NBER WORKING PAPER SERIES

CHIEFS: ELITE CONTROL OF CIVIL SOCIETY AND ECONOMIC DEVELOPMENT IN SIERRA LEONE

Daron Acemoglu
Tristan Reed
James A. Robinson

Working Paper 18691
http://www.nber.org/papers/w18691

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
January 2013

We thank seminar participants at CIFAR, the University of the Andes in Bogota, Harvard, WGAPE in Boston and Berkeley, and the Sierra Leone Past and Present Conference in Freetown for comments. Juan Camilo Cardenas, Marcela Eslava, Richard Fanthorpe, Leopoldo Fergusson, Michael Kremer, Torsten Persson, Daniel Posner, Pablo Querubin, Paul Richards, Ryan Sheely and Juan Vargas provided helpful suggestions and comments. Lyttleton Braima and Jeanette Yeunbee Park provided capable research assistance. We gratefully acknowledge financial support of the NBER Africa Program, the International Growth Center, and the AFOSR. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

Chiefs: Elite Control of Civil Society and Economic Development in Sierra Leone
Daron Acemoglu, Tristan Reed, and James A. Robinson
NBER Working Paper No. 18691
January 2013
JEL No. D72,N27,O12

ABSTRACT

The lowest level of government in sub-Saharan Africa is often a cadre of chiefs who raise taxes, control the judicial system and allocate the most important scarce resource - land. Chiefs, empowered by colonial indirect rule, are often accused of using their power despotically and inhibiting rural development. Yet others view them as traditional representatives of rural people, and survey evidence suggests that they maintain widespread support. We use the colonial history of Sierra Leone to investigate the relationships between chiefs' power on economic development, peoples' attitudes and social capital. There, a chief must come from one of the ruling families recognized by British colonial authorities. Chiefs face less competition and fewer political constraints in chiefdoms with fewer ruling families. We show that places with fewer ruling families have significantly worse development outcomes today - in particular, lower rates of educational attainment, child health, and non-agricultural employment. But the institutions of chiefs' authority are also highly respected among villagers, and their chiefdoms have higher levels of "social capital," for example, greater popular participation in a variety of "civil society" organizations and forums that might be used to hold chiefs accountable. We argue that these results are difficult to reconcile with the standard principle-agent approach to politics and instead reflect the capture of civil society organizations by chiefs. Rather than acting as a vehicle for disciplining chiefs, these organizations have been structured by chiefs to control society.

Daron Acemoglu
Department of Economics
MIT, E52-380B
50 Memorial Drive
Cambridge, MA 02142-1347
and CIFAR
and also NBER
daron@mit.edu

James A. Robinson
Harvard University
Department of Government
N309, 1737 Cambridge Street
Cambridge, MA 02138
and CIFAR
and also NBER
jrobinson@gov.harvard.edu

Tristan Reed
Harvard University
Department of Economics
Littauer Center
1805 Cambridge Street
Cambridge MA 02138
treed@fas.harvard.edu

1 Introduction

The social science literature on African development has identified the weakness of institutional constraints prohibiting the abuse of state power as a potent cause of poor governance and low growth in Africa (for example Bates, 1981, Sandbrook, 1985, Bayart, 1993, Young, 1994, Herbst, 2000, and the essays in Ndulu, O'Connell, Bates, Collier, Soludo eds., 2007). On a predominantly rural continent, where the reach of the central state is often short, a lack of accountability at the local level may be just as important. The lowest layer of government in most sub-Saharan African (henceforth African) countries is occupied by chiefs, whose areas of administration are essential to economic life. Chiefs raise taxes, control the judicial system, and allocate land, the most important resource in rural areas.[1] Despite their central role in the politics of Africa, however, relatively little is known about how chiefs exercise their political and economic power, how (and whether) they are accountable to their communities, and the effects of institutional constraints on their power for development.[2]

A natural approach to the study of the role of chiefs would be to build on the influential principal-agent analysis of politics (e.g., Barro, 1973, Ferejohn, 1982, Persson, Roland and Tabellini, 1997, Besley, 2007), which has been successfully applied at both the national and local levels in other contexts. In our context, this perspective would suggest that the community delegates power to chiefs and holds them accountable via a variety of mechanisms, including threats of replacement and various forms of community participation in politics. Out of this perspective would also follow a "chiefs as representatives" view of chiefs, which portrays them as responsive to local demands and needs, and is supported by some evidence from the African context. Logan (2009, 2011), for instance, shows that traditional authorities enjoy considerable support from their people. In the AFRObarometer surveys she studies, 58% of respondents agree that "the amount of influence traditional leaders have in governing your local community should increase". Only 8% felt it should decrease. 61% of respondents report considerable trust in tra-

[1] Logan (2011) illustrates this power of chiefs using AFRObarometer survey from Benin, Botswana, Burkina Faso, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. Despite many of these countries having introduced elected local governments, 50% of respondents report that traditional leaders have "some" or "a great deal" of influence in governing their local community. Traditional authorities are often the primary institution regulating matters of importance for local economic growth, raising taxes, mediating disputes and allocating land. They also have influence over many categories of expenditures on local public goods such as schools and the maintenance of infrastructure. In Ghana, Malawi, Zimbabwe, Lesotho, Zambia and Mali, more than 30% of respondents report that traditional leaders have the primary responsibility for allocating land. In Lesotho, Botswana, Ghana, Malawi, Kenya, Zimbabwe, Mali, Zambia, and Senegal, more than 30% of respondents report that traditional leaders have the primary responsibility for resolving local conflict.

[2] Two important exceptions are Goldstein and Udry (2008) and Lange (2009), which we discuss at the end of the Introduction.

ditional leaders, whereas only 51% report such trust in local government officials. Results are similar for perceived corruption. Across Africa, traditional leaders are broadly viewed as more trustworthy and less corrupt than other institutions at the local level.[3] These broader results resonate with the case study literature from Sierra Leone (Fanthorpe 2001, 2005, Sawyer, 2008). Extensions of this approach would suggest that where social capital is greater, accountability promoted by community participation in politics would be higher (for example Nannicini, Stella, Tabellini and Troiano, 2012).

Yet the fact that chiefs retain support from their communities is not direct evidence that they are accountable to their communities. Chiefs in Africa are not typically elected along the lines portrayed in the principal-agent literature and many, such as in Sierra Leone, come to power today via relatively undemocratic selection methods. That they may therefore lack accountability resonates with a different literature that portrays "chiefs as despots" who use their power for personal gain, stifling rural economic development (e.g., Ashton, 1947, Hill, 1963, and Crowder and Ikime, 1970, Migdal, 1988, Berry, 1993, and Mamdani, 1996).[4] In Sierra Leone, predatory behavior by the chiefs is deemed so severe that it is argued to have been a major cause of the civil war that erupted in 1991 (e.g., Richards, 1996).

These two strains of the literature, and their empirical underpinnings, are difficult to reconcile. If chiefs are unaccountable and despotic, how do they maintain such strong popular support? In this paper, we exploit the history of chieftaincy in Sierra Leone to study the impact of chiefs and their powers on economic outcomes, peoples' attitudes and social capital. Our first results suggest that chiefs do act as despots. Though it is true that chiefs are not elected along the lines formalized in the principal-agent literature, there are still important elements of competition in the way they are selected. When chiefs are unconstrained by a form of political competition arising from the presence of multiple ruling families (which are akin to political parties) in a chiefdom, economic and developmental outcomes are worse. However, in line with the chiefs as representatives view described above, relatively unconstrained chiefs also enjoy greater respect of their constituencies, and their constituencies exhibit greater social capital and civic participation. This somewhat puzzling result, we suggest, arises because more dominant chiefs

[3]Baldwin (2011) argues that such trust in chiefs implies they can be used as a means for vote mobilization by national political parties. This is surely the case in Sierra Leone, where in 2011, in anticipation of the 2012 presidential election, the ruling All People's Congress party feted the Paramount Chiefs with a celebration in Bo town, presenting them each with new golden staffs of office.

[4]The influence of the chieftaincy certainly changed after independence, in some places being formally abolished (for instance in Tanzania, Hyden, 1980, Osafo-Kwaako, 2011), and in others having its powers weakened and authority challenged (Rathbone, 2000, on Ghana). Nevertheless, the structure of the institution shaped by colonial policy has to a large extent persisted, and "traditional authorities" hold much authority over Africa's rural population today (see the essays in Crowder and Ikime, 1970).

have been better able to mold the "civil society" and the institutions of civic participation in their villages for their own benefit and continued dominance. Our results suggest both that the principal-agent approach to governance, and standard assumptions about the positive relationship between social capital, accountability and development outcomes may not be appropriate in the African context.

In Sierra Leone, British colonialism transformed society in 1896 by empowering a set of paramount chiefs as the sole authority of local government in the newly created Sierra Leone Protectorate. The paramount chiefs and the chiefs under them remained effectively the only institution of local government until the World Bank sponsored creation of a system of local councils in 2004. These paramount chiefs are elected for life by a Tribal Authority made up of local notables. Only individuals from the designated "ruling families" of a chieftaincy — the elite created and given exclusive right to rule by the British at the initiation of the system in 1896 — are eligible to become paramount chiefs.

The number of ruling families is a natural constraint on the ability of the paramount chief to exploit the power of the chieftaincy. The rents associated with the office are high, and when it becomes vacant, competition between families is fierce. As Murphy (1990, p. 29) describes in his study of the Mende of southern Sierra Leone, in the years leading up to a chief's death families form complex alliances with one another in order to secure votes from the Tribal Authority in the upcoming election. Gaining support at all levels of local politics, from the paramount chief to the village headman, "necessitates forming complex coalitions. Competitive agnates [descendants from the same male line] ally with members of rival lineages at the same political level or with lineages at higher or lower levels to gain support for their intralineage power struggles." With more ruling families, the set of potential coalitions a family can form to oppose another family is greater, implying that a successful candidate in a chiefdom with more families must satisfy a greater plurality of interests in order to be elected. In such chiefdoms, it should then be more difficult for one family to use the chieftaincy extractively, to satisfy only its own narrow preferences.[5] Even if one family is able to dominate the chieftaincy for many generations, an increased number of families implies a greater potential for the family to lose the paramount chieftaincy in an election. This creates a potent (though often off-equilibrium path) threat that will discipline paramount chiefs, forcing them to govern better.

[5]Conversely, with only a few ruling families, local politics is much more easily captured. We saw directly the value of this capture during the the election for a new Paramount Chief in Sogbini chieftaincy which we attended in December 2009. The Bio family, which had ruled the chieftaincy since 1896, was displaced by the Bayo family, the only other ruling family. The announcement of the result created a great deal of elation, and when we asked a member of the family of the newly elected chief what they would get out of this election, they replied: "everything".

We argue, using historical case study and regression evidence, that the number of ruling families in a chieftaincy was determined largely by historical factors unrelated to the determinants of economic and political outcomes today, providing an attractive source of variation in the investigation of the long-run effects of constraints on the abuse of power in the institution. In Section 2.3 and the Appendix we study the history of the ruling families in a sample of chieftaincies, documenting that their origins are highly heterogenous and often the result of historical accident, such as the availability of a male heir, or the number of leaders in an invading war party. We also show that the number of ruling families is uncorrelated with the level of development before the creation of paramount chiefs as measured by tax assessments per chieftaincy of the British colonial government in the late 1890s. It is also uncorrelated with a variety of other variables that might impact subsequent development, including distance to navigable rivers, distance to the railway and minimum distance to major towns.

To measure the number of families, we conducted a survey in 2011 of "encyclopedias" (the name given in Sierra Leone to elders who preserve the oral history of the chieftaincy) and the elders in all of the ruling families of all 149 chieftaincies.[6] While the government maintains no official list of families, there is agreement within chiefdoms about the identity and number of families. We used the survey to re-construct the history of the chieftaincy for as far back as our respondents could recall. This history included the names of the paramount chiefs, which ruling family they were from, and, when available, the dates they were elected. We also collected information on the origins of the chieftaincy and of each of the ruling families. We used (the unfortunately highly incomplete) archives of the Sierra Leone National Archive situated at Fourah Bay College, as well as Provincial Secretary archives in Kenema, the National Archives in London and available secondary sources to cross-check the results of our survey whenever possible. We are the first to our knowledge to have constructed a comprehensive history of the chieftaincy in Sierra Leone. A companion article, available online, Reed and Robinson (2012) details the history of each of the 149 chieftaincies as best as possible using our survey data and available secondary sources.

Our first set of empirical results, which focus on educational, health and economic outcomes, are in line with the chiefs as despots view: there is a significant positive relationship between the number of families on the one hand, and human capital outcomes, such as literacy and educational attainment, and also the proportion of people working outside agriculture, which is a useful proxy for the economic development (since there are no micro data on incomes

[6]We thank Mohammed C. Bah, Alimamy Bangura, Alieu K. Bangura, Mohammed Bangura, Shaka Kamara, Solomon Kamara, Bai Santigie Kanu, Salieu Mansaray, Michael Sevalie, Alusine M. Tarawalie, and David J. Walters for their diligence and dedication in helping collect these data.

in Sierra Leone and more people tend to work outside agriculture in more prosperous areas). Quantitatively, the effects are substantial. Moving from 1.8 ruling families to 7.7, from the bottom quartile to the top, would increase literacy, primary and secondary school attainment by 7 percentage points and non-agricultural employment by 3 percentage points, in all cases from relatively low bases (for instance 32% and 7% for literacy and non-agricultural employment respectively). We also find substantial positive effects of the number of ruling families on various measures of child health and certain proxies for asset ownership.

However, we also find that places with fewer ruling families have *more* favorable attitudes towards institutions of the paramount chief's authority. In addition, we find that many measures of social capital, such as attendance of community meetings, participation in social groups and the undertaking of collective actions, are also *higher* in places with fewer ruling families. This juxtaposition of results is a clear challenge to both the "chiefs as representatives" and "chiefs as despots" views in African politics. Less constrained chiefs, who are associated with worse outcomes, are viewed more favorably by their people, people who themselves have more social capital. More generally these results are a challenge to the standard principal-agent approach and to the literature on the political role of social capital, which argues that social capital manifesting itself in political participation by the citizens is crucial for good governance (e.g., Putnam, Leonardi and Nanetti, 1993, Bowles and Gintis, 2002).[7]

We argue that these correlations can be explained by the fact that the political economy of rural Africa deviates in important ways from that of developed countries. Political or social institutions, such as community meetings, that look like they may further accountability in the principal-agent literature function differently in many weakly-institutionalized polities. Indeed, they do not function to control politicians but are structured by them to further their power and their own control over society. In this, chiefs are the local equivalent of the "personal rule" at the national level defined by Jackson and Rosberg (1982, pp.17-19) as

> "a system of relations linking rulers ... with patrons, clients, supporters, and rivals, who constitute the 'system'.... The system is 'structured' ... not by institutions, but by the politicians themselves."

Consistent with this pattern, paramount chiefs facing limited competition do indeed act despotically, but they are able to do so in part because they use non-governmental organizations as

[7] One possible argument would be that civil society may endogenously become stronger as a barrier against the despotic power of chiefs in places with a few ruling families but despotic chiefs still stifle economic development despite this stronger civil society. This argument, however, is consistent neither with the evidence that, when there are only a few ruling families, attitudes towards chiefs are more favorable nor with the anthropological evidence presented below, for example, and Murphy (1990) and Ferme (2001).

a way of building and mobilizing support. Put differently, relatively high measures of civic participation in villages with powerful paramount chiefs is not a sign of a vibrant civil society disciplining politicians, but of a dysfunctional civil society captured by the paramount chiefs.[8] Our results also help explain why many people have positive attitudes towards the system in Sierra Leone: if civil society has been completely captured, citizens will still find it valuable to interact with elites and institutions of their power. In places where paramount chiefs are less constrained, people will be more dependent on their patronage and favors, and thus will find it useful to make specific investments in the system.[9] Having made these investments, individuals will have an incentive to see this capture of civil society perpetuated in the long run, which explains positive attitudes towards the system in Sierra Leone and most probably in the AFRObarometer data.

Our findings are relevant for understanding the role of chiefs in sub-Saharan Africa more broadly. As we discuss in our concluding remarks, the indirect rule institutions of Sierra Leone had many similarities to those in other parts of British Africa. In this light, it should not be a surprise that our findings do resonate with several studies of the political economy of Africa. In a seminal discussion, Killick (1978) pointed out that it was incorrect to think of interest groups as capturing or controlling the actions of the state in Ghana since independence (in the light of the then-dominant paradigm in public choice, e.g., formalized by Becker, 1983). Rather, in line with Jackson's and Rosberg's and our discussion above, Killick notes: "Nkrumah succeeded in capturing the lobbies; in making them dependent on him instead of himself on them" (p. 39).[10]

Our paper is most closely related to Anderson, Francois and Kotwal (2011) who show that in parts of western India where landownership is dominated by Maratha elites, development outcomes are worse, but social capital is higher. Their interpretation is similar to ours in the sense that they argue that Marathas block development policies which are not in their interests, but at the same time poor people are integrated into patron-client relations with the Marathas, creating high levels of observed social capital. Interestingly, it appears that just as in Sierra

[8] As one chief from Kono district told us in reply to a question about whether he was able to influence the way people voted in elections: "if I say left they go left, if I say right they go right."

[9] This was observed for instance by Putnam et. al. (1993) in Southern Italy, where despite relatively low levels of measured "social capital", citizens are much more likely to visit the offices of local government officials; when they go, however, they are also much more likely to ask for favors, such as employment.

[10] Carter (2011) shows how, in Congo Brazzaville, the dictator Denis Sassou-Nguesso forces all the elites to join a Freemason's lodge he formed himself as a way of monitoring, which is consistent with our interpretation in the context of Sierra Leone. In fact, Sassou-Nguesso got this idea from Omar Bongo, former president of Gabon, who also founded a lodge and historically Masonic lodges played a very similar role in national politics in Sierra Leone (e.g. Cohen, 1981). Outside of Africa, the point of Collier and Collier's (1991) groundbreaking study of Latin American political economy is that the state created the interest groups and manipulated them, not the other way round.

Leone, non-elites also have positive attitudes to the elite when the elites are more powerful.

