

Precolonial Centralization and Institutional Quality in Africa

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Abstract

We find that the centralized precolonial political institutions of African ethnic groups reduced corruption and fostered the rule of law in colonial and postcolonial Africa. These results complement our earlier finding (Gennaioli and Rainer 2005) that precolonial centralization improved public goods provision in colonial and postcolonial Africa. The data support the view that precolonial institutions are crucial to understanding governmental quality in Africa and in former colonies more generally. The evidence also stresses the desirability of centralization when unaccountable local elites capture local politics for private gain.

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1. Introduction

Sub-Saharan Africa is populated by several hundreds ethnic groups. Before the large scale colonization undertaken by European powers toward the end of the 19th century, those groups varied tremendously in their political institutions. Colonial powers, and later the international community, superimposed on top of these precolonial institutions new state organizations borrowed from the Western historical experience that are identified with today's African countries. Yet, these developments did not prevent precolonial institutions to exert a profound influence across the African continent. Political scientists noticed the presence of a dual authority structure in Africa, where central governments (be they colonial or independent) had to confront with the power of precolonial leaders (e.g. Sklar 1993, Mamdani 1996, Boone 2003). More specifically, historians document that precolonial institutions heavily shaped the quality of government, and hence the success of modernization efforts, in colonial and postcolonial Africa (e.g. Abubakar 1980, Falola 1999). Anthropologists and historians stress that the main distinction in Africa is that between more and less centralized precolonial political systems (Fortes and Evans-Pritchard 1940) and report that African ethnic groups characterized by more centralized institutions were better able to modernize (e.g. Low 1965, Pratt 1965, Schapera 1970).

In recent years we undertook a research project aimed at evaluating, theoretically and empirically, the impact of precolonial institutions on the performance of colonial and postcolonial African countries. In our earlier paper, "The Modern Impact of Precolonial Centralization in Africa" (Gennaioli and Rainer 2005), we used an anthropological dataset to measure the degree of precolonial political centralization of African ethnic groups. We then built a country-level index of precolonial centralization and documented that African countries with a larger share of population belonging to ethnic groups with centralized (rather than fragmented) precolonial institutions display superior capacity to provide public goods such as health, education and infrastructure between 1960 and 2002. Furthermore, our analysis showed that a plausible explanation for this finding lies in the greater ability of centralized systems to hold local elites accountable. Such accountability led local elites to foster the implementation of public policies aimed at expanding productive inputs such as health, education and infrastructure.

The current paper uses the index of precolonial centralization developed in Gennaioli and Rainer (2005), but asks a different question. Our goal here is to assess whether, in addition to fostering the provision of basic public goods, precolonial centralization also helped African governments to create an institutional environment supportive of private

sector initiative. There is a near consensus in economics around the notion that market friendly institutions are of fundamental importance for economic development (Smith 1776, North 1981, Acemoglu et al. 2001). In addition, a longstanding intellectual tradition views the extent of centralization as a crucial determinant of institutional quality.

The argument that decentralization should improve institutional quality evokes the idea that competition among different jurisdictions should enhance the quality of government (Tiebout 1956). Local officials who over-tax or expropriate will lose their residents to other districts. Also, greater monitoring ability on the part of voters may increase political accountability under decentralization (Besley and Case 1995). Conversely, by giving enormous power to an arbitrary or corrupt government, centralization is likely to foster expropriation. Hence, according to this view, decentralized precolonial systems should have led to higher institutional quality. A different strand of theories holds instead that centralization boosts the quality of government (Riker 1964). Localism may be a threat to an effective rule of law, which requires a great deal of coordination among jurisdictions (Oates 1972). Not to mention the possibility that local politics may easily be captured by local regressive interests (Blanchard and Shleifer 2001). According to this view, the accountability mechanisms (Gennaioli and Rainer 2005) of centralized precolonial systems should have improved institutional quality by restraining the arbitrariness of local elites.

To give a concrete example, consider the case of corruption. Insofar as corruption is an illegal form of taxation, it represents a violation of property rights and a threat to the private sector.¹ Then, Shleifer and Vishny (1993) offer an illuminating discussion of the role of centralization in the control of corruption. They argue that under centralization the level of corruption is determined by the center who maximizes joint profits from bribe collection. Under decentralization, instead, each of the relevant authorities independently sets its level of bribes to maximize own profits while taking the others' bribes as given.

As a result, under centralization the level of corruption is positive and equal to the monopoly solution. Under decentralization, the level of corruption depends on the interaction among different authorities. For example, if in Tiebout fashion different authorities set bribes competitively, then corruption is zero. Unfortunately, this competitive mechanism is unlikely to work in many real world circumstances. For instance, in Africa many quasi-independent authorities have the ability to stop a project, and may use this power to set bribes shielded

¹ Some political scientists (e.g. Leff 1964) argue that the optimal level of corruption is positive because it helps removing inefficient regulatory barriers. Yet, even in such case corruption signals the presence of such barriers and hence is a symptom of bad government. Indeed, the evidence is rather unfavorable to the view that corruption is beneficial (Svensson 2005).

from competitive forces (Klitgaard 1990). Shleifer and Vishny (1993) argue that in this situation – like in a standard problem of double marginalization – the uncoordinated bribe taking by independent monopolists enhances the level of bribes to such an extent that the presence of a centralized authority reduces corruption. The same reasoning, which can easily be extended to other property rights’ violations, may help explain the role of precolonial centralization in Africa. Being so weak, the African national governments are unable to penalize provincial authorities running their own expropriation rackets. As a result, centralized precolonial institutions may have helped to reduce expropriation and improve institutional quality by enforcing collusion among multiple authorities.

