

Collective Action in Diverse Sierra Leone Communities

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Public goods and politics in post-war Sierra Leone

- Why has Sierra Leone's post-war economic and political transition been relatively successful (so far)?
- Our project focuses on the political economy of public service provision in Sierra Leone, including its post-war institutional reforms
 - Interactions with civil war experiences?
 - Traditional authorities (chiefs) vs. elected local councils?
- This paper explores the impact of ethnic, religious, and “class” divisions on local collective action and public goods in Sierra Leone

Ethnic diversity, public goods, and development

- National ethnic diversity is associated with slower economic growth (Easterly and Levine 1997, Alesina et al 2003, Fearon 2003)
 - Failed local public goods provision a key channel (Alesina, Baqir & Easterly 1999, Miguel & Gugerty 2004)
- The impact of diversity is contingent on local politics, the social and historical context (Posner 2004, Miguel 2004)
- A concern is the endogeneity of diversity, both nationally (due to long-run policies in mass education and language) and locally, due to endogenous sorting across areas

Overview of this paper

- We estimate the impact of diversity on local public investment measures
 - Use historical census data to improve econometric identification of these relationships
 - Use new nationally representative surveys collected at the household, school, and health clinic levels
- The main finding: there is no evidence of negative ethnic diversity effects in Sierra Leone
 - No differential diversity impacts in communities that experienced more civil war violence
 - No impacts of religious diversity, historical slavery index
 - Colonial era ethnic/political divisions and the still strong chiefdom system help make sense of these patterns

Background on Sierra Leone

- Sierra Leone is among the world's poorest countries
 - Last (177th) on the UNDP human development index
 - Per capita GDP (PPP) is just US\$806
 - Life expectancy is 41.8 years, adult literacy 34.8%
 - Not just a legacy of the war: Sierra Leone had the second to lowest ranking in 1990
- The 1991-2002 civil war left over 50,000 dead and millions displaced
 - Revolutionary United Front (RUF) rebels terrorized civilians, sometimes in collaboration with the Sierra Leone Army, financing arms through diamond sales
 - But the war was not fought on ethnic or religious lines

Ethnicity in Sierra Leone

- Among the world's most ethnically diverse countries
 - Two major groups: Mende (dominant in the south) and Temne (north), both with 32% of the population
 - The two main political parties line up along these lines, but there is little overt ethnic tension or violence
 - Long-time dictator Siaka Stevens (1967-1985) belonged to a smaller group (Limba)
- The salient political division in the colonial period (until 1961) was Krio (Creoles) vs. "up-country tribes"
 - The Krio were former slaves who settled Freetown in 1787, and became a British Colony in 1808

The Krio

- The Krio prided themselves on being educated, devoutly Christian, and defenders of western “civilization”
 - West Africa’s first university (Fourah Bay College)
 - Prominent in local government and business
- Following British conquest of the rest of Sierra Leone in 1896, there was a major uprising (“Hut Tax Rebellion”) that laid bare the “up-country” animosity for Krios
 - Krio vs. non-Krio was the salient political divide – useful comparisons include Liberia, Rwanda
 - The British progressively removed Krios from positions of authority starting in the 1920s
- Krios are today only 1.4% of the population, but their language is the national lingua franca spoken by 95%

**Table 1: Ethnic population shares in Sierra Leone
(from the national population census)**

	1963	2004
Mende	0.309	0.322
Temne	0.298	0.318
Limba	0.084	0.083
Kono	0.048	0.044
Kuranko	0.037	0.041
Sherbro	0.034	0.023
Fullah	0.031	0.037
Susu	0.031	0.029
Lokko	0.030	0.026
Kissi	0.022	0.025
Madingo	0.023	0.024
Krio	0.019	0.014
Yalunka	0.007	0.007
Krim	0.004	0.002
Vai	0.003	0.001
Other	0.021	0.006

