includes a third-order polynomial on distance to the border (which takes on positive values for pixels in the relatively high institutional quality country). There are no discernible differences in luminosity crossing the national boundary towards the more institutionally developed country, further demonstrating that African development is not systematically linked to economic wellbeing at the border.

**Figure 3.** National institutions and light density in 2007-08: Dots represent local averages of 5km bins



**Discussion**

The lack of a systematic association between national institutions and regional development within partitioned African homelands cautions against extrapolating from the positive cross-country correlations that causality is necessarily running from institutions to development. This suggests the need for more research to understand how the institutions-development nexus operates.

While our results go against the conventional wisdom in economics on the causal impact of national institutions on development – in Africa at least – they are consistent with the African historiography that de-emphasises the importance of colonial and contemporary countrywide institutions in the hinterland, stressing instead the crucial role of ethnic-specific traits related to the role of chiefs, the slave trades, culture, and pre-colonial political organisation (see Michalopoulos and Papaioannou (2014) for a review).[3]

**Heterogeneity and the penetration of national institutions**

Second, we move beyond average effects to explore in detail the nexus between institutions and regional development. We find that the average effect of institutions is economically negligible and statistically insignificant for approximately 60% of partitioned ethnicities. Yet, for some groups, consisting of approximately 20%-25% of the sample, a significant positive association emerges, whereas for the remaining ones the within-ethnicity association turns negative.

The uncovered heterogeneity begs the question of its determinants. Building on insights from the African historiography that stress the inability of states to broadcast power in regions far from the capital (see for example Herbst 2000), and recent works on state capacity emphasising the limited capacity of many African states to monopolise violence and provide basic public goods (see for example Besley and

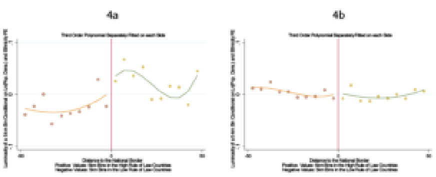
Persson 2011), we examine the spatial distribution of the uncovered heterogeneity.

The historiography has put forward several arguments on why African states face insurmountable challenges in broadcasting power beyond the capitals.

- Since Europeans mostly ruled from the capitals via the infamous 'indirect rule' strategy where rural areas were governed via local chiefs and a small number of colonial administrators, there were limited investments on institutional capacity during the colonial period in Africa. Due to institutional persistence, contemporary national institutions would have had limited reach far from the capital cities.
- Similarly, the challenging geography of many African states (desert areas, rugged terrains, and rainforests), produced by the Scramble for Africa resulted in many countries having peculiar shapes.[4] This made it quite hard both for colonial and post-colonial authorities to exert power on the hinterland, especially because of limited infrastructure investments outside of capital cities.[5]

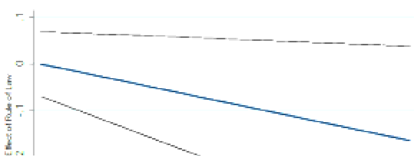
Figures 4a-4b provide a graphical illustration of the differential association between national institutions and regional development within partitioned groups. When we focus on pixels of split ethnicities that are relatively close to the respective capitals on both sides of the border (Figure 4a), pixel-level luminosity on the side with better-functioning national institutions is significantly higher. In contrast, when we zoom in on pixels that are relatively far from the respective capital cities (Figure 4b) there are no differences in luminosity, despite differences in national institutions.

**Figure 4.** National institutions and light density in 2007-08: Dots represent local averages of 5km bins; all bins close to the capital




We present complementary evidence – summarised in Figures 5a-5b below – on the limited penetration of national institutions. Expanding our analysis to the universe of African groups, we show that the explanatory power of national institutions on regional development decays for ethnic homelands (and pixels within groups) further from the capital centres.