Our empirical results are indeed consistent with this view and show that precolonial centralization helped to enhance institutional quality. We measure institutional quality using the indexes of *Control of corruption* and *Rule of law*. The *Control of corruption* index measures the exercise of public power for private gain, while the index of *Rule of law* summarizes the quality of contract enforcement, the police and the courts as well as the likelihood of crime and violence. Overall, these measures reflect the key institutional dimensions required for the proper working of a private economy.

We find that African countries where a larger share of the population belongs to ethnic groups with centralized (rather than fragmented) precolonial institutions have lower corruption and better rule of law. Our results are very robust to the two main alternative explanations of our finding. We control for proxies capturing the view that centralized ethnic groups were just economically more advanced and thus more effective – irrespective of centralization – at dealing with government failures. But we also control for proxies capturing the view that only colonial or postcolonial national institutions mattered, while precolonial centralization only affected institutional quality by indirectly affecting the former. The robustness of our results points, in line with historical accounts, to a direct beneficial effect of precolonial centralization on institutional quality in Africa. This suggests that precolonial institutions are essential to explain the performance of former colonies. Our results also contribute to the empirical literature on centralization and institutional quality (Fisman and Gatti 2002, Treisman 2000 and 2003) and suggest that centralization may lead to better government when unaccountable local elites capture local politics for private gain.

The paper is organized as follows. Section 2 reviews the historical evidence on the role of precolonial centralization in Africa. Section 3 summarizes the findings of “The Modern Impact of Precolonial Centralization in Africa”. Section 4 presents the new empirical results of the current paper. Section 5 concludes.

2. Historical Background

As hinted in the Introduction, historians document that African precolonial institutions shaped modernization in Africa thanks to their continuity in the periphery, especially in rural areas. Such continuity dates back to the end of the 19th century, when the massive European colonization of Africa began, and emerges from historical accounts of Angola (e.g. White 1959), Nigeria (e.g. Abubakar 1980), Botswana (e.g. Schapera 1970), Lesotho (Ashton 1967), West Africa (Boone 2003), and of Sub-Saharan Africa more generally (Mamdani 1996). Because of the paucity of European officers in African soil, colonialists sought the cooperation of traditional chiefs to administer the colonies more effectively (Low 1965). But precolonial institutions continued to exert an important role also in postcolonial Africa (e.g. Van Rouveroy van Nieuwaal 1987, Herbst 2000)².

The history of Uganda provides a good illustration of the role of precolonial institutions during the colonial period. Uganda was colonized by England between 1890 and 1910. The British understood the importance of traditional chiefs and heavily relied on them for building roads, organizing schools, improving sanitation and for many other activities (Pratt 1965). The British administrative personnel never spread below the district commissioner and his assistants. Beneath them a purely African infrastructure was employed and reliance was placed almost entirely upon hierarchies of African chiefs (Low 1965).

The British dealt with centralized groups by signing agreements with native authorities who accepted to pay tribute to the British Administration. In exchange, their indigenous system of government was upheld. For example, the Kabaka (traditional king) and his ministers remained at the top of the Ganda hierarchy of government, which continued to administer the kingdom of Buganda. A similar strategy was followed in the kingdoms of Bunyoro, Ankole, Toro and Busoga. In traditionally fragmented districts, the British yielded local power to appointed chiefs, selected from men of local prestige and power (clan heads, village headmen). Such chiefs were the direct subordinates of the Colonial Administration. Hence, during the colonial period the administration of local affairs reflected the precolonial patterns: more centralized in areas inhabited by centralized groups, more fragmented in areas inhabited by fragmented groups.

Historians forcefully stress the beneficial role played by precolonial centralization in colonial Uganda for the introduction of new agricultural technologies (Richards 1960, Ehrlich 1965), religion and education (Low 1965), and health improvements (Pratt 1965). The

² See Potholm (1977) and Picard (1987) for country-level evidence on postcolonial Botswana and Swaziland.

evidence on centralized groups contrasts with that on fragmented ones. In his study of the Lango, a fragmented group from Northern Uganda, Tosh (1978) notices that traditional authorities could not effectively implement reforms aimed at expanding education and raising agricultural productivity and severely distorted the administration of justice. This picture is confirmed by the history of all Ugandan fragmented groups (Low 1965, Burke 1964). Map 1 and Table 1 are taken from Gennaioli and Rainer (2005) and show, respectively, the variation of precolonial institutions within Uganda and the distribution of various public goods across Ugandan regions circa 2000. The figures confirm the historical accounts. Areas inhabited by centralized groups such as the central and the western regions display better provision of public goods than the north of the country, inhabited by fragmented groups; the “mixed” eastern region tends to have intermediate values.

To summarize, due to their continuity, precolonial institutions crucially shaped modernization efforts in colonial Uganda. Furthermore, the key dimension of precolonial institutions was the degree of their centralization, with politically centralized areas being better able to modernize than fragmented ones. The key role of precolonial centralization emerges from historical accounts of many other African countries. To mention just a few examples, Abubakar (1980) and Falola (1999) stress the disappointing performance of native authorities among the fragmented Ibo and Ibibio of Nigeria, while Boone (2003) discusses the political isolation and poor performance of the fragmented Diola in Senegal.