In the context of African politics, Boone (1995, 2003) emphasizes that the way central authorities related to chiefs was critical in determining how post-colonial states formed. Goldstein and Udry (2008) show that connections to chiefs in Akwapim, Ghana are crucial in determining property rights to land and hence investment incentives in agriculture, though they themselves propose a relatively benign interpretation of the chiefs' actions. Lange (2009) uses data on the extent to which legal decisions were decided by chiefs as a measure of the intensity of indirect rule and found this to be negatively correlated with development outcomes at the national level.

Finally, our results and interpretation also suggest that the literature on social capital and political participation needs to be refined when applied to African politics (and perhaps elsewhere). Putnam's original claim that all social capital was good for governance was critiqued by Portes and Landolt (1996) and Portes (1998), who argued that social capital could take perverse forms (e.g., Hitler's Brownshirts). In response Putnam (2000) distinguished between "bonding" social capital which is good for a group but not necessarily for society, and "bridging" social capital which creates links across groups, for instance elites and non-elites, and is thus unambiguously thought to improve governance outcomes. This refined view appears to be relatively well accepted in the literature.[11] In our data, however, it is precisely this bridging social capital that is higher when chiefs are more powerful and development outcomes worse. Instead, our results suggest that, under certain circumstances, in particular, related to the weakness of institutions, it is precisely the "good" types of social capital can be used for local elites as a way of controlling society. Though most of the development literature has assumed that measures of social capital in Africa would have the same correlation with development outcomes that they do in Europe (see Jerven, 2010, for a review), our findings are consistent with what little work has looked at a more micro level at the relationship between social capital and governance in Africa; Widner and Mundt (1998), for instance, find that measures of social capital are uncorrelated with measures of accountability in Botswana and Uganda. In our data, development outcomes and measures of social capital are in many cases negatively correlated.

The paper proceeds as follows. In Section 2, we briefly present the historical background of the chieftaincy in Sierra Leone discussing how the institution was created, how it functioned

[11] See also Grootaert and van Bastelear (2002), who point out in their introduction that social capital can create negative externalities (citing the Italian Mafia and the Interahamwe of Rwanda), but ultimately conclude that bridging social capital is associated with positive development outcomes and all of the studies but one in the book emphasize the positive effects of social capital. Even papers which are critical of the literature emphasize the efficiency-enhancing potential of social capital, e.g. Durlauf and Fafchamps (2005). One exception is Coletta and Cullen (2002), which argues that the genocides and civil wars in Cambodia and Rwanda were caused by the presence of strong bonding social capital and weak bridging social capital.

and how it has persisted almost unaltered since the turn of the 20th century. A more detailed discussion of the origins of a sample of chieftaincies and their ruling families, which provides an important argument for the credibility of our identification strategy, is provided in the Appendix. Section 3 discusses the survey data we collected and also the data on covariates, and outcome variables and presents some basic descriptive statistics. Section 4 then examines in detail the relationship between the number of ruling families and measures of the concentration of their power. Section 5 focuses on our identification strategy and shows that the number of ruling families is uncorrelated with pre-colonial measures of development. Section 6 presents our main results of the number of ruling families on development outcomes, attitudes and measures of social capital. Section 7 concludes.

2 Historical Background

2.1 Indirect Rule in Africa

While chieftaincies in Africa have their roots in pre-colonial society, the institutions as they exist today were shaped greatly by colonial indirect rule. Indirect rule across Africa was viewed by colonial administrators as a way to maintain law and order, and to decrease the cost of local government administration to increasingly over-extended empires. The idea was simply that an effective way to govern a colony was to keep in place the existing rulers and rule through them. Though the policy of indirect rule was articulated more clearly as a tenet of colonial rule in British Sub-Saharan Africa, French colonial administrations also shaped rural institutions in similar ways (e.g. Guyer, 1978, Geschiere, 1993). Indirect rule was also common elsewhere in the world, in colonial Latin America and British India (e.g. Iyer, 2010). Indirect rule shaped African rural institutions systematically in two ways:

1. The authority to collect taxes and spend revenue, as well as the administration of civil law and property rights, was reserved for a small number of rural elites.

2. These elites now received their formal authority from the colonial government, obliterating existing accountability mechanisms.

The lack of accountability in indirect rule institutions is stark. Lord Lugard, the colonial administrator most widely associated with the intellectual foundations of indirect rule—a model he elaborated during the pacification and control of Northern Nigeria—wrote in his manual *The Dual Mandate In British Tropical Africa* (Lugard, 1922, pg. 203) how chiefs, despite their freedom to govern their people as they chose, would derive their legitimacy entirely from the

colonial government: "The chief himself must understand that he has no right to place and power unless he renders his proper services to the state." The chiefs, he wrote, "must work for the stipends and positions they enjoy." Chiefs were accountable to administrators, but not to their people. Lugard argued that to be effective chiefs must still be selected according to "native custom" but the colonial interpretation and institutionalization of "native custom" typically made chiefs much less accountable than pre-colonial leaders had been, something certainly true in Sierra Leone (see Abraham, 2003, on Mendeland, Goody ed., 1979, more generally).

2.2 Chiefs in Sierra Leone

The colony of Sierra Leone was established in 1788, primarily as a settlement for freed slaves from the Americas and Caribbean. The boundaries of the colony initially extended little beyond the environs of the main settlement and now capital, Freetown. While Portuguese and later British traders had interacted with locals beginning in the 15th century, the nature of these relationships had been primarily economic; treaties were signed protecting property rights and trade routes, but the sovereignty of local peoples over their territory had been recognized unequivocally.

This changed in 1896, when Governor Cardew unilaterally declared a Protectorate over the interior of the country, stating that signatories of previous treaties with the British colonial government, then recognized as "native chiefs" with full political autonomy, were now subordinate to the government in Freetown.[12] The colonial government proceeded to establish a system of indirect rule, assessing a house, or "hut," tax in 1898, and imprisoning various chiefs who refused to pay (Chalmers, 1899). Though the Cardew's declaration of a protectorate sparked the violent "Hut Tax Rebellion" led by Bai Bureh of Kasseh chiefdom and others, the government was largely successful in suppressing opposition. Over the next decade it had established the chiefdom, led by the paramount chief, as a unit of indirect rule that would be an almost exact example of the model later described by Lugard (1922). The law of Sierra Leone now made the paramount chiefs responsible for the arbitration of land and legal disputes, the collection of tax revenue, and the general welfare of their people, creating tremendous opportunities for rent seeking. Moreover, by making chiefs subjects of the colonial government, the Protectorate Ordinance undermined many existing checks on the power of chiefs from within the chiefdom.

After the declaration of the Protectorate, the colonial government established a formal system of succession in the chieftaincy, in which paramount chiefs rule for life, and are elected by vote of the "Tribal Authority", a group comprising the members of the chiefdom elite. The authority also includes the "chiefdom speaker", an aide to the chief. Chiefdom speakers will

[12] The appendix in Goddard (1925) lists the treaties and signatories.

often temporarily take on the role of "regent" or caretaker once a paramount chief dies. At the turn of the 20th century, these authorities were small groups of approximately 5 to 15 headmen and "sub-chiefs" of the various towns and villages within the chiefdom. Their numbers have expanded over time. By the 1950s, voting roles in paramount chief elections comprise approximately 40 to 60 members. The 2009 Chieftaincy Act provides that there must be one member of the Tribal Authority for every 20 taxpayers. Still, however, the Tribal Authority comprises mostly members of the rural elite; they are not elected by these taxpayers and neither is the paramount chief.

The declaration of the Protectorate also made the ruling family the unit of political competition within the chiefdom. As we will discuss in the following section and the Appendix, the ruling families can trace their descendants to the leaders of the chiefdom at the turn of the 20th century, when the institution coalesced and began to "ossify", to use Abraham's (2003) language. Only members of ruling families are eligible to stand for election. The 2009 Chieftaincy Act stipulates that a person is qualified to stand as a candidate to be paramount chief if he or she was born in wedlock to a member of a ruling family. "Where tradition so specifies", this requirement is expanded slightly to include anyone with "direct paternal or maternal lineage to a member of a ruling family, whether born outside of wedlock or not". A ruling family is recognized as one that was established before the time of independence in 1961.

Across chiefdoms there is broad consensus on the number of ruling families, though there is no official list even in the ministry in charge of the elections. A particular person's membership in them is at times contested since most people do not have written birth certificates or other definitive methods of proving their legitimacy. These disputes are resolved in cooperation with the Provincial Secretary[13], and often hinge on whether the aspirant can show his or her relative was recognized by British officials as being legitimate to stand for election before independence, and thus was a member of an established ruling family. Before the 2009 Act, elections were administered under a customary law that maintained the same basic principle: only members of established ruling families could stand.

Indirect rule also created a large set of opportunities for chiefs to seek rents and distort local economic activity. Perhaps the most egregious opportunity was provided by the land laws codified in the Protectorate Land Ordinance of 1927. These laws, still in place today, prohibit the transaction of land by "non-natives"—those not born of the chiefdom—and place ultimate

[13]This is currently an office in the Ministry of Rural Development, Internal Affairs and Local Government, but has its history as an office of the colonial administration. The persistance of the legacy of indirect rule is highlighted by the fact that central government still uses the administrative structure of the colonial government to interact with the chiefs.

ownership of all land in the hands of the paramount chief, who for this reason is often called the "custodian of the land". These laws created opportunities for chiefs to capture rents from both private citizens and the central government. Chiefs used their authority as custodian to impose elaborate tax structures on those who used the land for agriculture.[14] They also used this same authority to levy taxes on trade in and out of the chiefdoms. In addition, when public construction is undertaken for roads, schools, clinics and markets by the central government, the law requires that land lease agreements be negotiated with the chiefs, who often use these leases to extract payments for themselves.

Another opportunity to create distortions was created by the chief's role in providing local public goods from the tax revenue the government mandated them to collect. By the mid 20th century, it had become clear that many paramount chiefs had badly neglected this role. Lord Hailey examines Sierra Leone's local tax estimates for the year 1948, in which £134,302 (£3,810,000 in 2011, using a CPI deflator) were raised. Of this revenue, 58% was spent on administration, "the major part of this", he writes "representing payments to the Chiefs and office holders and members of the courts." Of the remaining expenditure, agriculture is only 3.5%, education 4.6%, forestry 1.9%, and public works 4.3%. Hailey writes, "an examination of the detailed estimates shows that many of the Native Administrations provide no service at all under some of these heads." Out of the 128 for which he had data, "only 51 made provision for expenditure on Agriculture, 56 for Education and 45 for Forestry." The public works, he wrote, were of terrible quality (Hailey, 1950, Part IV, pp. 307-308).

While the chiefs had complete discretion over expenditure of their own revenues, during the 20th century their native administrations were also the primary conduit through which the central government administered public services, leaving central government funds in addition open for capture. No hard numbers are available to corroborate the extent of this capture, but many failed examples of local government reform suggest that the chiefs wielded near total control over government administration in the provinces, making the opportunities for capture large indeed. For instance, the British created local councils early on as a way to distribute public expenditure, but as shown by Tangri (1978) these were quickly dominated by the paramount chiefs and were abolished after independence. Cartwright (1970, pg. 44) discusses the role of the paramount chiefs in Sierra Leone's Legislative Council in 1947, which formed the basis for the Parliament at independence in 1961. Council representatives for the Protectorate, who were intended to oversee central government expenditure in local areas, were chosen through a

[14]For instance, today in Lokomassama chiefdom, the chiefdom authority levies specific tax rates on a variety of crops. Non-natives in the chiefdom still complain about arbitrary taxes levied on their output.

process of indirect elections, at the base of which was the Tribal Authority, meaning that the Protectorate was "under the control of chiefs rather than effectively controlled by a popular electorate." It was not until 2004, under a World Bank sponsored post-war governance reform, that a system of democratically elected local councils was established to liase with the central government in determining health, education and agriculture expenditure in rural areas (for a review, see Casey, 2007).

A final opportunity for the chiefs to exploit their power was created by the government's recognition of their authority to compel their subjects to "communal labor". This authority was often used to pull scarce labor towards a chief's land during harvest season, potentially distorting labor markets. This phenomenon has deep historical roots; domestic slavery was commonplace in Sierra Leone until the early 20th century, a legacy of Sierra Leone's role as a major slave exporter. In 1923 it was estimated that 15% of the Protectorate population was in servitude, and the chiefs themselves were frequently large slave owners. Domestic slavery was only outlawed in the Protectorate in 1928, but even then the law was only gradually enforced and in some places ignored (Arkley, 1965).[15] Compulsory labor was frequently a cause of dissent in the chiefdoms, but complaints by citizens were frequently ignored, both by the colonial administration and later by the post-independence government.[16] The chiefs thus had many opportunities both to create distortions in trade and labor and agricultural markets, as well as to capture public revenue that would otherwise have been directed towards public goods.[17]

[15]Slavery in many British African territories was not outlawed until the 1920s.

[16]For instance, chiefdom records at the Forah Bay College National Archives show that in 1966 chiefdom councillors from a section of Yawbeko chiefdom in Bonthe district lodged a formal complaint with the government. They alleged that Paramount Chief Joe Jangba had both appropriated land unfairly from their section and compelled residence to labor without pay on various road projects in the area that would benefit the chief's farms. They wrote "it is no [sic] communal labour when force has been put to bear on us. We have been tortured, molested, illegally fined and sent to the Chiefdom lock-up in case of resistance to work the road." What is striking is the response of the Provincial administration, then independent of Britain. In a subsequent letter, the District officer of Bonthe wrote to the Provincial Secretary in Bo that the matter had been summarily closed:"I confirm that I have severely warned the petitioners–and everyone present at that–to avoid the slightest repetition of such questionable conduct," a reference to their complaint. The petitioners were compelled subsequently to sign an apology letter, begging obsequiously for forgiveness.

[17]It is also worth noting that the fundamentally undemocratic chieftaincy institution formed the basis for national governments after independence. The first Prime Minister, Sir Milton Margai, himself from a powerful ruling family in Lower Banta chiefdom, built his Sierra Leone People's Party (SLPP) not by uniting the population, but rather by uniting a plurality of paramount chiefs and their representatives in the Legislative Council to support his government. Without any real tradition of democratic constraints on the state, it is not hard to generate hypotheses that explain why the country's government subsequently took such an authoritarian form in the 1970s and 1980s.

2.3 Origins of Ruling Families

Our empirical strategy rests on the argument that the number of ruling families within a district is orthogonal to factors determining social capital and development outcomes today. To support this argument we provide in the Appendix detailed case studies of six chiefdoms. This both gives some more context related to the chieftaincy institution in Sierra Leone and also shows vividly how variation in the number of ruling families typically resulted from idiosyncratic historical factors at the beginning of the 20th century, such as the availability of male heirs to the forbearer of the chiefdom, or the organizational structure of an invading tribe's war party. In all cases, though there was some flux in the number of families in the late 19th century and at the turn of the 20th century, the number of families was fixed by around 1920, and did not change thereafter.

In addition, we will show in Section 5 that the number of ruling families is unrelated to proxies for economic development at the end of the 19th century and to exogenous drivers of economic prosperity, such as proximity to navigable rivers or the railroad, bolstering the historical narrative in the Appendix.

3 Data

3.1 Documenting Chieftaincy Institutions

To measure the power of the various paramount chiefs we have created, to our knowledge, the first comprehensive list of ruling families across chiefdoms, and the first comprehensive history of the chieftaincy in Sierra Leone.

Though detailed records of some chieftaincy elections exist, many were destroyed during the civil war when the Provincial Secretaries' offices in Bo and Makeni were razed, making the written record insufficient to construct such a dataset. To complement archival records and secondary sources, we conducted a survey of all 149 chiefdoms.[18] To do this, local researchers with local language skills were trained in qualitative interview methods and visited all 149 chiefdoms. Researchers constructed the lists of ruling families, previous paramount chiefs, and origin stories of each of the ruling families through extensive interviews with local oral historians, known as "encyclopedias".

Researchers were required to visit members of each ruling family in order to ensure that

[18] Of the secondary sources, Fyfe (1960), which gives a comprehensive history of 19th century Sierra Leone and information on native rulers, is the most important. See also Alie (1990). Other sources cover different regions in the country. Abraham (1979, 2003) is authoritative on Mendeland in the south of the country (see also Little, 1951). Wylie (1977) covers Temne country in the north, Finnegan (1965) and Finnegan and Murray (1970) the Limba country (see also Fyle, 1979a,b, and Fanthorpe 1998). Howard (1972, 1976) studies the 19th century Guinea border country in the northwest, and Lipschutz's (1973) study focuses on the northeast.

they obtained a balanced perspective on the family's history and the history of the chiefdom. Researchers operated in teams of two, alternating partners. All regressions obtain identical results with researcher fixed effects, ensuring our results are not due to measurement error at the level of the researcher.

There is variation across chiefdoms about how far back the oral historians could recall. Some chiefdoms are able to trace their histories back until the 18th century, others can only remember back to the 1930s. In addition, for amalgamation chiefdoms, which were created in the late 1940s and 1950s by the colonial administration by amalgamating certain smaller chiefdoms for tax collection purposes, researchers were unable to trace lineages of all the component chiefdoms. Hence our record for these chiefdoms only goes back until the period of amalgamation. This means that recall is lower in amalgamation chiefdoms on average. Though it does not directly affect our key variable, the number of ruling families, we wish to control for recall, and we thus add to all specifications the number of paramount chiefs the historians could recall. In addition, we also control for whether the chiefdom is created by amalgamation. This is both because of potential differences in recall in amalgamation chiefdoms, and also because of omitted variable concerns: before amalgamation, each of the constituent chiefdoms had their own paramount chief and ruling families; when they were merged each family joined the larger chiefdom. Since amalgamated chiefdoms tend to be in the more remote and poorer areas, if we did not control for it, amalgamation would be an omitted variable, correlated both with the number of ruling families and development outcomes.

Appendix Table 1 gives a list of all of the chieftaincies ordered by district with information on the number of ruling families, whether or not the chieftaincy was the result of an amalgamation between previously separate chieftaincies, and also the number of paramount chiefs that our informants could remember. Table 1 gives some basic descriptive statistics by quartiles of the number of families. Panel A shows that the mean number of seats (meaning the number of paramount chiefs that ruled) observed was 5.8. This was slightly larger for chieftaincies in the lowest quartile of the distribution of the number of families. Panel A of Table 1 also gives data on the average number of ruling families. The average is 4.0, ranging from one to a maximum of 12. The table also shows that 30% of the chieftaincies were formed by amalgamation. It also shows a strong monotonic relationship between amalgamation and the number of families, which motivates our concern that amalgamation could be of first-order importance, and is worth controlling for.