**Figure 5a.** Institutions' impact and proximity to the capital: Ethnicity-country fixed effects estimates, conditional on rich set of controls



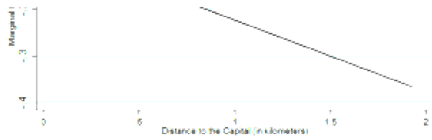
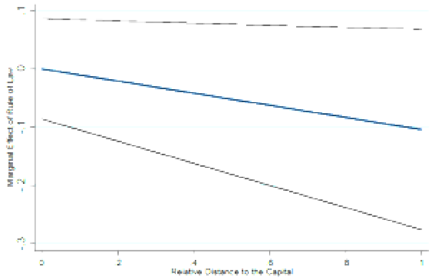


**Figure 5b.** Institutions' impact and proximity to the capital: Ethnicity-country fixed effects estimates, conditional on rich set of controls




Finally, we use individual-level data from the Afrobarometer Surveys spanning more than 20,000 respondents across 17 countries to show that law enforcement weakens monotonically as one moves further from the capitals. Moreover, ethnic identification as opposed to national one strengthens further from the capitals. These results further illustrate the limited state presence in the hinterland.

**Discussion**

These correlations vividly illustrate the limited penetration of the state in remote areas, suggesting that – at least within Africa – treating countries as homogeneous entities where nationwide institutions exert a uniform influence may be quite misleading. The uncovered patterns support an old idea among development scholars (see for example Lewis 1954) and political scientists (see for example Migdal 1988) of the coexistence in Africa of a 'dual' economic-institutional framework with customary rules being dominant in the countryside and colonial-national institutions becoming relevant for regions closer to the capitals (see also Herbst 2000).

**Summary**

Our approach combines anthropological maps on the spatial distribution of ethnicities at the time of colonisation with satellite-image data on light density at night. These are available at a very fine grid and can thus be easily aggregated at the country-ethnic homeland level. Our analysis reveals two new findings.

- First, we find that differences between countrywide institutional structures across the national border do not explain within-ethnicity differences in economic performance.
- Second, the average non-effect of national institutions on ethnic development masks considerable heterogeneity, partially driven by the diminishing role of national institutions in areas further from the capital cities.

These results stand in contrast to previous, mostly cross-country works in economics; yet the evidence supports arguments put forward by the African historiography stressing the key role of the ethnicity and the inability of national governments to broadcast power.

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[1] There is little ambiguity on the artificial drawing of African colonial borders that endured after African independence. As the British Prime Minister at the time of the 'Scramble for Africa' Lord Salisbury put it in a famous tally, ""we have been engaged in drawing lines upon maps where no white man's feet have ever trod; we have been giving away mountains and rivers and lakes to each other, only hindered by the small impediment that we never knew exactly where the mountains and rivers and lakes were."" In Michalopoulos and Papaioannou (The Long Run Effects of the Scramble for Africa, NBER WP 17620) we show that the drawing of political boundaries is not systematically linked to various geographical, ecological, economic, and political pre-colonial features. (see Vox for a review).

[2] The benchmark unit of analysis is a partitioned ethnic region; we also take advantage of the finer structure of the luminosity data to obtain multiple observations within each partition and identify the effect of national institutions at the border.

[3] Recent works emphasise the long-lasting effects of the slave trades (e.g. Nunn 2008), pre-colonial ethnic-specific political centralisation (e.g. Gennaioli and Rainer 2007, Michalopoulos and Papaioannou 2013a), ethnic partitioning (e.g. Alesina, Easterly, and Matuszeski 2012, Michalopoulos and Papaioannou 2013c). See Nunn (2013) for a recent review of studies illustrating the legacy of historical events.

studies illustrating the legacy of historical events.

[4] For example, the Casamance region in Southern Senegal (where the partitioned Diola-Jola reside) is isolated from Dakar, as Gambia effectively cuts Senegal into two parts. Likewise, the rainforest of Central Africa limits the presence of the government of the Democratic Republic of Congo in the Eastern provinces of North and South Kivu, located hundreds of miles away from Kinshasa. The latter are quite often ruled by local militias and rebel groups.

[5] Herbst (2000) reproduces a quote of a senior official in Central African Republic saying that “”the State stops at PK 12, twelve kilometres from the capital, Bangui.””