Overall, in contrast with the economic literature on institutions (e.g. La Porta et al. 1999, Acemoglu et al. 2001), African history suggests that the quality of government in colonial and postcolonial Africa did not only depend on the institutions set up by the colonizers. Abundant historical evidence stresses the importance of precolonial factors, in particular of the precolonial institutions of African ethnic groups. Thus, to fully understand the determinants of the quality of government in Africa we must understand how and through which channels did precolonial centralization interact with modernization.

In order to delve into these issues, in “The Modern Impact of Precolonial Centralization in Africa” we built an index of precolonial centralization and studied its association with the provision of basic public goods such as health, education and infrastructure. The analysis aimed at understanding the effect of precolonial institutions on the ability of colonial and postcolonial African governments to implement policies directly fostering the accumulation of basic productive factors such as human and physical capital.

By focusing on measures of corruption and rule of law, the goal of the current paper is instead to study the extent to which precolonial centralization helped African countries to set

up an institutional infrastructure facilitating private sector transactions. Since the current paper uses the index of precolonial institutions built in our previous work, it is worth at this point rehearsing the main ingredients and results of the latter. The detour also helps us to contextualize our new findings within the broader role of precolonial centralization in Africa.

3. “The Modern Impact of Precolonial Centralization in Africa”

The subtitles of this section summarize the building blocks of “the Modern Impact of Precolonial Centralization in Africa”. We refer the interested reader to that paper for details.

- The “Centralization” Index

Gennaioli and Rainer (2005) propose a cross-country measure of centralization of African precolonial institutions. We built a country-level measure because the lack of comparable subnational data on public goods prevents us to perform the study at the ethnic-group level. We use the *Ethnographic Atlas*, a database of around 60 variables describing the social, economic and political traits of 1270 ethnic groups around the world. The data summarize the information of a multitude of individual field-studies done by anthropologists between 1850 and 1950. Every ethnic group is pinpointed to the earliest period for which satisfactory data existed in order to avoid the acculturative effects of contacts with Europeans. In the *Ethnographic Atlas*, the *Jurisdictional Hierarchy* variable measures the degree of centralization of ethnic groups’ precolonial polities. Using this variable, we define an ethnic group as “fragmented” or “centralized” depending on the number of jurisdictional levels transcending the local community, where more jurisdictional levels correspond to more centralized groups. Our “fragmented” category includes groups lacking any political integration above the local community such as the Tonga of Zambia, and groups such as the Alur of Eastern Africa where petty chiefs rule over very small districts. Our “centralized” category comprises large kingdoms such as the Swazi in Southern Africa as well as the less centralized Yoruba city-states in Southern Nigeria and the Ashanti confederation in Ghana. Having classified more than 300 African ethnic groups, we matched them to the groups listed in the *Atlas Narodov Mira*, which provides the most comprehensive division of the world population into different ethnic groups. We used the countries’ ethnic composition from the Soviet Atlas to calculate the share of each country’s non-European population belonging to centralized ethnic groups. This share represents our country-level index of precolonial political centralization and we call it “Centralization”. We excluded Europeans to focus on indigenous African institutions, but their inclusion in the index does not affect our results.

- *The Basic Empirical Finding*

The basic finding of “The Modern Impact of Precolonial Centralization in Africa” is a strong and positive association across African countries between Centralization and public goods. African countries where a larger share of the population belongs to centralized (rather than fragmented) ethnic groups display superior capacity to provide public goods such as health, education and infrastructure between 1960 and 2002. Infant mortality and percent of infants immunized against DPT (diphtheria, pertussis and tetanus) represent our health outcomes, adult illiteracy rate and average school attainment proxy for education, the percent of roads paved (as a share of total roads) is our measure of infrastructure.

This empirical association does not in itself document the impact of precolonial centralization on public goods, as two alternative hypotheses may explain our finding. According to the first, centralized ethnic groups were just socioeconomically more “advanced”, thus being more effective at adopting western technologies; in this view, precolonial institutions did not matter, but precolonial endowments did. The second hypothesis holds that precolonial centralization played an important but indirect role by improving colonial and postcolonial political outcomes at the national level. We extensively control in our regressions for proxies capturing these alternative hypotheses. Ethnic-group and country-level proxies capture the key attributes of socioeconomic advancement: fixity of residence, dependence on agriculture, urbanization and population density, easiness of transportation, use of writing, technological level, use of money, absence of slavery. As for national politics, we control for national political outcomes in the colonial and postcolonial periods. Our results are remarkably robust and point to a direct effect of precolonial centralization on public goods in Africa. In line with historical accounts, this evidence confirms the crucial role of precolonial centralization in fostering the adoption of European policies and technologies in Africa.

The next question we ask is: why was precolonial centralization so beneficial? In line with the political economy literature on centralization and public goods provision (see Bardhan 2002), our results are inconsistent with the “central capture” view, holding that *decentralization* fosters public goods provision by *increasing* the accountability of local administrators (Tiebout 1956, Besley and Case 1995, Seabright 1996). Our findings support instead the opposite “local capture” view, holding that in developing countries democratic mechanisms often fail at the local level, leading to policy capture by local elites interested in blocking socioeconomic reforms (Riker 1964, Bardhan and Mookherjee 2000, Blanchard and Shleifer 2001).