Figure 1 shows visually how the numbers of families are distributed geographically in Sierra Leone. We plot here the quintiles of the number of families with the darkest color being those

chieftaincies in the top quintile of the distribution (the 30 chieftaincies with the highest number of families). This figure makes it clear that chieftaincies with many families are not clustered into any particular area of the country. One is close to Freetown in the west of the country. Others are right down in the south, west on the coast, or further north on the border with Guinea. Others are in the far northeast, and still others clustered in the center of the country. The map also contains the lines of rail and paths of navigable rivers. Again the chieftaincies with the highest number of families do not seem to cluster around navigable rivers or the railway lines.

3.2 Outcomes

We study the effect of the number of ruling families on a wide range of development and social outcomes. Our primary data sources are the 2004 Sierra Leone Census, the 2008 Demographic and Health Survey (DHS) and the 2007 National Public Services Survey (NPS). We use the census to study educational and employment outcomes and the DHS to study health outcomes of children under five. We use the NPS to study attitudinal and social capital outcomes, as well as asset ownership. Finally, we also use the 1963 census for a cohort analysis of human capital to study when the gap between chiefdoms with high and low development outcomes began to occur.

Panel B of Table 1 shows the descriptive statistics of key development outcomes by dataset. For educational outcomes, we match individuals to chiefdoms based on chiefdom of birth in order to identify the link between chieftaincy institutions and long run development.[19] The literacy rate among those born in Sierra Leone's chiefdoms is very low, at 32%. It is somewhat lower, 31%, for chiefdoms in the lower quartile of the number of families, and somewhat higher, 33%, for chiefdoms in the highest quartile of the number of families. For primary and secondary schooling, the mean attainment rates are also very low (35% and 16% respectively), and the raw data do not vary monotonically with the number of families. The final development outcome we examine in the census is the proportion of the population in non-agricultural employment.[20] Here, we match employment to chiefdoms based on chiefdom of residence, which seems a reasonable proxy for the level of contemporary development of the chiefdom, and also to chiefdoms based on chiefdoms of birth, allowing us to examine the long run trajectory of people born under different chieftaincy institutions. In both cases, the mean of this variable is very low, at 7% and 13% respectively,

[19] Similar, in fact stronger, results obtain matching individuals based on chiefdom of current residence, consistent with an net outflow of human capital from chiefdoms with few ruling families

[20] Specifically, any job that is not farming, fishing or forestry. A previous version of this paper obtained similar results using non-agricultural employment excluding public sector workers.

since most Sierra Leonians are firmly established in agricultural occupations. The higher number when linking on chiefdom of birth reflects the use of a larger sample that includes people who were born in the chiefdoms, but later emigrated to urban areas, where there are more jobs. In both cases, employment rates are higher in the top quartile of the number of families relative to the bottom. When linking on chiefdom of birth, this relationship is monotonic.[21]

In the DHS, we are able to study health outcomes for children under five, as well as to corroborate results from other surveys. The DHS sample, which is smaller, covers only 117 of 149 chiefdoms, but these chiefdoms still span the full range of the numbers of families, from 1 to 12, with quartile averages of the number of families being very close to those in the full sample, at 2.3, 4, 5, and 7.5. In this dataset, children are matched to chiefdoms based on chiefdom of current residence, as chiefdom of birth is unavailable. The under five health outcomes from the DHS reported in Panel B of Table 1 show the poor state of childhood health in rural Sierra Leone. Average weight for height Z-scores, relative to the World Health Organization Child Growth standards, are -0.15, with no clear trend by number of ruling families. Average body mass index Z-scores appear better relative to standards, at -0.014. The incidence of moderate or severe anemia is very high at 50%.

For our analysis of contemporary attitudes and social capital activities we use the NPS, matching individuals to chiefdom of current residence.[22] The panels C and D of Table 1 present the data on the attitudinal and social capital variables. For the attitudinal questions there is no monotonic pattern. However, comparing the extreme quartiles, we see that the share of people agreeing one should respect authority is 5 percentage points higher in the lowest quartile of the number of families relative to the highest. For some of the social capital variables, the patterns are clear. For example, the proportion of people that attended a community meeting rises from 39% in chieftaincies with many families to 46% in those with few. Those who are a member of a secret society rises from 36% to 44%. The NPS also gives us further development outcomes that also appear in the DHS. These are mobile phone ownership and whether or not a person's house has a cement floor, an indicator of great consequence for welfare during the rainy season. Comparing the top to bottom quartile in panel B we see that such asset ownership is at least 50% higher when there are more ruling families in a chieftaincy.

[21] A previous version of this paper presented slightly different versions of these statistics. First, the distribution of chiefdom averages was presented instead of the raw averages using individual data. Second, attainment was calculated using an older cohort–only those who could have finished school before the war. This made schooling outcomes appear lower in magnitude. In this version primary school attainment is presented simply for all individuals over the age of 12, and secondary school attainment for all individuals over the age of 18. The latter change is also reflected in our regression tables, but did not change any results.

[22] Similar results obtain matching on chiefdom of birth.

3.3 Other Data

To investigate whether the number of ruling families is systematically related to prior development outcomes or factors that might help to determine economic development, we also study the relationship between the number of ruling families and proxies for economic development in 1900. As proxies we use average annual hut tax revenue assessed by the colonial government between 1898 and 1902. The official tax rate at the time was 10 shillings per house with greater than four rooms and 5 shillings for every house with three or less rooms (Chalmers, 1899).[23] Under the very reasonable assumption that constraints on housing plot size were not binding, these tax assessments provide a useful proxy for the wealth of a chiefdom at the time.

The source for the tax assessments is *Tax Book for Various Chiefdoms and Districts 1898-1902*, which we accessed in June 2010 in the National Archives at Fourah Bay College in Freetown. The book contains a comprehensive list of the tax assessments on all recognized chiefdoms at the time. Though many chiefdoms have maintained their boundaries since 1898, some have not and the mapping to chiefdoms today is imperfect. Historical chiefdoms were manually matched to current ones using the names of the chiefdom. This work was aided by historical records, which helped to identify name changes. In three cases, an assessment was recorded for a chiefdom that is today split into two chiefdoms. In these cases, the assessment was split between today's chiefdoms using the relative surface area of the two subdivision chiefdoms as weights. Annual averages were then constructed for each chiefdom, using the simple mean of total chiefdom tax assessment for all years observed between 1898 and 1902.[24] Across years, an average £33,254 were assessed annually. In total 91% of this average tax assessment was mapped successfully to a chiefdom, leaving £3,172 unmapped. A total of 87 contemporary chiefdoms were linked to a tax assessment. Reliable population estimates by chiefdom are not available for this time period, so we normalize tax assessment alternatively by square kilometer and 2004 population in our specifications.

One can provide a very rough estimate of whether the total tax assessment observed in these data is reasonable given the population at the time. According to the 1921 Native Census, the native population of the Protectorate in 1921 was 1,450,903, an increase from 1,323,151 in 1911. This implies a 9.6% growth rate over the decade. In 1921, there were 239,148 households, with an average of 5.9 people per house. If we assume a constant growth rate in the previous decade, this implies that in 1901 there was a population of 1,207,254, or, using the 5.9 people per house,

[23] There are 20 shillings to a pound.

[24] Taxes were not assessed in some areas during some years, particularly in 1899 in the immediate aftermath of the hut tax rebellion

204,619 houses. If everyone had a house of 3 rooms less, with £33,254 assessed each year, this means that about 65% of the houses were assessed. This number matches closely the 58% of chiefdoms we could match to an assessment. Assuming an uniform distribution of houses across chiefdoms, this implies an almost complete assessment of the chiefdoms covered.

In addition to the tax data we use distance from the chiefdom centroid to the coast, nearest navigable river, the railroad, and minimum distance to Sierra Leone's three major towns as additional proxies for development in 1900. These variables were calculated using GIS maps provided by Statistics Sierra Leone.

Panel E of Table 1 presents descriptive statistics from these. The raw averages shows no monotonic relationship between larger tax assessment and tax assessment per square kilometer in the chiefdoms and the number of ruling families. Panel E also shows there is no monotonic relationship between two exogenous causes of economic development in 1900, distance to navigable rivers and distance to the railroad. There is a slight trend visible with respect to distance to the coast and distance to the 3 largest towns in Sierra Leone, a proxy for urbanization, but as we discuss in Section 5, these differences are too small to be economically meaningful.

Finally, panel F presents the descriptive statistics on the individual covariates used in our regressions, using census variables linked to chiefdom on chiefdom of current residence.[25] There is no significant variation in gender and age distributions across the number of families, but ethnic composition (in terms of Sierra Leone's three major ethnic groups, the Mende, Temne and Limba) does vary somewhat with the number of families: the Temne are more concentrated in the chiefdoms with many families and this relationship is monotonic. The Mende and Limba are slightly less concentrated in the chiefdoms with many families, but these relationships are non-monotonic. Despite these non-monotonicities, the variation in the number of families across ethnic concentration justifies our use of district fixed effects, which should control for differences in ethnicity (as ethnic groups are relatively concentrated in particular districts).[26]

We also show that there is no significant variation across number of ruling family quartiles in filial connections to the chief. The sample means, however, do show substantial direct connections to the chieftaincy among the rural population; 9% of households have a paramount or section chief in their household (section chiefs are plentiful, and subordinate to paramount chiefs, controlling sections of the chiefdom). 18% have a village headman in their household, reflecting the low population density in Sierra Leone, and the small size of villages. Finally, 30% of household heads are members of a ruling family. This reflects that membership in a family

[25] Statistics are very similar matching on chiefdom of birth.

[26] Our core individual level regressions also include dummies for membership in 13 different ethnic groups.

is relatively loose, often spanning many cousins and second cousins. We will return to these variables in Section 6.5, where they are used for robustness checks.

4 The Number of Families and the Concentration of Power

Our argument rests on the claim that fewer families creates more opportunities for the concentration (and abuse) of power in the paramount chieftaincy. Our first exercise is a "reality check" to show an empirical link between the number of families and some simple measures of the concentration of power within a chiefdom — though we cannot measure the concentration of de facto power, which is most relevant for our argument.

In elections with plurality rule, a standard approach focuses on winning vote margins (see Ansolabehere and Snyder, 2006, for a discussion of this and other approaches), but there is no comprehensive data on actual voting for chiefs. Instead, we follow Stigler's (1972) suggestion and use two measures in the spirit of a Herfindahl index to measure the concentration of power amongst political parties (see also Acemoglu, Bautista, Querubín and Robinson, 2008, for a similar index to measure the extent to which small number of people controlled local political power in Colombia). We construct two simple indicators of the concentration of power:

1. A Herfindahl index that measures the extent to which the office of paramount chief has been dominated by a subset of ruling families over time.

2. The number of times the family that has held the paramount chieftaincy most has done so (i.e., the maximum of the number of times any family has held the chieftaincy).

In each chiefdom c we observe F^c, the set of ruling families, and S^c the set of chieftaincy seats, as far back as the oral historians can remember. We exclude from this set seats held by regent chiefs, and seats held by those few chiefs who were viewed as illegitimate for other reasons (such as J.B. Bunduka of Mandu chiefdom who we discuss in the Appendix). Let $N^c = |S^c|$, the number of seats observed. Let s_f^c be the number of seats held by family f. The Herfindahl index is then given by

$$H_c = \sum_{f \in F^c} \left(\frac{s_f^c}{N^c} \right)^2 .$$

As shown in Panel A of Table 1, the average Herfindahl across chiefdoms is 0.54, and it is much higher in chiefdoms with fewer families. Our second measure of the concentration of power is simply the number of seats held by the family with the most seats, M_c. The mean of this variable is 3.5.

To describe the link between the number of families and the concentration of power we run OLS regressions of the following form,

$$C_c = \gamma_d + \gamma_{fam} \cdot F_c + \gamma_n \cdot N_c + \gamma_a \cdot \text{Amalgamation}_c + \varepsilon_c, \tag{1}$$

where the dependent variable C_c is our measure of power concentration in chieftaincy c, either H_c, the Herfindahl, or M_c, the number of seats held by the most dominant family. We abuse notation slightly and let F_c stand for either the number of ruling families in chiefdom c or its logarithm depending on the specification. The γ_d's denote a full set of 12 district fixed effects, which are included in all specifications; N_c is the number of chiefs in the history of the chieftaincy that our informants could remember in c; and Amalgamation_c is a dummy variable which is equal to 1 if chieftaincy was amalgamated, and equal to 0 otherwise. Finally ε_c is the error term.

Panel A of Figure 2 shows the negative relationship between the log number of ruling families and the Herfindahl index, while Panel B shows the relationship between the log number of ruling families and the maximum times any family has held the chieftaincy. Table 2 shows estimates of equation (1), documenting the same relationship. Column 1 presents the most parsimonious version of (1), without including any controls. In Panel A, where the dependent variable is the Herfindahl, the estimated coefficient $\gamma_{fam} = -0.05$ with a standard error of 0.01 and is significant at less than 1%. Panel B shows the same pattern for the number of seats held by the family with the most seats ($\gamma_{fam} = -0.32$ with a standard error of 0.06). In both panels the R^2 is relatively high (= 0.20 and = 0.16), suggesting that variation in the number of families accounts for about 16-20% of the variation in these measures of the concentration of power. The next three columns progressively include first the baseline controls, N_c and Amalgamation_c (column 2), district fixed effects (column 3), and then fixed effects for the researchers (column 4). The estimated coefficient on F_c is very robust and changes little, while the standard error changes very little, if at all. The last four columns of the table repeat the same regressions with the logarithm of the number of families, and show a somewhat more robust and significant relationship. Given this (and the higher R^2 and F statistics in the log specifications), in what follows we use the log number of ruling families in our core specifications. The log specification is also appealing in that it is consistent with a diminishing marginal impact of the number of families in reducing the scope for the concentration of power.

5 Number of Ruling Families and Pre-Colonial Development

As we discussed in the introduction, a major concern with our empirical strategy is the possibility that the number of ruling families might be determined by the extent of pre-colonial development or might be correlated with determinants of 20th-century economic development. Even though the historical sources and our survey and fieldwork discussed in the Appendix suggest that this is unlikely to be the case, we also investigate this possibility more systematically. We present regressions of the form

$$y_c = \delta_d + \delta_{fam} \cdot F_c + \varepsilon_c, \tag{2}$$

where y_c is the dependent variable of interest (e.g., tax assessments in the late 1890s, or distance to important geographic features such as the coast or navigable rivers, or distance to the line of rail from the centroid of the chiefdom). Specifications include no other covariates, except in some cases, the district fixed effect δ_d; ε_c is again the error term. Our objective is to examine whether the number of ruling families (or its logarithm) is meaningfully correlated with any of these measures of pre-colonial economic development or potential determinants of subsequent development. Table 3 shows that they are not.

First we examine the average annual house taxes assessed by the colonial government between 1898 and 1902 a good proxy for economic prosperity at the turn of the 20th century in the area. Since there are no population estimates for this period, we normalize these taxes by the area of the chiefdom. In column 1, we look at the relationship between this measure and the number of ruling families without district fixed effects, and column 2 includes district fixed effects. In both cases, the estimated effects are small and highly insignificant, providing no prima facie evidence that the number of ruling families is correlated with prior development outcomes. Moreover, the negative point estimates suggest, if anything, that there is a negative relationship between the number of families and prosperity in 1900. This implies that any correlation that exists would actually mitigate against our findings.[27]

Though we lack the relevant historical estimates of population, it is quite likely that the distribution of population within Sierra Leone has remained fairly constant since 1898. This being the case in columns 3 and 4, we normalize the tax assessments with the population from the 2004 census. Normalized in that way tax assessments are again not significantly correlated with the number of ruling families.

[27]The standard deviation in assessed taxes is very large at £1.17 per square kilometer. If we take the point estimate of the log form of specification 2, this implies that moving from the mean of the lowest quartile of the number of ruling families, with 1.8 families, to the mean of the highest quartile, with 7.7 would have decreased assessed tax by less than 1/5th of a standard deviation.

In specifications 5, 6 and 7, we examine distance to various drivers of economic prosperity in the early 20th century, and omit district fixed effects to make our estimates easily interpretable. Column 5 uses distance to the coast from the chiefdom centroid as the dependent variable. Here the estimated coefficients on the number of ruling families and its logarithm are significant at 5%: $\delta_{fam} = -5.0$ (s.e.=2.1) in the first row, and $\delta_{fam} = -20.1$ (s.e.=9.8) in the second row. Nevertheless, the implied quantitative effects are very small. The predicted difference in the distance to the coast between a chieftaincy in the bottom and the top quartile of the ruling families distribution is only 29 kilometers (18 miles). Column 6 uses distance to a navigable river as the dependent variable, column 7, distance to the railway, and finally, column 8 minimum distance to the 3 major towns of Sierra Leone, Freetown, Kenema and Bo (a proxy for urbanization). In each case, the relationship is not statistically significant and quantitatively very small.

We conclude from this evidence that the number of ruling families appears to be uncorrelated both with prior measures of economic development and with potential causes of future development.

6 Main Results

In this section , we present our main results. We first focus on a range of development outcomes, including education, various school enrollment measures, child health outcomes, non-agricultural employment, and various measures of asset ownership. We also look at the evolution of literacy over time. We then turn to various measures of social capital and social attitudes. Our typical regressions are at the individual level and can be written as follows:

$$y_{ic} = \alpha_d + \alpha_{fam} \cdot F_c + \alpha_n \cdot N_c + \alpha_a \cdot \text{Amalgamation}_c + \mathbf{X}_i' \cdot \alpha_x + \varepsilon_{ic}, \tag{3}$$

where i denotes the individual and c the chieftaincy, y_{ic} is the dependent variable of interest, which in many of our specifications is a dummy variable, making this relationship equivalent to a linear probability model. In addition, α_d denotes the set of 12 district fixed effects; F_c is throughout the log number of ruling families in chieftaincy; N_c denotes the number of chiefs in the history of the chieftaincy that our informants could remember in c; Amalgamation_c is a dummy for whether the chieftaincy was amalgamated, as in (1) and ε_{ic} is the error term. The vector $\mathbf{X}_i'$, which we include in some specifications, contains the individual level socio-demographic covariates: age, age, and dummies for gender and ethnicity. The main coefficient of interest is α_{fam}, the marginal impact of an increase in the log number of ruling families on our outcomes. Throughout, the standard errors we report are robust to heteroskedasticity, and

when the data are at the individual level, they are also clustered to allow for arbitrary correlation across individuals within a given chieftaincy.

6.1 Effects on Development Outcomes

Educational Outcomes Table 4 presents results using individual level data from the 2004 census on three educational outcomes, literacy, primary school attainment and secondary school attainment. In this table, each left hand side variable is binary. Individuals are matched to chiefdoms based on chiefdom of birth.[28] All columns include district fixed effects and the usual controls, as discussed above, for the number of seats observed and the amalgamation dummy, our baseline specification.

All columns show a significant, positive relationship between the number of families and educational attainment. Column 1, which does not include demographic controls, shows a significant positive relationship between the number of ruling families and the likelihood that a person over 12 is literate.[29] The coefficient estimate is $\alpha_{fam} = 0.051$ (s.e.=0.013). The second column, which additionally includes controls for an individuals age, age squared, gender and ethnicity, yields an estimate of $\alpha_{fam} = 0.046$ (s.e.=0.011). The estimates for primary and secondary school attainment are also very similar. This estimate is not only statistically significant at less than 1% but also economically large. It implies that moving from the bottom to the top quartile of the number of ruling families (from 1.8 to 7.7) would increase the likelihood of literacy, primary school attainment and secondary school attainment by about 7 percentage points. Reassuringly, the estimates from a separate dataset—the NPS sample of household heads has significantly lower overall educational attainment—are very similar. This can be seen in columns 5 and 8, where the estimates are statistically indistinguishable from those from the census.[30]

These educational impacts on those born in rural areas suggest that the strength of the chieftaincy institution is associated with lower education and human capital investment. Our interpretation, which we will try to bolster further below, is that this association is causal. Two channels might account for this causal impact. First, more powerful paramount chiefs may

[28] Similar, in fact stronger, results hold matching on chiefdom of current residence, consistent with a net migration of human capital out of chiefdoms with fewer families.

[29] In a previous version, we presented educational attainment results calculated using only data from an older cohort in order to focus on those who could have finished schooling before the start of the civil war in 1991. The results are similar for this narrower sample, but throughout this version, we focus on the sample of all individuals over the age of 12 for primary schooling, and of those over the age of 18 for secondary schooling.

[30] Similar, though statistically insignificant results obtain in the DHS sample of household members, matching individuals on chiefdom of current residence. This sample covers only 117 of 149 chiefdoms, and is less educated relative to the census.

be mismanaging funds. Though the central government is responsible for a large fraction of school expenditure, chiefdoms must decide whether to contribute their own funds. In addition, paramount chiefs must be consulted, as legal custodians of the land, before schools are constructed. Particularly before the civil war, they had considerable influence over the selection and salaries of teachers in the area they controlled. Second, paramount chiefs may have actively opposed education in their chiefdoms, for example to be able to better exert authority over the people. Our data do not enable us to finely distinguish these two channels.

Child Health Outcomes In Table 5, we study the impact of the number of ruling families on health using the DHS sample, which contains information on the weight for height, body mass index and anemia levels of children under five years of age—all outcomes that are both direct measures of poverty in sub-Saharan Africa and have been linked to socioeconomic outcomes later in life (see Strauss and Thomas, 2007, for a review). Column 1, which focuses on the weight for height Z-score and is again without demographics controls, leads to an estimate of $\alpha_{fam} = 0.212$ (s.e.=0.117), significant at 7%. In column 2, which additionally controls for the age, primary school attainment and ethnicity of the mother, the estimate is very similar. These estimates imply that moving from the bottom to the top quartile of the number of ruling families increases a child's height for weight Z-score by 0.41, or nearly half a standard deviation.[31]

The results for the body mass index Z-score in columns 3 and 4 are similar, though not statistically significant. In columns 5 and 6 the left-hand side variable is a dummy for whether the child tested positive for severe or moderate anemia in a hemoglobin test. We again find significant results with economically meaningful implications. For example, moving from the lowest to highest quartile of number of families decreases the likelihood of a child having severe or moderate anemia by 13 percentage points.

The most obvious explanation for these patterns is that, as with education, paramount chiefs have been, until very recently, the main conduit through which government health spending flowed to rural areas of Sierra Leone; for example, NGO programs to aid health and government clinics all must be developed with the approval of the chiefs, creating substantial opportunities for the capture of funds. A second possibility, however, is that paramount chiefs, who wield substantial power over economic life in Sierra Leone, may engage in various activities that hold back economic development in the area, and malnourishment and other adverse child health outcomes result from low incomes of their parents. We turn to this topic in the next subsection,

[31] Z-scores in this dataset were calculated by DHS researchers using the World Health Organization's 2006 Child Growth Standards.

in which we investigate the effect of the number of families on measures of economic prosperity.

Economic Outcomes Table 6 presents results for a variety of contemporary economic outcomes from the census and the NPS. Since it is not clear whether these outcomes should be impacted mainly by chiefdom of current residence or of birth, we report results with both. We start with the fraction of the population working outside agriculture.[32] Though Sierra Leone's chiefdoms are predominantly agrarian, non-agricultural employment for those currently residing in the chiefdom is a useful proxy for contemporary economic development. Columns 1 and 2 show a statistically significant (at 5%) association between number of ruling families and non-agricultural employment for both chiefdom of residence and of birth. This relationship is slightly stronger when matching on chiefdom of current residence, consistent with migration of skilled labor out of chiefdoms with fewer families.[33] The effects are again sizable. Using the coefficient in column 2, moving from the bottom to the top quartile of the number of ruling families increases non-agricultural employment in the chiefdom by 3 percentage points off a base of 7 percent.

The remaining left-hand side variables in Table 6 measure various dimensions of asset ownership. First, we look at mobile phone ownership observed for households in the NPS. In both specifications (columns 3 and 4), we estimate positive effects of the number of ruling families on mobile phone ownership, however the relationship is only significant (at 1%) when matching on chiefdom of birth. These magnitudes are again sizable. Using column 3, changing chiefdom of birth from the bottom to top quartile of the number of ruling families increases the likelihood of mobile phone ownership by 9%. The fact that this relationship is stronger when matching on chiefdom of birth is consistent with the fact that there are many more opportunities to accumulate wealth outside of the chiefdoms. In columns 5 and 6, we look at whether the household owns a cement or tile floor, which, relative to the alternative of a dirt floor, is a great benefit to households, especially in the rainy season when houses often flood; the results are again similar.[34]

In total, these results all suggest that unconstrained paramount chiefs retard the development

[32] In particular, our variable is a dummy for whether an individual over the age of 10 is employed in teaching, medical work, security, utilities, manufacturing, construction, trade, hospitality, transportation, or a financial industry, and not fishing, farming or forestry.

[33] Recall we find a similar pattern for education: effects are stronger matching on chiefdom of current residence, consistent with a net migration of human capital out of chiefdoms with fewer families.

[34] Similar, though insignificant results obtain in the DHS for similar variables and also for their wealth index coded from materials used for housing construction, and types of water access and sanitation facilities. This might be because the DHS sample only covers only 117 of 149 chiefdoms, and does not allow one to match individuals to chiefdoms based on chiefdom of birth.

of the modern economy within their chiefdoms, and harm the economic prosperity of individuals born in their chiefdoms. One channel through which chiefs might harm the local economy directly is through the levying harsh fines (often in ways rural people consider illegitimate and though what they refer to as "kangaroo courts") or perhaps punitive taxes on market traders, both of which are common occurrences as we have discussed above. Asset accumulation of those born in the chiefdom may be affected by the effects on human capital accumulation described above.

6.2 Literacy over Time

We next investigate the timing of literacy effects we documented in Table 4. This allows us to understand better when the differences in outcomes across chiefdoms began to emerge. In particular, we run separate regressions of literacy among different birth cohorts on the log number of families using data from the 1963 and 2004 censuses.[35] Table 7 reports these coefficients and Figure 3 plots them.[36] For example, first column in the top panel of Table 7 shows the impact on pre-1918 birth cohorts; the second column are on the 1919-1923 birth cohort, etc. Table 7 and Figure 3 show an impact on literacy steadily growing over time; estimates for the earliest birth cohorts are both statistically insignificant and quantitatively small. They grow over time and, with the exception of 1924-1928, become significant only after the 1940s birth cohorts, and becoming much larger after the 1950s birth cohorts. This pattern is plausible in the context of history of the chieftaincy institution. The paramount chiefs were the arm of government through which schools in Sierra Leone were first established in the early 20th century. One of the first government schools, the Bo Government Secondary School, was established in 1906 and funded explicitly from chiefs' contributions. Tax records at Fourah Bay College show agreements between district commissioners and chiefs across the country indicating the amount of tax revenue that would be donated to local schools. Though this authority over schools was established in 1896, there was quite a bit of flux in the early years and it took time for the ruling families and paramount chiefs to consolidate and exercise their new powers. Cartwright (1970) documents that paramount chiefs started dominating appointments to the Legislative Council during the 1950s and early 1960s, when it was in charge of educational spending. In this light,

[35] While individual level micro data, which we use above, is available for the 2004 census, only chiefdom cohort aggregates are available in the 1963 census. For consistency in this table, we present results for cohorts observed in the 2004 census using aggregates as well. Identical results obtain as expected however using the micro data for later cohorts.

[36] As we noted above, there is a slight difference in the data used here relative to those used in Table 4. While in Table 4 individuals observed in the 2004 census were matched to chiefdoms based on chiefdom of birth, individuals in this subsection are matched based on chiefdom of residence to ensure consistency with the 1963 census, which does not report education by chiefdom of birth.

it is plausible for divergence across chieftaincies to also have emerged during this period.

6.3 Social Attitudes

We now turn to our data from the 2007 National Public Services (NPS) survey about (social) attitudes. If the hypothesis of despotic chiefs, which is consistent with the evidence presented so far, is correct, one would except more powerful chiefs to be less legitimate or popular. We will see that the actual pattern is very different from this expectation.

The NPS attitudinal questions were carefully designed so as not to lead respondents towards one answer or another. Respondents were given two statements in the local lingua franca, Krio, and asked to say which was closest to their view. The could either agree with one, both, or none. In the first question they were given the statements:

1. As citizens, we should be more active in questioning the actions of leaders.

2. In our country these days, we should have more respect for authority.

Our first attitude variable is a dummy for whether they agree with statement 2. A second question had the statements:

1. Responsible young people can be good leaders.

2. Only older people are mature enough to be leaders.

This question is relevant because, as is discussed in Richards (1996), the elder/youth divide in Sierra Leone is often one of the most salient ways of distinguish those associated with the power structure of the chieftaincy (the elders) and those outside of the power structure (the youth). In fact, any person under the age of 50 is often called a "youth" with significant consequences for power and politics (and the civil war is often portrayed as a rebellion of youths against elders; see in particular Richards, 1996, Humphreys and Weinstein, 2008, Mokuwa, Voors, Bulte and Richards, 2011, Peters, 2011). We create a second dummy indicating whether the respondent agrees with item 2 in this question.

Table 8 reports the results.[37] The first two columns refer to "respect for authority" and the next two are about "only older people leading". Columns 1-2 show that with or without demographics controls chieftaincies with more ruling families report lower respect for authority.

[37] In these specifications, individuals are matched to chiefdoms of current residence. Our results are in fact even stronger when matching on chiefdom of birth, indicating that effects on attitudes are persistent, even with emigration.

These effects are all significant at 5%. Columns 3-4 show similar effects for the second variable, indicating greater willingness to accept young leaders in chieftaincies with more ruling families, though these effects are not significant at standard confidence levels.

These results are rather surprising at first blush. If more powerful paramount chiefs are responsible for poorer development outcomes, one would expect attitudes towards their power to be unfavorable. But this does not seem to be the pattern here.

6.4 Bridging and Bonding Social Capital and Collective Action

Finally we examine the impact of the number of ruling families on measures of social capital from the NPS. In particular, we have seven different measures, each with yes or no answer:

1. Have you attended any community meetings in the past month?
2. In the past year, have you talked with the Local Councillor or been to a meeting organized by the Local Council?
3. In the past year, have you talked with the Paramount Chief or been to a meeting organized by the Paramount Chief?
4. Do you belong to a school management committee, such as Parent Teachers Association?
5. Do you belong to a labor gang?
6. Do you belong to a secret society?
7. Have you participated in road brushing or town cleaning in the past month?

Three groups of activities can be distinguished here. The first group, consisting of attendance at a community meeting, attendance at a local council meeting and attendance at meetings with the chief, proxies for "bridging" social capital, to use the terminology of Putnam (2000), which consists of links between citizens and the elites. These activities represent investments by citizens in building relationships with the elites of the chiefdom.

The second group of activities, membership in a school committee, membership in a labor gang and membership in a secret society are all proxies for "bonding" activities used to build social capital between others of similar social status. School committees are organizations like the Parent Teacher Association, designed to help parents oversee their children's' schooling. Labor gangs are typically groups of young men who get together and collectively sell their labor on farms or on construction projects. Secret societies are heavily involved in the spiritual and

cultural life of the communities but also play important roles in dispute resolution and the allocation of land and other resources. It has been argued, for example by Little (1965, 1966), that as such they can act as a check on the political power of chiefs, though he presents little more than circumstantial evidence for this. Little's work points out that, though these variables proxy for "bonding" capital, they may also contain an element of "bridging" capital as well. Particularly in school committees and secret societies, citizens may form relationships with the elite and the paramount chief, as well as with one another.

The final category of activity, collective action, includes one variable, participation in "road brushing," or the cutting of bush along the road to make it navigable, which can be seen as the voluntary provision of a public good and indicative of a community's ability to engage in collective action. This same indicator is used to proxy for collective action by Glennerster, Miguel and Rothenberg (2011) in their investigation of the connection between ethnic fractionalization and collective action in Sierra Leone.

In Table 10 we report the results of regressions with left hand side variables given by a dummy equal to 1 for each one of these outcome variables. Panel A of Table 9 reports the correlations between these variables, showing that generally they capture different aspects of social capital, so are only imperfectly correlated, with a somewhat greater correlation activities within the same category.

Table 10 shows a negative impact of the number of ruling families on all of these measures of social capital. For example, for attendance of community meetings, the coefficient estimate is $\alpha_{fam} = -0.086$ (s.e.=0.025), while for the bonding activities such as membership in labor gangs or secret societies, the coefficients are $\alpha_{fam} = -0.073$ (s.e. = 0.023), and $\alpha_{fam} = -0.065$ (s.e.=0.033), respectively. There is a similar negative impact on participation in road brushing with a coefficient estimate of $\alpha_{fam} = -0.075$ (s.e.=0.035). All of these are economically and quantitatively significant effects. Note as well that all specifications include district fixed effects and individual level ethnicity dummies, which bolsters our confidence that these results are not due to unobserved cultural variation.[38]

Just like the results for the social attitudes, the pattern here is clear but at odds with expectations based on chiefs as despots view: the less constrained is the paramount chief, the greater the measured social capital. One would have expected social capital to be diminished in the presence of despotic leaders. This is true both for bonding and bridging type activities. Moreover, Panel B of Table 9 shows a generally negative correlation between social capital

[38]Estimates also do not change significantly when removing individual level ethnicity dummies, further supporting this claim.

and development outcomes at the level of chiefdom aggregates, again contrary to expectations. Though seemingly contradictory to our evidence on development outcomes, which supports the chiefs as despots view, we believe these results are quite plausible in light of the institutional structure of sub-Saharan Africa in general and Sierra Leone in particular. The idea is simple: a bridge can be crossed in either direction, meaning that bridging social capital can be used as a vehicle to assert social control. In this view, powerful chiefs may not just distort the allocation of resources to education or discourage the non-agricultural sector. In order to enhance their control over society, they may need also to monitor it and bring the people together so as to tell them what to do. While it is possible that some of these activities are in the collective good, many of them may simply be in the private interest of the chiefs and their families. This point is made explicitly in the anthropological literature on Sierra Leone, in particular by Murphy (1990) and also by Ferme (2001). Murphy emphasizes that in Sierra Leone community meetings—the outcome in column 1 of Table 10—are often used as a form of social control, and are used by elites to construct the appearance of governance based on community consensus, when in fact consensus has little to do with their decisions. Murphy (p. 28) writes

> "public forms [of discourse] are often recognized as an illusion masking alternative commitments arranged in secret.... a key attribute of the mature person or a successful group is the ability to strategically construct [...] public appearances".

Other outcomes can be interpreted in the same way. Road brushing, which on its face is a public good, was historically one of the services the chiefs compelled their citizens to do on behalf the colonial administration; most treaties in fact stipulated that chief's stipends depended on keeping the roads clean.[39] Labor gangs, while today an important forum in which young men commune with one another, have their institutional legacy in the provision of the communal labor demanded by paramount chiefs for their farms. Labor gangs today are a useful institution in which chiefs dispense patronage, giving a preferred group of youths, for example, a paying job on a government road or culvert construction project.

The fact that we see in chiefdoms with fewer families greater participation in both bridging and bonding activities may just reflect the fact that bridging and bonding activities are complements. The chiefs summon up bridging for their own purpose, but when they do so they have to accept that this simultaneously creates opportunities for bonding between citizens.[40]

[39]Glennerster, Miguel and Rothenberg (2011) suggest that powerful chiefs may order people to brush roads in rural Sierra Leone though they do not have a measure of this power with which to test this conjecture.

[40]In results not reported we found that the number of families had a near zero effect on measures of trust in others in the locality. We investigated trust with the question: "In your opinion do you believe [....] or do you

This interpretation may also have relevance for why powerful chiefs who apparently inhibit development command greater authority and respect. The apparent contradiction arises simply because in the process of building bridges between chiefs and their citizens, citizens themselves make specific investments in their relationships with the chiefs, giving citizens an interest in the perpetuation of the institution. Once people have invested in the social network of the chief and entered into a patron-client relationship, they have no interest in seeing his or her power diluted by, for example, the youth. In fact, they might prefer having it strengthened. Our interpretation is similar to that of Ntsebeza (2005) who examined the role of chiefs in rural South Africa and argued that

> "traditional authorities derive their authority from their control of the land allocation process, rather than their popularity amongst their subjects ... the need for land ... compelled rural residents willy-nilly to cooperate with the traditional authorities" (p. 22).