- *Centralization and Accountability: a View from African Colonial History*

Colonial history of Uganda supports the “local capture” view, suggesting that greater accountability of local chiefs was a crucial factor behind the success of centralized systems (Apter 1961, Burke 1964). We already discussed how in fragmented groups local chiefs behaved as tyrants, distorting public goods provision to their own advantage. In contrast, the accountability of local chiefs in centralized systems emerges from accounts on the Buganda, Bunyoro, Toro and other centralized Ugandan groups (Apter 1961, Richards 1960, Burke 1964). Local chiefs abusing their power and blocking modernization were promptly replaced by higher traditional authorities. In the kingdom of Buganda, for instance, local chiefs were appointed by the Kabaka (the king), or by lower level administrators, and could be abruptly dismissed if the performance of their district was not satisfactory (Apter 1961, Low 1971).

Interestingly, the accountability in centralized systems did not simply reflect the preference of traditional central rulers for greater provision of public goods as in Blanchard and Shleifer (2001). Instead, it was a product of political competition, which resulted from the process of administrators’ appointment followed by the central apparatus. For example, the history of the Buganda illustrates the pervasive struggle between local power holders in order to influence the king’s appointment decisions and make their way up the chiefly hierarchy. In this struggle, the political support of a man (the number of his followers) was a major factor determining his power and status.³ A man with a larger following could better influence the king through bribes or protest.⁴ Since the size of his constituency determined a man’s prestige and hence his chance to be appointed, it ultimately behooved him to rule in the interest of his community (Apter 1961). In short, Buganda centralization increased competition between local power holders and enhanced their accountability to local communities (and hence the quality of government). It did so by expanding the political arena and by creating a hierarchy of chiefly offices to compete for. In contrast, abusive behavior of chiefs in Ugandan fragmented groups, such as Lango, was a direct result of the fragmented nature of local politics (Tosh 1978). This message is confirmed by the history of other African centralized groups such as the Tswana of Botswana (Schapera 1970, Wylie 1990), the Sotho of Lesotho (Ashton 1967, Breytenbach 1975) or the Swazi of Swaziland among others (Stayt 1931).

More broadly, Bates (1983, p. 41-42) viewed the intense political competition as a general feature of traditionally centralized African societies. He also hinted at the economic

³ The central apparatus directly tested the popularity of a chief by consulting the local people (Richards 1960).

⁴ A crucial source of influence was local lords’ ability to satisfy the king’s need for soldiers (Apter 1961).

benefits it could bring: “*But, to win and retain political power, political aspirants must attract followers, and to do so they must offer advantages, such as the opportunity to prosper.*” To summarize, historians document that the greater accountability of local administrators in centralized systems was a key factor behind their success and that such accountability resulted from the stiffer political competition faced by local power holders in centralized systems, which undermined local capture, the plague of decentralization.

- *The Model and the Empirical Test of “Local Capture”*

Having reviewed the empirical and historical evidence on the role of precolonial centralization, in “The Modern Impact of Precolonial Centralization in Africa” we scrutinize the “local capture” view. We build a model of centralization which allows us to formulate an empirical test to identify the benefits of precolonial centralization in reducing local capture.

Our model builds on two key assumptions borrowed from African colonial history. First, we assume that for providing local public goods such as education, health and infrastructure, colonizers relied on the indigenous institutions they found upon their arrival. Second, we assume that precolonial centralization created a competition for higher office among local elites that was won by the elite with wider popular support. Under these assumptions, we find that precolonial centralization leads to the formation of local pressure groups that hold local elites accountable and induce them to provide more public goods thus curing the two costs of decentralization stressed by Riker (1964): the conflict between local elites and the center or “lack of coordination” (responsible for the underprovision of public goods involving large interdistrict spillovers) and the conflict between local elites and local masses or “local tyranny” (responsible for the underprovision also of public goods without spillovers). Crucially, our model predicts that centralization benefits local communities depending on their level of social stratification. In stratified communities, where the conflict between local elites and local masses is acute, centralization boosts the provision of all public goods, i.e. those with and without spillovers. In egalitarian communities, where the problem of local tyranny is small, centralization only boosts the provision of goods with large spillovers. We test these predictions by using another dimension of African ethnic groups coded in our anthropological dataset: the degree of social stratification at the local level. In line with our theory, we find that for goods with large spillovers such as roads and immunization, the benefit of centralization is large in both stratified and egalitarian groups. Conversely, for education and infant mortality, centralization benefits stratified groups more

than egalitarian ones. Indeed, spillovers should be relatively less important for the public goods behind these outcomes (local schools and clinics).

The consistency between these results and the theoretical predictions of our model suggests that the benefits of precolonial centralization come at least in part from its ability to reduce local capture. In fact, the results of the estimation of our model are hard to reconcile with the alternative hypotheses that centralized groups were simply more “advanced” or that their institutions only improved national politics.⁵ Moreover, by showing that centralization helped not only to foster interdistrict coordination but also to soften local tyranny, our results are new to the empirical literature (Fisman and Gatti 2002, Treisman 2000 and 2003), which has only looked at the overall effect of centralization on public policies, without identifying the nature of its costs or benefits.