Ribot (2001) articulates a similar view which could best be summed up as: legitimacy follows power.

6.5 Robustness: Connections to Chieftaincy Elite

This paper has argued that a larger number of ruling families has caused more political competition for chieftaincy and better development outcomes. An alternative explanation for our results, however, could be that the number of ruling families is associated with a broader distribution of patronage within the chiefdom that raises observed means of development outcomes. Under this hypothesis, it would not be better governance driving the results, but rather a different structure of the patron-client network. The NPS allows us to test this hypothesis directly. It includes three measures of connections to the chieftaincy elite: whether the respondent has a paramount or section chief in the household, whether the respondent is a member of a ruling

have to be careful in dealing with them?" "Believe" is a close translation of the Krio word for trust. We code trust as a dummy for those who respond you can believe the person in question. In the preferred specification, with all demographic and elite controls, the effect on trust in other people in the locality is $\alpha_{fam} = 0.001$ (s.e.=0.027). This is consistent with paramount chiefs not having a great effect on "bonding" social capital between citizens.

We also find insignificant effects on trust in chiefdom officials. The coefficient for the same trust question asked about chiefdom officials is $\alpha_{fam} = 0.019$ (s.e.=0.032). We also examine answers to the question: "If the Paramount Chief was given 500 million Leones ($\$125,000$) to complete a project in this area, do you believe they would spend all the money doing a good job on the project or would they cut some of the money?" ("cut" meaning take for their own purposes). We code an indicator for respondents who report the chief would either "do a bad job and cut most of the money" or "they would just take all the money". The coefficient on this is again insignificant, at $\alpha_{fam} = 0.031$ (s.e.=0.026). The null effect here is difficult to interpret. A negative answer might be good or bad, depending on the individual's position to a chief's patronage network.

family, and whether the respondent has village headman in the household. Table 11 shows first that our core results are robust to the inclusion of these controls. As expected, the coefficients on connections to the chieftaincy elite are generally positive (and sometimes statistically significant), except in the case of the village headman in columns 1, 2 and 3. The negative sign on this coefficient should be interpreted with caution; and cannot be taken to imply that village headman are worse off than the average citizen within the chiefdom. This coefficient describes the effect of being a village headman who is not connected to the chieftaincy elite, either through relation to a more senior chief, or by membership in a ruling family. If we add the partial effects of these other connections, the total effect of being a well-connected headman is statistically indistinguishable from zero.[41]

We can also investigate directly potential flows of patronage within the chiefdom. Patronage to rural elites could be related to the number of families on the extensive and the intensive margin. On the extensive margin, it could be that in places with more families, there are simply more people who are affiliated with the ruling families, each of whom demands a transfer. We provide evidence against this hypothesis in Table 12, which indicates that there is not more broad-based membership in ruling families or an increased likelihood of having a paramount chief or headman in the household in chieftaincies with more ruling families.

On the intensive margin, it could be that a given elite in a chiefdom with more ruling families demands more patronage, since his or her vote is now more likely to be pivotal in an election. We investigate this hypothesis in Table 13, which shows estimates of the following regression,

$$y_{ic} = \beta_c + \beta_{elite} \cdot E_i + \beta_{fam} \cdot (E_i \times F_c) + \mathbf{X}_i' \cdot \beta_x + \varepsilon_{ic}, \tag{4}$$

where y_{ic} is a development outcome for individual i in chiefdom c, β_c is a chiefdom fixed effect and E_i is a dummy indicating a connection of individual i to the chieftaincy elite. The coefficient β_{fam} describes how outcome differences between chiefdom elite and non-elites vary with the (log) number of families. The vector $\mathbf{X}_i'$ includes the same individual level socio-demographic covariates as in previous specifications. The broadly negative estimates of β_{fam} show that within chiefdoms, inequality between elites and non-elites is, if anything, declining with the number of ruling families. This result is inconsistent with a more intensive distribution of patronage driving our results. In fact, the pattern in Table 12 strengthens our argument as it suggests that more competition for the chieftaincy produces more equality (less different outcomes) between elites and non-elites.

[41] 58% of households with headmen also include either a ruling family member or a paramount or section chief.

7 Concluding Remarks and Implications

In this paper we investigated the consequences of the power of chiefs on development in Sierra Leone. This is important for several reasons. In a continent where the majority of the population live in rural areas and where the national state lacks capacity and the power to "penetrate" society, the institutions of local governance may be pivotal in shaping development outcomes. Yet they have received little systematic empirical investigation. Further, though the institution of the chieftaincy was often a pure creation of colonial states, and though there have been attempts to demolish it, chiefs still exercise considerable power across Africa. Finally, there are also several apparently mutually incompatible views about the chieftaincy; on the one hand there is the argument made famous by Mamdani (1996) that the chiefs are unaccountable despots, yet at the same time there is a great deal of survey evidence that chiefs command the respect of rural people.

Based on a unique survey, complemented by field and archival research on the histories of the chieftaincies, paramount chiefs and ruling families of Sierra Leone as far back as sources could deliver, we developed a measure of institutional constraints on the power of paramount chiefs. Using this measure, we show that, consistent with the chiefs as despots view, in places where chiefs are less constrained and more powerful a variety of development outcomes are significantly worse. However, in contrast to expectations that would naturally follow from this view, these more powerful chiefs command greater respect, and their chieftaincies have greater levels of both bonding and bridging type of social capital, generally believed to be associated with better accountability and good governance.

On the face of it these results seem to suggest that both Mamdani and his critics can simultaneously be right—or wrong. Though this is true in some sense, we suggest that the right interpretation of our findings is in the spirit of Mamdani's argument, but goes further in recognizing the institutional context of sub-Saharan Africa and Sierra Leone. We argue that powerful chiefs lead to worse development outcomes because they distort incentives to engage in economically desirable activities through their control of taxation, regulation and the judicial system. Yet at the same time they are associated with higher levels of social capital, particularly bridging activities because they use this capital as a way to control and monitor society. This mechanism may also induce people to invest in patron-client relations with powerful chiefs, thus giving them a vested interest in the authority of chieftaincy. Thus in surveys people do say that they respect the authority of chiefs, but this is not a reflection of the fact that chiefs are effective at delivering services or public goods. Rather, it reflects the fact that rural people are locked

into relationships of dependence on the traditional authorities.

It is useful to note that though our evidence comes from a specific country, Sierra Leone, with necessarily unique institutions, there are many commonalities between Sierra Leone and other British colonies, suggesting that our conclusions might have some external validity. The indirect rule institutions established in Sierra Leone were common elsewhere in British Africa. Using a broad definition of the term, the British protectorates of Africa were all administered by some form of indirect rule. The places most similar to Sierra Leones are those in which the pre-colonial societies had "segmentary states" (Southhall, 1956), where pre-colonial states were generally small groupings of villages headed by a chief advised by a committee of headmen.[42] Segmentary states were very common, including the Gisu, the Kiga and the Alur in East Africa.[43] Another system analogous to ours is the Tanganyika Federation of chiefdoms around lake Tanganyika (Richards, 1960). These chiefdoms, similar in size to those in our area, were led by a single chief who had a "royal family"—the *banang'oma*—that provided services to his administration and also administered justice. In these chiefdoms there was not more than one royal family, but as colonialism progressed, officials did establish systems of election of chiefs, which forced aspirants to appeal to bases of political support outside the *banang'oma*.[44]

[42]The places most dissimilar to our context are those either with a strong centralized states that were well established before the colonial period, or those completely lacking political centralization, even chiefs. In the former category such as Asante in Ghana, Benin or Hausaland in Nigeria or Buganda in Uganda, the British chose to recognize the heads of state and work with them. The indirect rule institutions established here differ from those in Sierra Leone primarily in that unit of government was much larger—indeed during the 19th century the Asante empire spanned much of contemporary Ghana. The degree of electoral competition was also much lower in these places, in part because the British found it preferable not to alter the strong monarchical institutions that had already been established. These places can then be seen as having the characteristics of extreme observations in our dataset—chiefdoms with only one ruling family—albeit on much larger scale. What is similar to our setting is that the impact of indirect rule removed checks and balances and important elements of accountability that had generally existed prior to colonialism (for example the case studies in Crowder and Ikime, 1970, uniformly argue this point). In the latter category the absence of clear leaders in such places forced the British to appoint leaders with no primary legitimacy at all (Jones, 1970, Afigbo, 1972 on the Nigerian cases). The French chose similar action in south-eastern Cameroon, where they recognized arbitrarily chosen outsiders to be chiefs of the Maka, a group not accustomed to central authority (Geschiere, 1993). In these cases, unlike Sierra Leone, the colonial chiefs could not maintain their legitimacy after independence.

[43]The Gisu, for instance, had a complex system of lineages, which were similar to ruling families. Each linage had its own village, and then higher chiefs were selected from among these linages, similar to many chiefdoms in Sierra Leone, where families are often associated with different sections of the chiefdom. This system was maintained after colonialism, as elections were established and those who stood to be chief gained their legitimacy to do so from membership in the lineages. The Kiga provide another example; before colonialism they were organized in mobile clans. As the Ugandan protectorate developed, they were settled and various clans, each with their own lineages, and were forced to settle together. Linkages to the old clans became the basis to stand for office of the chief. Ferguson and Wilks (1970) describe similar societies in northern Ghana. Pre-colonial societies in many parts of Nyasaland (now Malawi) and Rhodesia (now Zambia and Zimbabwe) were also similar, although there the British conquest, which was more brutal, did more to destroy existing institutions. Systems of headman elections were established, and those candidates with connections to the pre-colonial elite still derived some authority from those connections, despite being afforded less of the pomp provided to the Paramount Chiefs in Sierra Leone (Hailey, 1950, Part II).

[44]To describe how new chiefs are selected, the chapter in Richards (1960) makes an analogy to the selection

Our findings have various implications for understanding the process of economic and institutional development in sub-Saharan Africa. Most significantly they suggest that simple applications of the principal-agent approach to political accountability and its relation to social capital may need to be modified. In terms of development policy many international aid agencies are now heavily involved in attempts to "strengthen" civil society and social capital in the hope that this will increase local accountability and public good provision. The World Bank pours millions of dollars into Community Driven Development schemes (for example in Sierra Leone, Casey, Glennester and Miguel, 2011, Liberia, Fearon, Humphreys and Weinstein, 2009 and the Democratic Republic of the Congo, Humphreys, de la Sierra, van der Windt, 2012). Yet our results give cause for concern: if civil society, at least in the way it exists in rural Africa today, is captured by chiefs, efforts to strengthen it might just strengthen the control of the chiefs over it. We believe that future research investigating these questions in greater detail would be particularly interesting. A major question is whether interventions that strengthen civil society organizations within a given institutional structure improve governance or further bolster existing institutional arrangements, even if they are dysfunctional.

of the Pope. Royal families would get together and select a candidate, who was at times challenged by other members of the community. In some cases alternative candidates would be proposed by other organized groups, for instance the *elika*, or young men's society. In this sense, there was both an established system of electoral competition, and various constituencies from which candidates drew their legitimacy to stand for election.

Appendix: Origins of Ruling Families

We have argued that the origins of the number of ruling families is historically idiosyncratic. In this appendix, we detail the histories of six chiefdoms, whose families' origins exemplify the origin stories common in other chiefdoms. In a companion article, Reed and Robinson (2012), available online, we detail the histories of all 149 chiefdoms and their families.

Koya chiefdom, of eastern Kenema district is near the median of the distribution with three ruling families. Local historians trace its origin to a warrior named Menima Kpengba. Kpengba was an ethnic Gola, who is believed to have migrated from present day Liberia. It is difficult to date Kpengba's arrival, as there is little historical record of the Golas in Sierra Leone, except from some mention of them by Portuguese travelers in the early 16th century. Kup (1962, p. 127) writes, citing these sources, that "it is likely [...] the Golas have lived for a very long time in small numbers amongst the creeks which intersect the thick forest of the south." The chiefdom today recognizes three ruling families, all whom have contested the two most recent elections: Komai, Sellu and Kanneh.

The Komai and Sellu families both trace their lineages to the Gola people that migrated with Kpengba, and are affiliated with different towns in the chiefdom, Gbogbuabu and Bongor, respectively. It is common across chiefdoms for families to have different "headquarters". In Koya, this is a legacy of the decentralized nature of Gola society. When the British arrived seeking leaders with which to sign treaties, groups organized themselves to present the visitors with a leader. The political structure of the chiefdom was then determined by the relationships formed between groups at the time to support a signatory to the treaty, the headquarters within the chiefdom representing the homes of the different groups.

The first paramount chief in Koya to be recognized by the colonial government was Joseh, of the Komai family, who signed a treaty at Gbogbuabu with Travelling Commissioner Thomas J. Alldridge on April 20th, 1890.[45] The stipulations of the Alldridge treaty were identical to many of the others signed throughout the 19th century, and it is common for families to trace their lineage to the member who first signed a treaty with the British. In this sense, these treaties mark the beginning of the chieftaincy institution, in which the colonial government recognized the signatories as the primary liaisons between the government and the people. Under the treaty, Joseh promised the rights of free passage, property and construction to British subjects, as well as reserved adjudication of any disputes between his people and British subjects for the Governor in Freetown. "So long as the above conditions are carried out, and the roads are kept clean,"

[45] Fourah Bay College Archives, Treaty, April 20, 1890: Borgbahboo.

the treaty reads, "Chief Joseh shall receive an annual present of ten pounds." By mandating the provision of services in exchange for the favor of the government, the treaty established the basis of the clientelistic relationship of indirect rule: the chief would receive money and legitimacy from the government, independent of any services provided for his people.

Cordial relations between the government and Joseh did not continue however. Joseh joined the rebellion in 1898 against the declaration of the Protectorate, and in retaliation Captain Carr, who led opposition to the rebellion in the area, burned Gbogbuabu to the ground. Joseh was deposed and imprisoned for a year. Joseh returned to office in 1899, at the age of "35 to 40", and was ultimately succeeded by his younger brother Kormeh, by unanimous vote of 32 tribal authorities in 1907.[46] That Joseh, as with most chiefs imprisoned after the rebellion, was able to return to power and pass the chieftaincy to his brother shows the resilience of the families to shocks from without. A central tenant of Lugard's manual for indirect rule was the policy of non-interference with local custom. Though the British institutionalization may have heavily influenced the ways chiefs interacted with their citizens once the system was created, external interventions into the politics of the chieftaincy were rare and when they occurred had no persistent effect.

After Kormeh's death in 1920, oral historians report that a Sellu Ngombu, of the Sellu family, held the chieftaincy. A 1920 letter to Freetown from the District Commissioner states that after Kormeh's death a regent chief was elected immediately,[47] "so that delay in finding a successor, which has resulted in so much dissension in the neighboring Chiefdom (Tunkia), might not cause trouble here." It is common practice for regent or "caretaker" chiefs, sometimes from ruling families, to hold office between chieftaincy elections. Sellu Ngombu was this same caretaker. Though holding this caretaker role in this early period gave his family enough legitimacy to stand in future elections, they is still viewed as somewhat less legitimate than the Komai family and have been unable to win any subsequent elections.

This example illustrates a common feature across chiefdoms, which is that a family may have obtained the right to stand for paramount chief through service as regent chief early in the history of the chiefdom. The existence of such families is random in the sense that whether or not someone had the opportunity to become regent early on depended on whether an original paramount chief had a clear successor; in this case Kormeh had no son. Though the Sellu family has not won a seat since, they do still command votes in the Tribal Authority, and so represent a group that must be lobbied in chieftaincy elections.

[46] Provincial Secretary's Office, Kenema: Kenema District Decree Book.
[47] Provincial Secretary's Office, Kenema: Kenema District Decree Book.

The third ruling family, Kanneh, has dominated the chiefdom since Kormeh. Kormeh's death and Sellu Ngombu's weakness left a vacuum that was filled by a local family not related the treaty's original signatories. It is likely that Kanneh was related to a section chief who had ruled an area of the chiefdom under Kormeh and Sellu. It is common across chiefdoms for the absence of a clear heir to the chiefdom's forbearer early on to lead to the legitimation of new families. Take, for instance, Bagbo chiefdom, in Bo District. Bagbo traces its origins to Boima Jah, a warrior and hunter who settled the area, and was chief from 1847 until his death in 1884.[48] The chiefdom today recognizes four families: Jah, Idriss, Coker and Colia. The Colia family, which follows the lineage of another family living in the chiefdom at the time of Boima Jah, has contested but never won a chieftaincy election. The Idriss and Coker families emerged because Boima Jah did not have any sons, and after his death there was no immediate successor. Idriss, the chiefdom speaker, succeed Jah as regent chief. Similar to Sellu Ngombu, though Idriss had no blood relationship to Jah, he was so respected for his service that his family has come to be considered a ruling family. After Idriss's death in 1897, Keneh Coker was elected chief. His mother was a daughter of Boima Jah who had married into the Coker family. Keneh Coker had a long rule until 1942, and, at least in 1912, received a stipend from the government of ten pounds a year.[49]

The creation of a family through marriage is common across chiefdoms. This occurrence was particularly common when the first chief had no sons old enough to become chief. In these cases, new families are created when his daughters were married into other families, and their husbands stood for election. It took some time, however, for these new families to be viewed as legitimate. As with the Sellus, files from the District Commissioner in 1906 list Coker as "regent", and not paramount chief, indicating that even 9 years after signing Idriss's death, he was viewed still as a place holder for the family of Boima Jah.[50] This view did not last forever, though, as his family held the chieftaincy twice after Keneh Coker's death.

There are of course situations in which the forbearer of a chiefdom had an abundance of heirs, who continue to dominate the chiefdom until present day. Simbaru chiefdom, which like Koya is also in Kenema district, is just one of these chiefdoms: though in the same region, with a similar ethnic makeup, it only recognizes one ruling family. Oral historians trace its origin back to a warrior and hunter named Gombulo Tama, who settled the area with his brother Jaiwu.

[48] Local historians memorialize his military prowess in their interpretation of the word Bagbo, which they take to mean in Mende: "don't be stupid while sleeping"; one must be vigilant, even while resting, of the potential for enemy attack.

[49] Fourah Bay College Archives, "Information Regarding Protectorate Chiefs 1912".

[50] Fourah Bay College Archives, Railway District Decree Book 1900-1904.

Today it only has one family, which traces its origins to Tama. Tama made his settlement at Javoima (formally called Coba town) while Jaiwa settled at Goma. Abraham (2003, p. 113) traces the origin of Simbaru to the expansion of Keni Karteh, a warrior of the early 19th century who, with his warriors, expanded to occupy areas surrounding his town of Dodo. Tama and his brother were likely warriors under the command of Karteh. The first chief from this house to be recognized by the British, Sangwewa, was a grandson of Gombulo Tama. His family has dominated ever since, as there has always been a strong and ready male heir to take the chieftaincy.

The organizational structure of groups of invaders during the pre-colonial period also have affected the number of families. Take, for instance, Mambolo chiefdom in northwestern Kambia district, which has 5 ruling families. Oral history traces the chiefdom to a woman named Borkia who migrated from Guinea. She is likely to have come as part of the Mane invasions from Guinea in the mid 16th century. Some time thereafter, however, her settlement was conquered by a group of Bullom warriors. The chiefdom's five families each trace their lineage to these Bullom invaders.

The oral history traces the paramount chieftaincy back to a Bai Sherbora Lion in the 19th century. The Lion house, named for the animal to commemorate the bravery of its forbearer in battle, was the second house to hold the chieftaincy after a Bullom from an unknown family signed a treaty with the British in 1876.[51] Subsequent paramount chieftaincies have been held by the Woni Koberr, Jum Harry, Moribaya and Somanoh houses, all of which trace their origins to separate members of the original Bullom war party. The nature of this Bullom invasion, a loose band of warriors from neighboring areas, resulted in many independent families being viewed as legitimate. While in Mambolo the band of warriors led to five families, in other chiefdoms, invading parties had only one or two leaders, which led to a smaller number of ruling families.

It is just as common for families to have successfully fought off invading tribes. Kassunko, in northern Koinadugu district, has five recognized ruling families. The chiefdom traces its roots to Limba warriors who conquered the Lokos in the area during the 15th century (Kup, 1962, p. 124). The Limba, however, faced another invasion by the Sofa, from present day Guinea, in the 1880s. Lipschutz (1973) records an interview with Paramount Chief Baio Serry II of Kassunko in 1972 in which Serry recalls how his grandfather made peace with the Sofa and maintained the independence of the chiefdom. The story is that his grandfather Sara Baio's fingers were gnarled. The invaders said that whenever they met a person with such a deformity, they should not touch him, and so they did not fight. A government report from 1912 recalls that Sara Baio,

[51] Fourah Bay College Archives, Treaties, October 6, 1876, Scarcies.

then an old man, "has the confidence of his people".[52]

While the set of families with legitimacy to rule the chiefdoms was certainly variable in the pre-colonial period, families have stayed incredibly resilient to change since the beginning of the 20th century. This can be seen in Mandu, of Kailahun district, where President Siaka Stevens installed a party loyalist of the then ruling All People's Congress Party (APC) as chief in 1983, in order to gain political control over the area. There is only one family in this chiefdom, the Coombers, and the installed chief was not a member. The Coombers trace their lineage to Kaba Sei, an important chief at the turn of the 20th century and son of the original settler, Mandu Falley. The family appears to have consolidated its legitimacy in the area at the end of the 19th century, after Kaba Sei fought against an invasion by Ndawa, a great warrior of the time (Abraham, 2003, p. 85). In an effort to consolidate power in the area, Stevens appointed a chief, J.B. Bunduka, who reigned until 1991 at the beginning of the war, when he was the first paramount chief to be murdered by the Revolutionary United Front, the first rebel group of Sierra Leone's civil war, which had sworn to free the country from APC oppression (Smith et. al., 2004). Undoubtedly the violence of the RUF against Bunduka was a rejection of outside interference in the chieftaincy. Today, relatives of Bunduka are not recognized as a ruling family.[53]

From this historical material, we conclude that the number of ruling families across chiefdoms can be treated as exogenous to development and social outcomes today.

[52]Fourah Bay College Archives, "Information Regarding Protectorate Chiefs 1912"

[53]A total of seven chiefdoms had new families installed by politicians after independence: Biriwa, Neya, Kaffu Bullom, Koya (Port Loko), Kalansogoia, Neini, Mandu. Since the war, none of these families have been viewed as legitimate or permitted to stand in elections. We have herefore dropped these families from our count of the number of families though including them does not change any results presented below.

References

Abraham Arthur (1979) *Mende Government and Politics Under Colonial Rule: Historical Study of Sierra Leone, 1890-1937*, New York: Oxford University Press.

Abraham Arthur (2003) *An Introduction to Pre-Colonial History of the Mende of Sierra Leone*, Edwin Mellen Press.

Acemoglu, Daron, María Angélica Bautista, Pablo Querubín and James A. Robinson (2008) "Economic and Political Inequality in Development: The Case of Cundinamarca, Colombia," in Elhanan Helpman ed. *Institutions and Economic Performance*, Cambridge: Harvard University Press.

Afigbo, Adiele E. (1972) *The Warrant Chiefs: Indirect Rule in Southeastern Nigeria 1891-1929*, London: Longman.

Alie, Joe A. D. (1990) *A New History of Sierra Leone*, New York: St. Martin's Press.

Anderson, Siwan, Patrick Francois and Ashok Kotwal (2011) "One Kind of Democracy," http://faculty.arts.ubc.ca/fpatrick/documents/marathacirculate.pdf

Ansolabehere, Steven and James M. Snyder (2006) "Party Control of State Government and the Distribution of Public Expenditures," *Scandinavian Journal of Economics*, 108(4), 547-569.

Arkley, Alfred (1965), "Slavery in Sierra Leone" Unpublished Masters Thesis, Columbia University (Available from author in PDF form, send request to arkley@comcast.net).

Ashton, E.H. (1947) "Democracy and Indirect Rule," *Africa*, 17(4), 235-251.

Baldwin, Kate (2011) "When Politicians Cede Control of Resources: Land, Chiefs and Coalition-Building in Africa," Department of Political Science, Columbia University.

Bates, Robert H. (1981) *Markets and States in Tropical Africa*, Berkeley: University of California Press.

Bayart, Jean-François (1993) *The State in Africa: The Politics of the Belly*, London: Longman.

Becker, Gary S. (1983) "A Theory of Competition among Pressure Groups for Political Influence," *Quarterly Journal of Economics*, 98, 371–400.

Berry, Sara (1993) *No Condition is Permanent: The Social Dynamics of Agrarian Change in Sub-Saharan Africa*, Madison: University of Wisconsin Press.

Besley, Timothy (2007) *Principaled Agents: The Political Economy of Good Government*, Oxford: Oxford University Press.

Boone, Catherine (1995) "Rural Interests and the Making of Modern African States,"

Journal of African Economic History, 23, 1-36.

Boone, Catherine (2003) *Political Topographies of the African State: Rural Authority and Institutional Choice*, Cambridge: Cambridge University Press.

Bowles, Samuel S. and Herbert Gintis (2002) "Social Capital and Community Governance," *Economic Journal*, 112, 419-436.

Carter, Brett L. (2011) "Unite and Rule: A Theory of Compulsory Elite Social Networks in Autocracies," Unpublished, Department of Government, Harvard University.

Cartwright, John R. (1970) *Politics in Sierra Leone 1947-67*, Toronto: University of Toronto Press.

Casey, Katherine (2007) "Decentralization Watch: The first three years of decentralization in Sierra Leone," Freetown: A Report for the Institutional Reform and Capacity Building Project (IRCBP). [Published under the name Katherine Whiteside]

Casey, Katherine, Rachel Glennerster and Edward Miguel (2011) "Reshaping Institutions: Evidence on External Aid and Local Collective Action,"`http://elsa.berkeley.edu/~emiguel/pdfs/miguel_gbf.pdf`

Chalmers, Sir David (1899) "Report by Her Majesty's Commissioner and Correspondence on the subject of the Insurrection in the Sierra Leone Protectorate ", London: H.M. Printing Office.

Cohen, Abner (1981) *The Politics of Elite Culture*, Berkeley: University of California Press.

Coletta, Nat J. and Michelle L. Cullen (2002) "Social Capital and Social Cohesion: case studies from Cambodia and Rwanda," in Christiaan Grootaert and Thierry van Bastelear eds. *The Role of Social Capital in Development: An Empirical Assessment*, Cambridge: Cambridge University Press.

Collier, David and Ruth Berins Collier (1991) *Shaping the Political Arena*, Princeton: Princeton University Press.

Crowder, Michael and Obaro Ikime (1970) "Introduction" in Michael Crowder and Obaro Ikime eds. *West African Chiefs: Their Changing Status under Colonial Rule and Independence*, New York: Africana Publishing Corporation.

Durlauf, Steven N. and Marcel Fafchamps (2005) "Social Capital," in Philippe Aghion and Steven N. Durlauf eds. *The Handbook of Economic Growth*, Volume 1, Chapter 26, Amsterdam: North-Holland.

Fanthorpe, Richard (1998) "Locating the Politics of a Sierra Leonean Chiefdom," *Africa*, 68(4), 558-584.

Fanthorpe, Richard (2001) "Neither Citizen Nor Subject? 'Lumpen' Agency and the Legacy of Native Administration in Sierra Leone," *African Affairs*, 100, 363-386.

Fanthorpe, Richard (2005) "On the Limits of the Liberal Peace: Chiefs and Democratic Decentralization in Post-War Sierra Leone," *African Affairs*, 105, 1-23.

Fearon, James D., Macartan Humphreys and Jeremy M. Weinstein (2009) "Can Development Aid Contribute to Social Cohesion after Civil War? Evidence from a Field Experiment in Post-Conflict Liberia," *American Economic Review*, 99:2, 287-291.

Ferguson, Phyllis and Ivor Wilks (1970) "Chiefs, Constitutions and the British in Northern Ghana," in Michael Crowder and Obaro Ikime eds. *West African Chiefs: Their Changing Status under Colonial Rule and Independence*, New York: Africana Publishing Corporation.

Ferme, Mariane (2001) *The Underneath of Things: Violence, History and the Everyday in Sierra Leone* Berkeley: University of California Press.

Finnegan, Ruth H. (1965) *A Survey of the Limba people of northern Sierra Leone*, London:

Finnegan, Ruth H. and David J. Murray (1970) "Limba Chiefs," in Michael Crowder and Obaro Ikime eds. *West African Chiefs*, London: Meier & Holmes Ltd.

Fyfe, Christopher (1962) *A History of Sierra Leone*, London: Oxford University Press.

Fyle, G. Magbaily (1979a) *Almamy Suluku of Sierra Leone c. 1820-1906: The Dynamics of Political Leadership in Pre-Colonial Sierra Leone*, London: Evans Brothers Limited.

Fyle, G. Magbaily (1979b) *The Solima Yalunka Kingdom: Pre-Colonial Politics, Economics & Society*, Freetown: Nyakon Publishers Ltd.

Geschiere, Peter "Chiefs and Colonial Rule in Cameroon: Inventing Chieftaincy, French and British Style, "*Africa: Journal of the International African Institution* 63(2) 151-175.

Glennerster, Rachel, Edward Miguel and Alexander Rothenberg (2011) "Collective Action in Diverse Sierra Leone Communities,"`http://elsa.berkeley.edu/\char126\relaxemiguel/pdfs/miguel_sl-ethnic.pdf`

Goddard, T.N. (1925) *The Handbook of Sierra Leone*, London: Grant Richards.

Goody, Jack ed. (1979) *Succession to High Office*, New York: Cambridge University Press.

Grootaert, Christiaan and Thierry van Bastelear eds. (2002) *The Role of Social Capital in Development: An Empirical Assessment*, Cambridge: Cambridge University Press.

Guyer, Jane (1978) "The Food Economy and French Colonial Rule in Central Cameroon," *Journal of African History*, 19(4), 577-597.

Hailey, Lord (1950) *Native administration in the British African territories*, London : H.M. Stationery Office.

Herbst, Jeffrey I. (2000) *States and Power in Africa*, Princeton: Princeton University Press.

Hill, Polly (1963) *The Migrant Cocoa Farmers of Southern Ghana: A Study in Rural Capitalism*, New York: Cambridge University Press.

Howard, Allen M. (1972) "Big Men, Traders, and Chiefs: Power, Commerce, and Spatial change in the Sierra Leone - Guinea Plain, 1865-1895," Unpublished Ph.D. Dissertation, Department of History, University of Wisconsin, Madison.

Howard, Allen M. (1976) "The Relevance of Spatial Analysis for African Economic History: The Sierra Leone-Guinea System," *Journal of African History*, 17:3, 365-388.

Humphreys, Macartan, Raul Sanchez de la Sierra, Peter van der Windt (2012) "Social and Economic Impacts of Tuungane: Final Report on the Effects of a Community Driven Reconstruction Program in Eastern Democratic Republic of Congo," Unpublished, Department of Political Science, Columbia University.

Humphreys, Macartan and Jeremy M. Weinstein (2008) "Who Fights? The Determinants of Participation in Civil War," *American Journal of Political Science*, 52, 436-455.

Hyden, Goran (1980) *Ujamaa In Tanzania: Underdevelopment and an Uncaptured Peasantry*, London: Heinemann Educational Publishers.

Iyer, Lakshmi (2010) "Direct Versus Indirect Colonial Rule in India: Long-Term Consequences " *The Review of Economics and Statistics*, 92:4, 693-713.

Jackson, Robert H. and Carl G. Rosberg (1982) *Personal rule in Black Africa: prince, autocrat, prophet, tyrant*, Berkeley: University of California Press.

Jerven, Morten (2010) "Social Capital as a Determinant of Economic Growth in Africa", *Africa Review*, 2, pp. 139-162.

Jones, G. I. (1970) "Chieftaincy in the Former Eastern Regions of Nigeria," in Michael Crowder and Obaro Ikime eds. *West African Chiefs: Their Changing Status under Colonial Rule and Independence*, New York: Africana Publishing Corporation.

Killick, Tony (1978) *Development Economics in Action*, London: Heinemann.

Kup, Peter (1962) *A history of Sierra Leone, 1400-1787*, Cambridge: Cambridge University Press.

Lange, Matthew (2009) *Lineages of Despotism and Development: British Colonialism and State Power*, Chicago: University of Chicago Press.

Little, Kenneth L. (1951) *The Mende of Sierra Leone: A West African People in Tran-*

sition, London: Routledge & Keegan Paul.

Little, Kenneth L. (1965) "The Political Function of the Poro. Part I," *Africa*, 35:4, 349-365.

Little, Kenneth L. (1966) "The Political Function of the Poro. Part II," *Africa*, 36:1, 62-72.

Lipschutz, Mark (1973) "Northeast Sierra Leone after 1884: Responses to the Samorian Invasions and British Colonialism," Unpublished Ph.D. Dissertation, Department of History, University of California at Los Angeles.

Logan, Carolyn (2009) "Selected chiefs, elected councillors and hybrid democrats: popular perspectives on the coexistence of democracy and traditional authority," *Journal of Modern African Studies*, 47, 101–128.

Logan, Carolyn (2011) "The Roots of Resilience: Exploring Popular Support for African Traditional Authorities," AFRObarometer Working Paper No. 128

Low, D. Anthony and R. Cranford Pratt (1955) *Buganda and British Overrule, 1900-1955: Two studies*, London: Oxford University Press.

Lugard, Frederick (1922) *The Dual Mandate in British Tropical Africa*, London: William Blackwood and Sons.

Mamdani, Mahmood (1996) *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism*, Princeton: Princeton University Press.

Migdal, Joel S. (1988) *Strong Societies and Weak States*, New York: Cambridge University Press.

Mokuwa, Esther, Maarten Voors, Erwin Bulte and Paul Richards (2011) "Peasant Grievance and Insurgency in Sierra Leone: Judicial Serfdom as a Driver of Conflict," *African Affairs*, 110, 339-366.

Murphy, William P. (1990) "Creating the Appearance of Consensus in Political Discourse" *American Anthropologist*, 92, 25-41.

Nannicini, Tommaso, Andrea Stella, Guido Tabellini and Ugo Troiano (2012) "Social Capital and Political Accountability," forthcoming in *American Economic Journal: Economic Policy*.

Ndulu, Benno, Stephen A. O'Connell, Robert H. Bates, Paul Collier, Chukwuma C. Soludo eds. (2007) *The Political Economy of Economic Growth in Africa, 1960-2000*, 2 Volumes, New York: Cambridge University Press.

Ntsebez, Lungisile (2005) *Democracy Compromised: Chiefs and the Politics of the Land in South Africa*, Leiden: Brill Academic Publishers.

Osafo-Kwaako, Philip (2011) "Long Run Efects of Compulsory Villagization in Tanzania," Unpublished manuscript, Kennedy School of Government, Harvard University.

Persson, Torsten, Gérard Roland and Guido Tabellini (1997) "Separation of Powers and Political Accountability," *Quarterly Journal of Economics*, 112, 1163-1202.

Peters, Krijn (2011) *War and the Crisis of Youth in Sierra Leone*, Cambridge: Cambridge University Press.

Portes, Alejandro (1998) "Social Capital: Its Origins and Application in Modern Sociology," *Annual Review of Sociology*, 1-14.

Portes, Alejandro, and Patricia Landolt (1996) "The downside of social capital," *The American Prospect*, 26, 18-23.

Putnam, Robert H., Robert Leonardi and Raffaella Y. Panetti (1993) *Making Democracy Work*, Princeton: Princeton University Press.

Putnam, Robert H. (2000) *Bowling alone: the collapse and revival of American community*, New York: Simon and Schuster.

Rathbone, Richard (2000) *Nkrumah and the Chiefs: Politics of Chieftaincy in Ghana, 1951-1960*, Ohio University Press: Columbus.

Reed, Tristan and James Robinson (2012) "The Chiefdoms of Sierra Leone,"Harvard University. `http://people.fas.harvard.edu/~treed/history.pdf`

Ribot, Jesse C. (2001) "Local Actors, Powers and Accountability in African Decentralization: A Review of Issues," `http://www.odi.org.uk/events/docs/3187.pdf`

Richards, Audrey I. ed. (1960) *East African chiefs: a study of political development in some Uganda and Tanganyika tribes*, London: Faber and Faber.

Richards, Paul (1996) *Fighting for the Rainforest: War, Youth and Resources in Sierra Leone*, Oxford: James Currey.

Sandbrook, Richard (1985) *The Politics of Africa's Economic Stagnation*, Cambridge: Cambridge University Press.