Overall, our analysis of African indigenous institutions in “The Modern Impact of Precolonial Centralization in Africa” parallels Riker’s (1964) classic work on federalism. The lack of accountability in politically fragmented ethnic groups is in line with Riker’s assertion that, rather than encouraging freedom, federalism may lead to local tyranny. Moreover, our emphasis on the disciplining effect of interelite competition for higher office is analogous to his idea that a strong party system can improve the effectiveness of government by providing career incentives to local politicians.

Having reviewed the impact of precolonial centralization on the provision of basic inputs such as education, health and infrastructure, we can now accomplish the main goal of the current paper, i.e. to study the impact of precolonial centralization on institutional quality.

4. Precolonial Centralization and Institutional Quality

Our country-level measure of precolonial centralization is the “Centralization” index developed in Gennaioli and Rainer (2005) for 42 countries in Sub-Saharan Africa. Our country-level measures of institutional quality are the indexes of *Control of corruption* and *Rule of law* constructed by Kaufmann, Kraay and Mastruzzi (2005). These indexes are based on dozens of individual variables measuring perceptions of governance and drawn from several separate data sources. The *Control of corruption* index measures perception of corruption defined as the exercise of public power for private gain. It incorporates information on the frequency of “additional payments to get things done” and more generally

⁵A general version of these views predicts that – either for their advancement or for their better national politics – centralized groups *uniformly* enjoy more public goods, irrespective of local stratification. Although in more nuanced versions of these hypotheses local stratification may matter, they are still incapable of explaining the different patterns obtained for public goods with high and low spillovers.

reflects the effects of corruption on business environment. The index of *Rule of law* measures the extent to which agents have confidence in and abide by the rules of society. It includes perceptions of the incidence of crime, effectiveness of the judiciary and the enforceability of contracts. More generally, it reflects the government's ability to protect property rights and establish fair and predictable rules for private transactions. Both indexes are scaled between -2.5 and 2.5, with higher scores corresponding to better outcomes.

We compute the average values of the two indexes for the entire 1996-2004 period for which the data is available and use them as dependent variables in our analysis. Tables A1 and A2 show summary statistics and pairwise correlations between Centralization and our controls. Our basic regression specification is:

$$Y_i = \alpha_0 + \alpha_1 * Centralization_i + \varepsilon_i$$

Y_i is one of our institutional measures in country i and $Centralization_i$ is the value of Centralization for that country. Parameter α_1 captures the association between precolonial centralization and institutional quality.

4.1. Empirical Findings

Table 2 shows the bivariate relationship between Centralization and our measures of institutional quality. Precolonial centralization is positively associated with control of corruption (Column 1) and the rule of law (Column 2). Both of these relationships are statistically significant and economically large. A change from 0 to 1 in Centralization (i.e. a move from a country only populated by fragmented groups to a country only populated by centralized groups) is associated with an increase of 0.593 in the anti-corruption index and an increase of 0.659 in the index of rule of law. This improvement in institutional quality is equivalent to more than one standard deviation in our sample.⁶

The comparison between Lesotho and Liberia is telling. In 1996-2004 Lesotho on average scored 0.03 and -0.12 in *Control of corruption* and *Rule of law* indexes respectively. Liberia lies at the other extreme having the average values of -1.31 and -1.77 for the same institutional measures. But while our Centralization index gives 1 for Lesotho, populated by the centralized Sotho and Zulu, it gives 0 for Liberia, whose population comes from the

⁶ To check for presence of influential observations that could bias our results, we computed the DFbetas (see, e.g., Belsley, Kuh and Welsch (1980, p. 28)) from the regressions in Table 2, but did not find any cases of $abs(DFbeta) > 1$. If we more conservatively drop all the observations with $abs(DFbeta) > 2/\sqrt{\#obs}$ the centralization coefficient slightly decreases but remains highly significant statistically.

fragmented Kru and Peripheral Mande. Thus, differences in precolonial institutions may capture almost half of the difference in institutional quality between these two countries.

Overall, Table 2 shows that countries inhabited by centralized groups enjoy better institutional quality. These results are in line with the argument developed by Shleifer and Vishny (1993) that the presence of a centralized authority should help to coordinate bribe taking and hence reduce corruption. As discussed in the Introduction, they are also consistent with the view that centralization boosts the quality of government more broadly defined (Riker 1964, Blanchard and Shleifer 2001, Gennaioli and Rainer 2005).

Notice that reverse causality is not a problem for our analysis. The political organization of African ethnic groups certainly evolved over centuries, but was predetermined at the end of the 19th century, when the massive European colonization began. It is then difficult to see how recent differences in institutional quality could have affected our Centralization index. Cross-country studies of centralization (e.g. Treisman 2000, Fisman and Gatti 2002) use measures of centralization that, being contemporaneous to public goods outcomes, may be endogenous. Our index is far less prone to this problem, and thus improves on this empirical literature.

However, the mere absence of reverse causation does not necessarily imply that our results are driven by precolonial centralization per se. In particular, our findings may be explained by two alternative hypotheses. First, centralized ethnic groups may just be economically more advanced and thus more effective – irrespective of centralization – at dealing with government failures. Second, precolonial institutions may have affected institutional quality only indirectly, by affecting colonial institutions or by shaping national political outcomes after independence. In order to check for these possibilities, we pick proxies for our alternative hypotheses and introduce them one at a time in our basic regression specification. Table 3 reports the values and the standard errors of the coefficient for the Centralization index, as well as those for the relevant proxy.