Sawyer, Edward (2008) "Remove or Reform? a Case for (Restructuring) Chiefdom Governance in Post-Conflict Sierra Leone," *African Affairs*, 107, 387-403.

Southhall, Adrian W. (1956) *Alur society; a study in processes and types of domination*, Cambridge: W. Heffer.

Smith, L. Alison, Catherine Gambette and Thomas Longley, for No Peace Without Justice (2004) "Conflict Mapping in Sierra Leone: Violations of International Humanitarian Law from 1991 to 2002"

Stigler, George J. (1972) "Economic Competition and Political Competition", *Public*

Choice, 13, 91-106.

Strauss, John and Duncan Thomas (2008) "Health Over the Life Course"in *Handbook of Development Economics*, 4: 54, 3375-3475, Amsterdam: Elsevier.

Tangri, Roger (1978) "Local Government Institutions in Sierra Leone," *Journal of Administration Overseas*, 17, 17-27 and 118-128.

Widner, Jennifer and Alexander Mundt (1998) "Researching Social Capital in Africa," *Africa*, 68(1), 1-24.

Wylie, Kenneth (1977) *Political Kingdoms of the Temne*, London: Holmes & Meier Publishers.

Young, Crawford (1994) *The African colonial state in comparative perspective*, New Haven: Yale University Press.

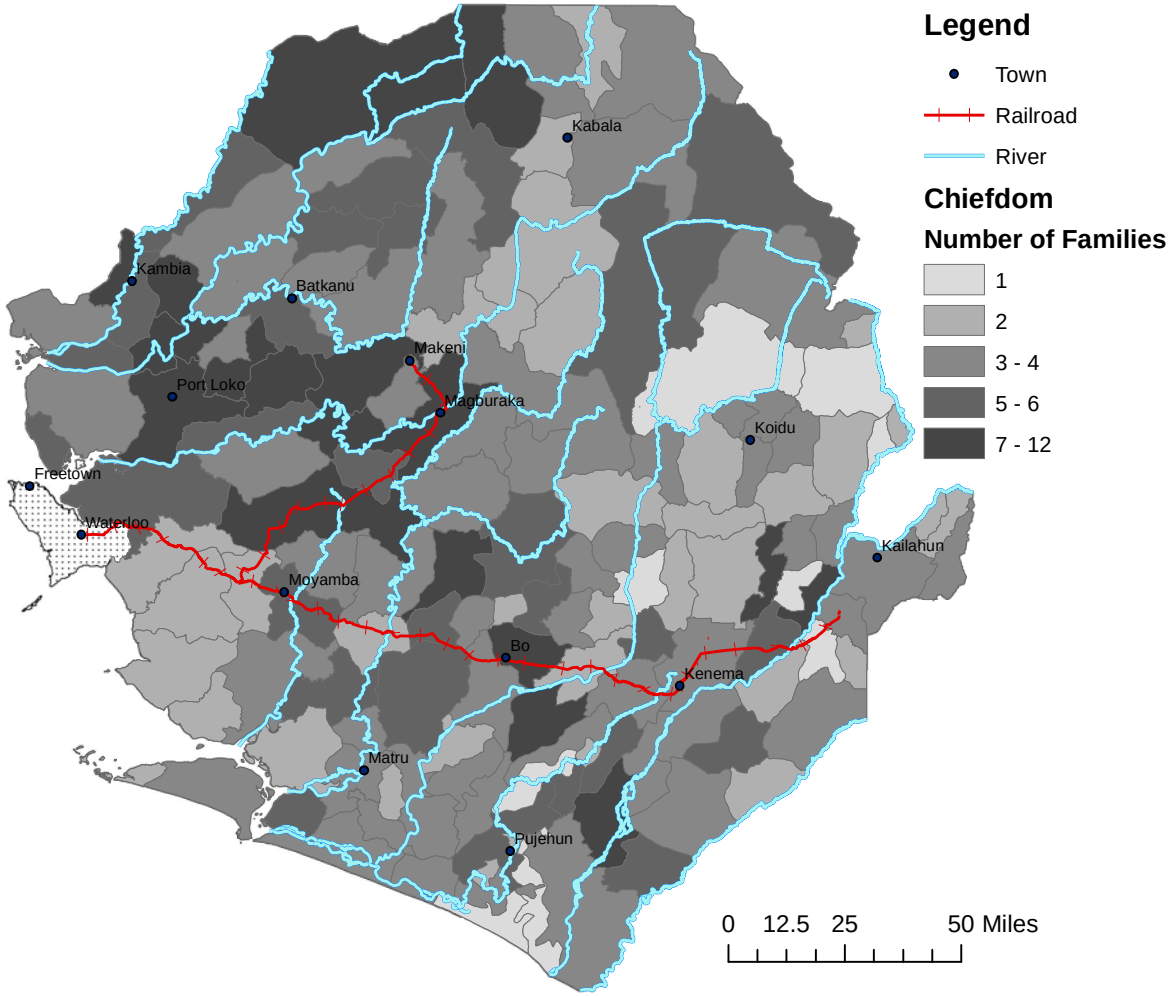
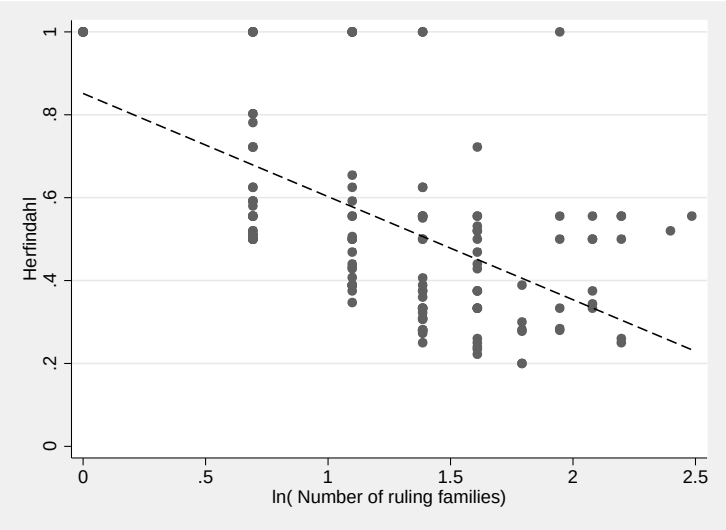
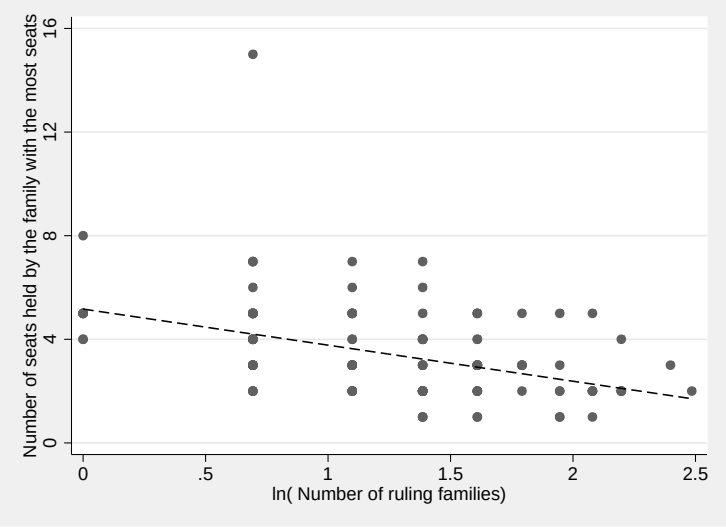


Figure 1: Map of Sierra Leone's chiefdoms with the number of families plotted by quintiles.

Figure 2: Number of families and concentration of power





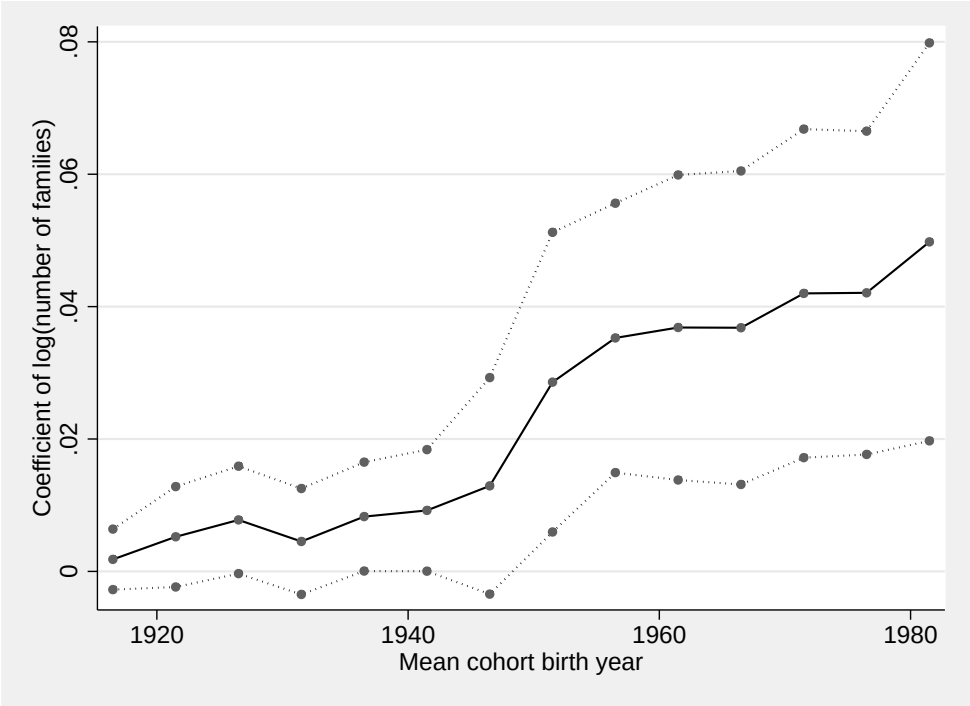


Figure 3: Effect of log number of families on literacy by five year birth cohorts. The dotted lines give a 95% confidence interval. Specification is OLS with controls for amalgamation, number of seats observed and district fixed effects. Cohorts born before 1953 are observed in the 1963 census, in which one chiefdom, Dibia, has missing data. Dropping this chiefdom from the 2004 data produces a similar graph. The first cohort, plotted at y=1914, actually includes anyone born before 1918.

Table 1: Descriptive Statistics

			By quartiles of number of ruling families			
		Number of observations	(1)	(2)	(3)	(4)
A. Chieftaincy Variables and Controls						
Number of seats observed	5.8 (2.6)	149	6.3	5.7	5.8	5.2
Amalgamation	0.3	149	0.02	0.30	0.45	0.72
Herfindahl	0.54 (0.24)	149	0.72	0.52	0.40	0.42
Maximum seats for family with most seats	3.5 (1.7)	149	4.6	3.1	3.0	2.6
Number of families	4.0 (2.1)	149	1.8	3.5	5.0	7.7
B. Development Outcomes						
Census						
Literacy rate (chiefdom of birth)	0.32	2,727,622	0.31	0.31	0.32	0.33
Primary school attainment (chiefdom of birth)	0.35	2,717,412	0.37	0.35	0.35	0.36
Secondary school attainment (chiefdom of birth)	0.16	2,193,151	0.16	0.16	0.16	0.17
Non-agricultural employment (chiefdom of birth)	0.13	2,919,953	0.11	0.13	0.13	0.16
Non-agricultural employment (chiefdom of residence)	0.07	2,406,191	0.06	0.05	0.07	0.10
NPS						
Mobile phone ownership (chiefdom of birth)	0.18	5,160	0.15	0.18	0.14	0.24
Mobile phone ownership (chiefdom of residence)	0.08	4,473	0.07	0.08	0.07	0.11
Has tile or cement floor (chiefdom of birth)	0.26	5,167	0.19	0.27	0.21	0.35
Has tile or cement floor (chiefdom of residence)	0.14	4,497	0.11	0.14	0.12	0.19

Table 1: Descriptive Statistics

			By quartiles of number of ruling families			
		Number of observations	(1)	(2)	(3)	(4)
DHS (Health outcomes for children under five)						
Weight for height Z-score	-0.15 (1.60)	1,521	-0.14	-0.14	0.05	-0.27
Body mass index Z-score	-0.014 (1.66)	1,521	-0.020	-0.004	0.22	-0.16
Anemia	0.50	1,423	0.52	0.50	0.54	0.47
C. Attitudes						
Agrees one should respect authority	0.45	4,497	0.47	0.46	0.42	0.42
Agrees only older people can lead	0.31	4,497	0.31	0.30	0.35	0.29
D. Social Capital						
Attended community meeting in last year	0.43	4,438	0.46	0.42	0.43	0.39
Attended local council meeting	0.22	4,462	0.25	0.23	0.21	0.19
Attended meeting with Paramount Chief	0.39	4,424	0.42	0.40	0.40	0.34
School committee member	0.22	4,464	0.26	0.24	0.14	0.21
Labor gang member	0.25	4,467	0.26	0.24	0.27	0.23
Secret society member	0.37	4,457	0.44	0.35	0.30	0.36
Participated in road brushing in last month	0.40	4,464	0.47	0.41	0.40	0.31
E. Covariates of Economic Development in 1900						
Hut tax assessment (£per km^2)	0.85 (1.17)	87	0.94	0.89	0.54	0.87
Hut tax assessment (£per capita in 2004)	0.016 (0.019)	87	0.020	0.016	0.008	0.016
Distance to coast (km)	105 (66)	149	120	105	92	91
Distance to river (km)	9 (7)	149	12	8	8	9
Distance to rail (km)	45	149	44	46	45	38

Table 1: Descriptive Statistics

			By quartiles of number of ruling families			
		Number of observations	(1)	(2)	(3)	(4)
	(30)					
Minimum distance to Bo, Freetown or Kenema (km)	79 (44)	149	81	79	79	78
F. Individual Level Covariates						
Census						
Age	23 (20)	3,548,867	23	23	23	23
Female	0.52	3,549,147	0.51	0.52	0.52	0.53
Limba	0.07	3,549,037	0.7	0.09	0.05	0.06
Mende	0.36	3,549,037	0.42	0.41	0.43	0.17
Temne	0.30	3,549,037	0.10	0.26	0.31	0.63
NPS						
Paramount or section chief	0.09	4,497	0.10	0.09	0.10	0.08
Headman in household	0.18	4,475	0.20	0.18	0.18	0.13
Membership in ruling family	0.30	4,219	0.29	0.29	0.34	0.28

Notes: Standard deviations presented in parenthesis; no standard deviation reported for binary variables.

Table 2: Concentration of power

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	A. Herfhindahl power concentration index							
# families	-0.05	-0.06	-0.06	-0.06				
	(0.01)	(0.01)	(0.01)	(0.01)				
ln(# families)					-0.25	-0.31	-0.28	-0.28
					(0.03)	(0.03)	(0.03)	(0.03)
R^2	0.20	0.33	0.50	0.51	0.33	0.47	0.59	0.60
F	28.12				81.24			
	B. Number of seats held by family with most seats							
# families	-0.32	-0.35	-0.30	-0.35				
	(0.06)	(0.07)	(0.06)	(0.06)				
ln(# families)					-1.39	-1.66	-1.44	-1.60
					(0.22)	(0.23)	(0.21)	(0.23)
R^2	0.16	0.55	0.67	0.69	0.20	0.62	0.71	0.73
F	30.11				40.98			
Observations	149	149	149	149	149	149	149	149
Study Controls	NO	YES	YES	YES	NO	YES	YES	YES
District FE	NO	NO	YES	YES	NO	NO	YES	YES
Researcher FE	NO	NO	NO	YES	NO	NO	NO	YES

Notes: Robust standard errors in parentheses. Study controls are the number of chieftaincy seats recalled for the chiefdom, and a dummy for whether the chiefdom is an amalgamation chiefdom.

Table 3: Tests for exogeneity

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Tax per km^2	Tax per km^2	Tax per capita (2004)	Tax per capita (2004)	Distance to coast (km)	Distance to river(km)	Distance to rail (km)	Min. distance to 3 largest towns(km)
# families	-0.008	-0.04	-0.0003	0.0002	-5.0	-0.36	-0.58	0.03
	(0.035)	(0.04)	(0.0008)	(0.0009)	(2.1)	(0.28)	(1.17)	(1.54)
R^2	0.00	0.28	0.002	0.41	0.03	0.01	0.00	0.00
ln(# families)	-0.005	-0.13	-0.001	0.0006	- 20.1	-1.5	-3.1	0.13
	(0.155)	(0.16)	(0.004)	(0.004)	(9.8)	(1.1)	(4.7)	(6.03)
R^2	0.00	0.28	0.002	0.41	0.03	0.01	0.00	0.00
Number of observations	87	87	87	87	149	149	149	149
District fixed effects	NO	YES	NO	YES	NO	NO	NO	NO

Notes: Robust standard errors in parentheses.

Table 4: Educational outcomes, results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Literacy		Primary school attainment			Secondary school attainment		
Source	Census	Census	Census	Census	NPS	Census	Census	NPS
ln(# families)	0.051	0.046	0.055	0.048	0.054	0.038	0.036	0.044
	(0.013)	(0.011)	(0.014)	(0.012)	(0.024)	(0.010)	(0.009)	(0.020)
R^2	0.01	0.13	0.02	0.16	0.12	0.01	0.07	0.10
Observations	2,623,140	2,622,861	2,613,249	2,612,970	5,041	2,082,645	2,082,366	5,041
Chiefdoms	149	149	149	149	149	149	149	149
District FE	YES	YES	YES	YES	YES	YES	YES	YES
Demographic Controls	NO	YES	NO	YES	YES	YES	NO	YES

Notes: Individuals are matched to chiefdoms based on chiefdom of birth; Similar, in fact stronger, results obtain when matching on chiefdom of current residence. Standard errors are robust to heteroskedasticity and clustered at the chiefdom level. Dependent variables are dummy variables $\in \{0, 1\}$ indicating an individual's literacy, primary school attainment or secondary school attainment accordingly. For literacy and primary school attainment, all individuals above the age of 12 are included; for secondary school attainment all individuals above the age of 18. Individuals in the NPS sample are all household heads. Demographic controls include, age, age squared, and gender and ethnicity dummies. All specifications include 12 district fixed effects, the number of chieftaincy seats observed, and a dummy for whether the chiefdom is an amalgamation chiefdom.

Table 5: Health outcomes for children under five, results

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Weight for height Z-score		Body mass index Z-score		Anemia	
ln(# families)	0.212	0.211	0.189	0.185	-0.099	-0.091
	(0.117)	(0.117)	(0.123)	(0.124)	(0.041)	(0.040)
R^2	0.05	0.05	0.04	0.05	0.06	0.07
Number of observations	1,521	1,519	1,521	1,519	1,423	1,421
Number of Chiefdoms	116	116	116	116	114	114
District Fixed Effects	YES	YES	YES	YES	YES	YES
Mother Controls	NO	YES	NO	YES	NO	YES

Notes: Births are matched to chiefdom on current residence of the mother; chiefdom of birth is unavailable in the data set. Standard errors are robust to heteroskedasticity and clustered at the chiefdom level. Z-scores calculated using the World Health Organization Child Growth Standards (2006). Anemia is a dummy variable $\in \{0, 1\}$ indicating anemia was detected in a hemoglobin test. Children are matched to chiefdoms on chiefdom of current residence. Mother controls include ethnicity dummies, age and age squared. All specifications include 12 district fixed effects, number of seats and an amalgamation dummy.

Table 6: Economic outcomes, results

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Non-agricultural employment		Household mobile phone ownership		Household has cement or tile floor	
Chiefdom match	Birth	Residence	Birth	Residence	Birth	Residence
ln(# families)	0.016	0.022	0.068	0.038	0.078	0.040
	(0.008)	(0.011)	(0.025)	(0.021)	(0.026)	(0.022)
R^2	0.05	0.03	0.06	0.04	0.06	0.03
Observations	2,790,000	2,288,874	5,071	4,385	5,077	4,391
Chiefdoms	149	149	149	149	149	149
District Fixed Effects	YES	YES	YES	YES	YES	YES
Demographic Controls	YES	YES	YES	YES	YES	YES

Notes: Standard errors are robust to heteroskedasticity and clustered at the chiefdom level. Dependent variables for employment, phone ownership and floor quality are all dummy variables $\in \{0, 1\}$. Employment is observed in the census and asset ownership is observed in the NPS. Similar, though insignificant results for assets obtain matching on chiefdom of current residence in the DHS, which covers only 117 of 149 chiefdoms. Specifications for non-agricultural employment include all individuals above the age of 10. Demographic controls controls include gender, age, age squared, and ethnicity dummies. All specifications include 12 district fixed effects, the number of chieftaincy seats observed, and a dummy for whether the chiefdom is an amalgamation chiefdom.

Table 7: Effects on literacy by birth cohort

Birth Cohort	Pre 1918	1919-1923	1924-1928	1929-1933	1934-1938	1939-1943	1944-1948
ln(# families)	0.002	0.006	0.009	0.005	0.009	0.010	0.015
	(0.002)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.008)
R^2	0.29	0.23	0.28	0.24	0.27	0.28	0.41
Number of observations	148	148	148	148	148	148	148
Birth Cohort	1949-1953	1954-1958	1959-1963	1964-1968	1969-1973	1974-1978	1979-1983
ln(# families)	0.031	0.036	0.038	0.038	0.044	0.044	0.052
	(0.012)	(0.010)	(0.012)	(0.012)	(0.013)	(0.013)	(0.015)
R^2	0.45	0.36	0.43	0.37	0.34	0.34	0.37
Number of observations	148	149	149	149	149	149	149

Notes: The table presents coefficients in the OLS regression of the chiefdom literacy rate among five-year birth cohorts on the log number of families, controls for amalgamation, number of seats observed and district fixed effects. Individuals are matched on chiefdom of current residence; chiefdom of birth is not available in the 1963 census. Robust standard error in parenthesis. Cohorts born before 1953 are observed in the 1963 census, in which one chiefdom, Dibia, has missing data. Dropping this chiefdom from the 2004 data produces nearly identical results. Only chiefdom level aggregates were available in the 1963 census. For continuity, we present results for cohorts observed in the 2004 census using aggregates as well. Identical results obtain using the micro data for later cohorts.

Table 8: Attitudes, results

	(1)	(2)	(3)	(4)
Dependent variable	Agree one should respect authority		Agree only older people can lead	
ln(# families)	-0.088	-0.080	-0.038	-0.035
	(0.038)	(0.040)	(0.030)	(0.030)
R^2	0.06	0.07	0.05	0.07
Number of observations	4,497	4,391	4,497	4,391
District fixed effects	YES	YES	YES	YES
Demographic controls	NO	YES	NO	YES

Notes: Individuals are matched on chiefdom of current residence; similar, in fact stronger, results obtain matching on chiefdom of birth. Standard errors are robust to heteroskedasticity and clustered at the chiefdom level. Demographic controls are gender and ethnicity dummies, age and age squared. All specifications include 12 district fixed effects, number of seats and an amalgamation dummy.

Table 9: Social capital activities, correlation coefficients

	Attended community meeting	Attended local council meeting	Attended meeting with chief	School committee member	Labor gang member	Secret society member	Participated in road brushing
	Panel A: Individual level correlations of activities						
Attended community meeting	1.00						
Attended local council meeting	0.27	1.00					
Attended meeting with chief	0.28	0.39	1.00				
School committee member	0.22	0.16	0.17	1.00			
Labor gang member	0.23	0.10	0.12	0.06	1.00		
Secret society member	0.08	0.08	0.07	0.06	0.14	1.00	
Participated in road brushing	0.34	0.16	0.20	0.15	0.16	0.07	1.00
	Panel B: Chiefdom level correlations of aggregate shares						
Primary school attainment (Census)	-0.14	0.04	-0.19	-0.05	-0.36	0.21	0.01
Non-agricultural employment (Census)	-0.22	-0.16	-0.25	-0.03	-0.30	0.05	-0.20
Owns cement or tile floor (NPS)	-0.06	0.04	-0.10	0.04	-0.21	-0.01	-0.05
Owns mobile phone (NPS)	-0.09	-0.09	-0.08	0.12	-0.29	0.05	-0.10

Table 10: Social capital activities, results

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	A. Bridging			B. Bonding			C. Collective action
Dependent variable	Attended community meeting	Attended local council meeting	Attended meeting with chief	School committee member	Labor gang member	Secret society member	Participated in road brushing
ln(# families)	-0.086	-0.068	-0.045	-0.036	-0.073	-0.065	-0.075
	(0.025)	(0.022)	(0.027)	(0.022)	(0.023)	(0.033)	(0.035)
R^2	0.12	0.07	0.09	0.08	0.12	0.09	0.15
Number of observations	4,314	4,336	4,299	4,337	4,340	4,330	4,338
District fixed effects	YES	YES	YES	YES	YES	YES	YES
Demographic controls	YES	YES	YES	YES	YES	YES	YES

Notes: Individuals are matched on chiefdom of current residence; similar, in fact stronger, results obtain matching on chiefdom of birth. Standard errors are robust to heteroskedasticity and clustered at the chiefdom level. Dependent variables are all dummies. All specifications include 12 district fixed effects, demographic controls as in the attitudes specifications (gender and ethnicity dummies, age and age squared), the number of chieftaincy seats observed, and a dummy for whether the chiefdom is an amalgamation chiefdom.

Table 11: Robustness check including connections to chieftaincy elite

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Primary school attainment	Mobile phone ownership	Cement or tile floor ownership	Agree one should respect authority	Attended community meeting	Secret society member	Participated in road brushing
ln(# families)	0.055	0.067	0.083	-0.080	-0.085	-0.071	-0.076
	(0.025)	(0.025)	(0.026)	(0.040)	(0.024)	(0.035)	(0.033)
Paramount or section chief in household	0.012	0.048	0.072	0.023	0.141	-0.039	0.065
	(0.025)	(0.028)	(0.030)	(0.032)	(0.030)	(0.031)	(0.032)
Ruling family member	0.029	0.029	0.034	-0.012	0.051	0.047	0.068
	(0.017)	(0.013)	(0.017)	(0.020)	(0.022)	(0.020)	(0.020)
Village headman in household	-0.062	-0.095	-0.134	0.010	0.068	0.061	0.027
	(0.020)	(0.016)	(0.018)	(0.024)	(0.025)	(0.022)	(0.022)
R^2	0.13	0.07	0.07	0.07	0.14	0.10	0.17
Observations	4,770	4,797	4,803	4,128	4,092	4,108	4,111
District fixed effects	YES	YES	YES	YES	YES	YES	YES
Demographic controls	YES	YES	YES	YES	YES	YES	YES

Notes: For primary school attainment, mobile phone ownership and cement or tile floor ownership, individuals are matched on chiefdom of birth, as in previous specifications; results are very similar matching on chiefdom of current residence. For other variables, individuals are matched on chiefdom of current residence. Standard errors are robust to heteroskedasticity and clustered at the chiefdom level. Each specification includes number of seats and an amalgamation dummy, and demographic controls for age, age squared, sex and ethnicity dummies.

Table 12: Robustness check, connections to the elite

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable	Member of ruling family		Paramount or section chief in household		Headman in household	
ln(# families)	-0.012	-0.007	-0.006	-0.018	-0.033	-0.018
	(0.028)	(0.027)	(0.012)	(0.014)	(0.015)	(0.018)
R^2	0.01	0.26	0.02	0.24	0.05	0.13
Observations	147	147	147	147	147	147
District fixed effects	NO	YES	NO	YES	NO	YES

Notes: Dependent variables are chiefdom shares observed in the NPS. Standard errors are robust to heteroskedasticity. Two chiefdoms are missing at random due to the NPS sampling strategy. Each specification includes number of seats and an amalgamation dummy.

Table 13: Robustness check, effects of linkages to elite by log number of families

	(1)	(2)	(3)	(4)
Dependent variable	Primary school attainment	Secondary school attainment	Mobile phone ownership	Has tile or cement floor
Paramount or section chief in household	0.007	0.036	0.026	0.090
	(0.041)	(0.038)	(0.042)	(0.049)
Paramount or section chief in household × ln(# families)	-0.001	-0.017	0.011	-0.022
	(0.031)	(0.027)	(0.032)	(0.037)
Number of observations	4,353	4,353	4,381	4,387
R^2	0.169	0.143	0.128	0.115
Ruling family member	0.058	0.049	0.069	0.047
	(0.039)	(0.033)	(0.026)	(0.034)
Ruling family member × ln(# families)	-0.032	-0.021	-0.017	0.003
	(0.029)	(0.022)	(0.018)	(0.022)
Number of observations	4,103	4,103	4,128	4,134
R^2	0.174	0.148	0.133	0.121
Headman in household	0.036	0.054	0.050	0.032
	(0.034)	(0.029)	(0.025)	(0.030)
Headman in household × ln(# families)	-0.039	-0.039	-0.033	-0.024
	(0.025)	(0.020)	(0.019)	(0.024)
Number of observations	4,349	4,349	4,377	4,383
R^2	0.170	0.144	0.127	0.112
Demographic Controls	YES	YES	YES	YES
Chiefdom Fixed Effects	YES	YES	YES	YES

Notes: Standard errors are robust to heteroskedasticity and clustered at the chiefdom level. Dependent variables are all dummies. All specifications include 12 district fixed effects, demographic controls as in the attitudes specifications (gender and ethnicity dummies, age and age squared), the number of chieftaincy seats observed, and a dummy for whether the chiefdom is an amalgamation chiefdom.

Appendix Table 1: Chieftaincy Data

District	Chiefdom	Herfindahl	Number of families	Amalgamation	Number of seats
Bo	Badjia	0.56	2	0	6
	Bagbo	0.39	4	0	6
	Bagbwe	0.63	4	0	4
	Baoma	0.51	2	0	7
	Bumpe Ngao	0.33	5	0	3
	Gbo	0.50	3	0	6
	Jaiama Bongor	1.00	7	1	1
	Kakua	0.28	7	0	9
	Komboya	0.39	3	0	7
	Lugbu	0.72	2	0	6
	Niawa Lenga	0.38	5	0	4
	Selenga	0.51	2	0	7
	Tikonko	0.33	4	0	3
	Valunia	0.33	5	1	6
	Wonde	0.35	3	0	7
Bombali	Biriwa	0.50	3	0	6
	Bombali Sebora	0.28	4	1	10
	Gbanti Kamaranka	0.38	5	1	4
	Gbendembu Ngowahun	1.00	4	1	1
	Libeisaygahun	0.52	5	1	5
	Magbaimba Ndorhahun	0.47	5	1	8
	Makari Gbanti	0.50	8	1	2
	Paki Masabong	0.33	7	1	3
	Safroko Limba	1.00	2	0	4
	Sanda Loko	0.26	5	0	10
	Sanda Tendaran	0.59	3	0	7
	Sella Limba	0.28	4	0	8
	Tambakha	0.56	9	1	3
Bonthe	Bendu-Cha	0.33	5	1	3
	Bum	0.43	3	0	7
	Dema	0.50	2	0	4
	Imperri	0.50	2	0	4
	Jong	0.39	3	0	6
	Kpanda Kemo	0.39	3	1	7
	Kwamebai Krim	0.50	4	1	4
	Nongoba	0.50	3	0	4
	Sittia	0.63	3	0	4
	Sogbeni	0.56	2	0	6
	Yawbeko	0.25	4	1	4
Kailahun	Dea	1.00	2	0	5
	Jawie	0.51	2	0	7
	Kissi Kama	0.56	2	0	6

Appendix Table 1: Chieftaincy Data

District	Chiefdom	Herfindahl	Number of families	Amalgamation	Number of seats
	Kissi Teng	0.51	2	0	7
	Kissi Tongi	0.28	4	0	8
	Kpeje Bongre	0.56	7	1	3
	Kpeje West	1.00	1	0	5
	Luawa	0.43	3	0	9
	Malema	0.56	3	0	3
	Mandu	1.00	1	0	5
	Njaluahun	0.43	5	0	7
	Penguia	0.65	3	0	9
	Upper Bambara	0.33	4	0	9
	Yawei	0.25	4	0	8
Kambia	Bramaia	0.38	5	1	4
	Gbinle Dixin	0.25	9	1	4
	Mabolo	0.22	5	0	6
	Magbema	0.23	5	0	9
	Masungbala	0.34	8	1	8
	Samu	0.32	4	0	11
	Tonko Limba	0.27	4	0	11
Kenema	Dama	0.31	4	0	9
	Dodo	0.59	2	0	7
	Gaura	0.25	5	0	8
	Gorama Mende	0.72	2	0	6
	Kandu Leppiama	0.56	5	1	3
	Koya	0.47	3	0	8
	Langrama	0.63	2	0	4
	Lower Bambara	0.50	2	0	10
	Malegohun	0.50	9	1	4
	Niawa	0.44	5	0	5
	Nomo	0.63	2	0	4
	Nongowa	0.31	4	0	9
	Simbaru	1.00	1	0	6
	Small Bo	0.51	3	0	9
	Tunkia	1.00	3	0	3
	Wandor	0.44	3	0	5
Koinadugu	Diang	0.52	2	0	5
	Folosaba Dembelia	1.00	4	1	5
	Kasunko	0.52	5	1	5
	Mongo	0.39	6	1	6
	Neya	0.56	4	1	3
	Nieni	0.50	5	1	2
	Sengbe	1.00	3	1	3
	Sinkunia	0.80	2	0	9

Appendix Table 1: Chieftaincy Data

District	Chiefdom	Herfindahl	Number of families	Amalgamation	Number of seats
	Sulima	1.00	4	1	2
	Wara Wara Bafodia	0.50	7	1	6
	Wara Wara Yagala	0.50	2	0	6
Kono	Fiama	0.39	3	0	6
	Gbane	0.59	2	0	7
	Gbane Kandor	1.00	1	0	5
	Gbense	0.55	4	0	7
	Gorama Kono	0.50	2	0	4
	Kamara	0.38	4	0	4
	Lei	1.00	1	0	4
	Mafindor	0.72	2	0	6
	Nimikoro	0.50	2	0	4
	Nimiyama	1.00	3	0	3
	Sandor	1.00	1	0	5
	Soa	0.59	2	0	7
	Tankoro	0.39	3	0	6
	Toli	1.00	2	0	5
Moyamba	Bahruwa	0.38	4	1	4
	Bumpeh	1.00	2	0	10
	Dasse	1.00	2	0	4
	Fakunya	0.56	4	1	3
	Kagboro	1.00	2	0	17
	Kaiyamba	0.28	6	0	8
	Kamajei	0.33	8	1	3
	Kongboa	0.58	2	0	10
	Kori	0.56	4	0	6
	Kowa	0.30	6	0	10
	Lower Banta (Gbangbatoke)	0.72	5	0	6
	Ribbi	0.78	2	0	8
	Timdale	0.52	2	0	5
	Upper Banta (Mokele)	1.00	3	0	5
Port Loko	Bureh Kasseh Makonteh	0.56	12	1	3
	Buya	0.56	9	1	3
	Dibia	0.31	4	0	7
	Kaffu Bullom	0.20	6	0	10
	Koya	0.20	6	0	10
	Lokomasama	0.41	3	0	9
	Maforki	0.52	11	1	5
	Marampa	0.28	6	0	6
	Masimera	0.28	4	0	6
	Sanda Magbolontor	0.41	4	0	8
	Tinkatupa Maka Saffroko	0.28	7	1	5

Appendix Table 1: Chieftaincy Data

District	Chiefdom	Herfindahl	Number of families	Amalgamation	Number of seats
Pujehun	Barri	0.26	9	0	10
	Galliness Perri	1.00	3	1	1
	Kpaka	1.00	1	0	8
	Makpele	0.53	5	0	8
	Malen	0.63	4	0	4
	Mono Sakrim	1.00	1	0	7
	Panga Kabonde	0.56	5	1	3
	Panga Krim	0.56	2	0	6
	Pejeh (Futa Pejeh)	0.33	5	0	9
	Soro Gbema	0.33	4	1	3
	Sowa	1.00	1	0	5
	Yakemu Kpukumu Krim	0.56	3	1	3
Tonkolili	Gbonkolenken	0.56	4	1	3
	Kafe Simiria	1.00	3	1	1
	Kalansogoia	0.56	2	1	3
	Kholifa Mabang	0.24	5	0	10
	Kholifa Rowala	0.56	8	1	3
	Kunike	0.38	3	1	4
	Kunike Barina	0.36	4	0	5
	Malal Mara	0.50	8	1	2
	Sambaya	0.80	2	0	9
	Tane	0.33	4	0	9
	Yoni	0.38	8	1	4