- First Alternative Hypothesis: Economic Advancement

The economic advancement of traditional societies is likely to favor centralization (Braudel 1972), but it may also lead to the creation of more efficient institutions (Demsetz 1967). In order to check for this possibility, we pick two proxies of economic advancement: a country's per capita GDP in 1960 and the collection of climate type dummies, capturing differences in agricultural productivity across countries. Rows 2 and 3 of Table 3 show the results of regressions including these controls. The effect of Centralization remains large and

(at least marginally) significant, while neither the early level of per capita income nor the climatic conditions seem to have any impact on institutional quality in Sub-Saharan Africa.

- *Second Alternative Hypothesis: Indirect Effects*

The indirect effect of precolonial centralization can be formulated in two broad versions. The first deals with the possibility that precolonial centralization mainly affected colonial institutions. For example, indigenously centralized areas could have facilitated European settlement, thus leading to better institutions (Acemoglu et al. 2001), or attracted English colonizers, which could have also led to better institutions (La Porta et al. 1999). To account for these possibilities, we control in our regressions for the fraction of a country's population of European descent in 1960 and for the English legal origin variable. But precolonial centralization may have also facilitated the arrival of missionaries, who may have brought efforts aimed at improving local governance. We thus control for the share of a country's population belonging to Catholic, Muslim, Protestant or other religions.

The second version of the indirect effects hypothesis deals with the possibility that precolonial centralization may have affected postcolonial national political outcomes. For example, in postindependence Africa, centralized groups could provide mechanisms of political participation and representation, putting constraints on the behavior of national political elites (Boone 2003). At the same time, indigenously centralized political organization could reduce the scope for distinctive cultural differences, thus reducing the ethnolinguistic fractionalization and its costs. In order to capture these indirect channels we control in our regressions for the *Constraints on the executive* index (measuring national checks and balances) and for the *Ethnolinguistic fractionalization* index of Easterly and Levine (1997).

Rows 4-8 of Table 3 show the results of the regressions controlling for these indirect effects. In all the specifications the coefficient of Centralization remains large and significant, indicating a strong direct effect of precolonial institutions. The data also suggest that protestant religion and stronger national checks and balances are conducive to better economic institutions. However, it is unlikely that precolonial centralization had an additional, indirect, effect operating through these channels, given the low and insignificant correlation of Centralization index with these intermediate variables (see Table A2).

The robustness analysis tends to reject the hypotheses that centralized groups fared better just because they were more advanced or because precolonial centralization had only an indirect effect working through colonial or postcolonial national political outcomes.

Instead, the data are broadly consistent with the presence of a direct impact of precolonial centralization on institutional quality.

5. Conclusions

We document the importance of the precolonial political institutions for the quality of government in colonial and postcolonial Africa. We find that African countries with a larger share of their population belonging to ethnic groups with centralized institutions have less corruption and better rule of law.

Our analysis contributes to the economic literature on institutions with two main ideas. First, differently from existing work in this field, which stress the impact of colonial institutions (La Porta et al. 1999, Acemoglu et al. 2001), we view *precolonial* institutions as a key determinant of the quality of government in former colonies. Second, the evidence presented in this paper that centralization may be conducive to a framework supportive of private sector initiative complements our previous finding (Gennaioli and Rainer 2005) that centralization may reduce the abusive power of local elites and foster public goods provision.

This brings us to the general implications of our work for the decentralization debate. The arguments in favor of political decentralization ultimately rely on the crucial assumptions that the local political system is able to maintain a meaningful democratic process and that the main threat to institutional quality is represented by a corrupt and arbitrary central government. Yet the evidence from around the world – from Russia to India to Latin America⁷ – shows how local power holders may subvert and distort the implementation of private and public initiatives to their own advantage. We suggest that in such circumstances political *centralization* is desirable because it constitutes a way to hold local elites more accountable.

⁷ See Shleifer and Treisman (1999) on Russia; Lieten (1996) and Mathew and Nayak (1996) on India; Fox (1990) on Latin America.

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Uganda



Map 1. Distribution of centralized and fragmented ethnic groups across Uganda regions

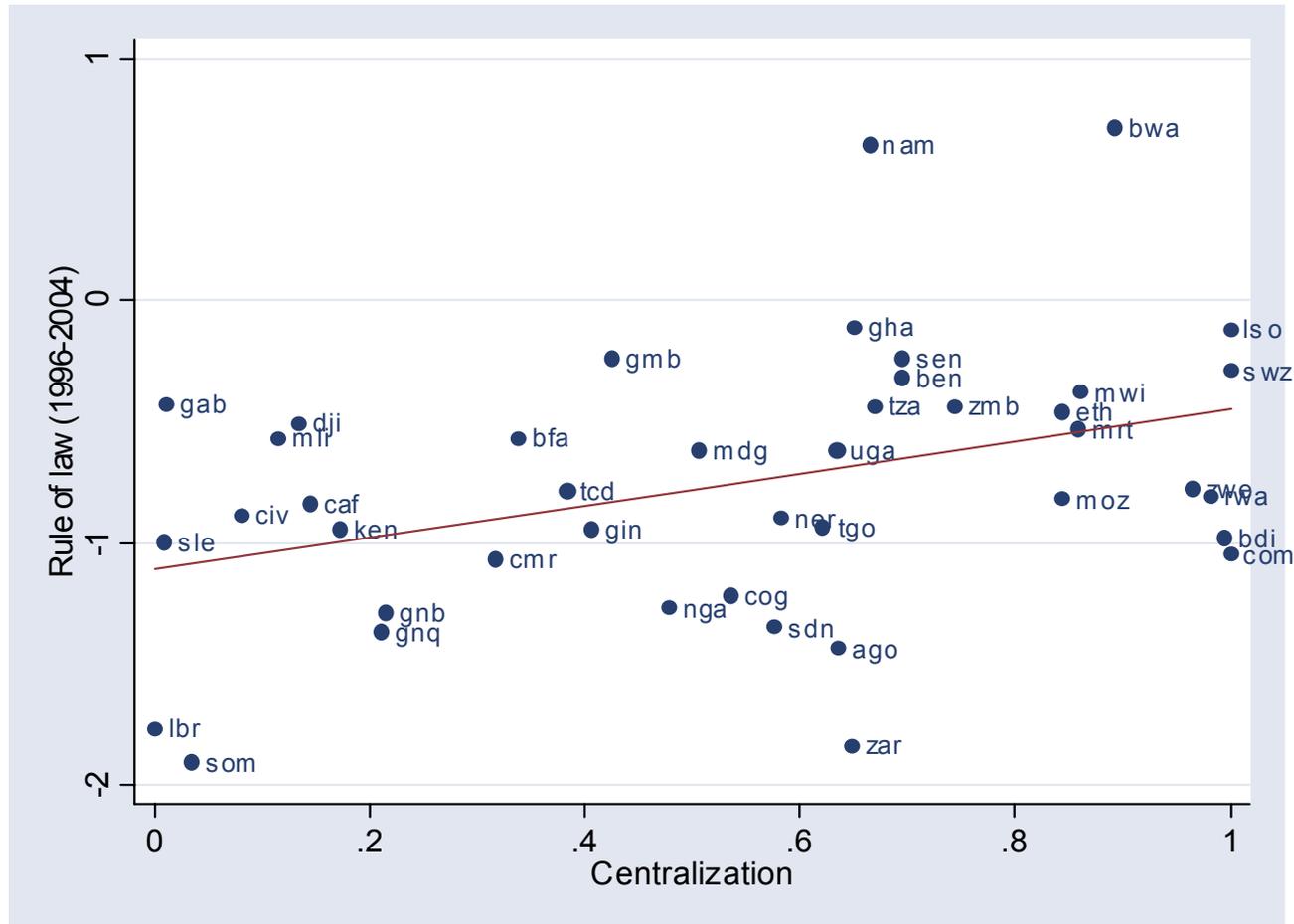


Figure 2: Precolonial centralization and rule of law

Table 1: Precolonial centralization and public goods in Uganda

<i>Region</i>	Central	Western	Eastern	Northern
<i>Precolonial institutions of ethnic groups</i>	Centr	Centr	Mixed	Fragm
% of roads paved in 2002	13.37	10.32	10.89	1.33
Infant mortality in 2001	71.9	97.8	89.3	105.9
% of children under five years with diarrhoea in 2001	14.5	16	23.3	26.7
Availability of sewerage system in 2000 (% of households)	15	14	9	6
Piped water inside house in 2000 (% of households)	10	10	8	5
Availability of latrine or human waste disposal service in 2000 (% of households)	96	86	77	67
Adult literacy rate in 1997	72	61	54	54
Adequacy of facility & equipment at primary schools in 2000 (% of households satisfied)	62	72	55	51

Sources: Uganda Bureau of Statistics (1999, 2003), Uganda Bureau of Statistics and ORC Macro (2001)

Table 2: Precolonial centralization and institutional quality

	Control of corruption in 1996-2004	Rule of law in 1996-2004
	(1)	(2)
Centralization	0.593*** (0.205)	0.659** (0.246)
Constant	-1.009*** (0.113)	-1.11*** (0.147)
Obs	42	42
Rsq	0.16	0.15

Notes:

(1) OLS estimations.

(2) Robust standard errors are shown in parentheses.

(3) *** denotes significance at the 1% level, ** at the 5% level, * at the 10% level.

Table 3: Robustness to alternative hypotheses: economic advancement and indirect effects

<i>Specifications</i>	<i>Dependent Variables</i>			
	Control of corruption in 1996-2004		Rule of law in 1996-2004	
	(1)		(2)	
Centralization No controls	0.593***	(0.205)	0.659**	(0.246)
Centralization Log of GDP/cap in 1960	0.569**	(0.218)	0.73***	(0.259)
	0.114	(0.169)	0.17	(-0.204)
Centralization p-value for Climate types	0.614**	(0.256)	0.558	(0.332)
	[0.495]		[0.614]	
Centralization % of European descent in 1960	0.672***	(0.214)	0.758***	(0.245)
	3.313	(2.864)	6.113***	(2.225)
Centralization English legal origin	0.581***	(0.205)	0.627**	(0.261)
	0.079	(0.145)	0.211	(-0.174)
Centralization Catholics	0.591***	(0.215)	0.617**	(0.262)
	-0.016**	(0.007)	-0.019**	(0.007)
Muslims	-0.008	(0.006)	-0.013**	(0.006)
Other religions	-0.004	(0.007)	-0.011	(0.007)
Centralization Constraints on the executive in 1970-94	0.418**	(0.193)	0.551**	(0.24)
	0.146***	(0.046)	0.16***	(0.051)
Centralization Ethnolinguistic fractionalization	0.52**	(0.238)	0.673**	(0.293)
	-0.237	(0.31)	0.046	(0.345)

Notes:

(1) The table shows coefficients and robust standard errors for *Centralization* index and controls introduced one at a time.(2) All regressions have 42 observations, except those including *Log of GDP/cap* (40 observations), *% of Europeans* (41) and *Constraints on the executive* (40).

(3) *** denotes significance at the 1% level, ** at the 5% level, * at the 10% level.

Appendix

Table A1: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
<i>Dependent variables</i>					
Corruption in 1996-2004	42	-0.69	0.477	-1.59	0.72
Rule of law in 1996-2004	42	-0.756	0.554	-1.91	0.71
<i>Main independent variable</i>					
Centralization	42	0.537	0.321	0	1
<i>Controls</i>					
Log of GDP/cap in 1960	40	6.559	0.456	5.549	7.49
% of European descent in 1960	41	0.014	0.03	0.001	0.141
English legal origin	42	0.405	0.497	0	1
Catholics	42	23.457	22.22	0	78.3
Muslims	42	31.536	34.802	0	99.8
Protestants	42	13.812	14.886	0	64.2
Other religions	42	31.195	19.736	0.1	64.1
Constraints on the executive in 1970-94	40	2.458	1.548	1	7
Ethnolinguistic fractionalization	42	0.639	0.271	0	1

Table A2: Pairwise correlations between precolonial centralization and controls

	Centralization
<i>Controls</i>	
Log of GDP/cap in 1960	-0.21
% of European descent in 1960	-0.048
English legal origin	0.098
Catholics	0.134
Muslims	-0.193
Protestants	0.171
Other religions	0.061
Constraints on the executive in 1970-94	0.164
Ethnolinguistic fractionalization	-0.363**

Notes:

(1) *** denotes significance at the 1% level, ** at the 5% level, * at the 10% level.

Table A3: Data and sources*Dependent variables*

Control of corruption in 1996-2004

Average of the control of corruption index for the years 1996-2004. Control of corruption index measures perceptions of corruption defined as the exercise of public power for private gain. Aspects of corruption measured include the frequency of "additional payments to get things done", the effects of corruption on the business environment, "grand corruption" in the political arena or the tendency of elites to engage in state capture. Scale from -2.5 to 2.5, with higher scores corresponding to lower corruption. Source: Kaufmann, Kraay and Mastruzzi (2005).

Rule of law in 1996-2004

Average of the index of rule of law for the years 1996-2004. Index of rule of law measures perceptions of the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence. Scale from -2.5 to 2.5, with higher scores corresponding to better rule of law. Source: Kaufmann, Kraay and Mastruzzi (2005).

Main independent variable

Centralization

For each country measures the share of the non-European population that belongs to indigenously "centralized" ethnic groups. Scale is 0 to 1. An ethnic group is defined as "centralized" if it has 2, 3 or 4 jurisdictional levels above the local community according to Murdock's (1967) *Jurisdictional Hierarchy* variable. (It is defined as "fragmented" if it has 0 or 1 levels) Source: Gennaioli and Rainer (2005). Originally based on Murdock (1967) and Atlas Narodov Mira (1964).

Controls

Log of GDP per capita in 1960

Logarithm of GDP per capita in constant 1985 dollars (international prices). Source: Global Development Network Growth Database, based on Penn World Table 5.6.

Climate types

Climate types are tropical wet, tropical monsoon, tropical wet and dry, steppe (low latitude), desert (low latitude), subtropical humid, dry steppe wasteland and highland. Source: Parker (1997).

% of European descent in 1960

% of population of European descent in 1960. "European" includes all whites. Scale from 0 to 1. Source: Morrison et al. (1989).

English legal origin

Dummy variable taking value 1 for countries with English legal origin, 0 otherwise. Source: La Porta et al. (1999), originally based on "Foreign Laws: Current Sources of Basic Legislation in Jurisdictions of the World" (1989) and CIA World Factbook (1996).

Religion shares

Identify the percentage of the population of each country that belonged to the three most widely spread religions in the world in 1980. The numbers are in percent (scale from 0 to 100). The three religions identified are Roman Catholic, Protestant and Muslim. The residual is called "other religions". Source: La Porta et al. (1999), originally based on Barrett (1982), Worldmark Encyclopedia of Nations (1995), Statistical Abstract of the World (1995), United Nations (1995), CIA (1996).

Constraints on the executive in 1970-1994

Average of constraints on the executive for the years 1970-1994. Constraints on the executive are measured on a seven-category scale, from 1 to 7, with a higher score indicating more constraints. Score of 1 indicates unlimited authority; score of 3 indicates slight to moderate limitations; score of 5 indicates substantial limitations; score of 7 indicates executive parity or subordination. Scores of 2, 4 and 6 indicate intermediate values. Source: Polity III dataset.

Ethnolinguistic fractionalization

Average value of five different indices of ethnolinguistic fractionalization. Its value ranges from 0 to 1. Source: La Porta et al. (1999), originally from Easterly and Levine (1997).