Figure 2: Ethnic fractionalization by chiefdom

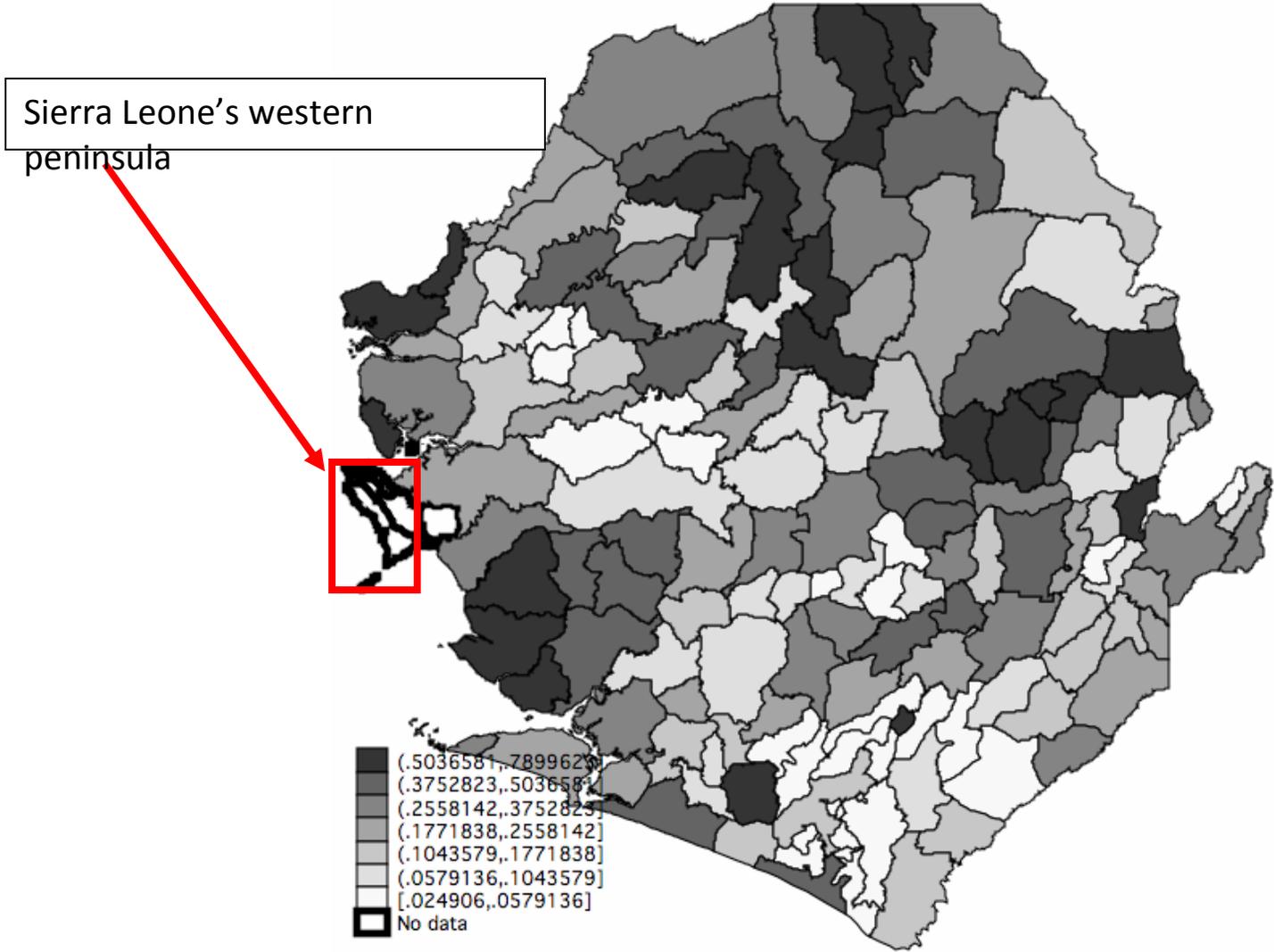
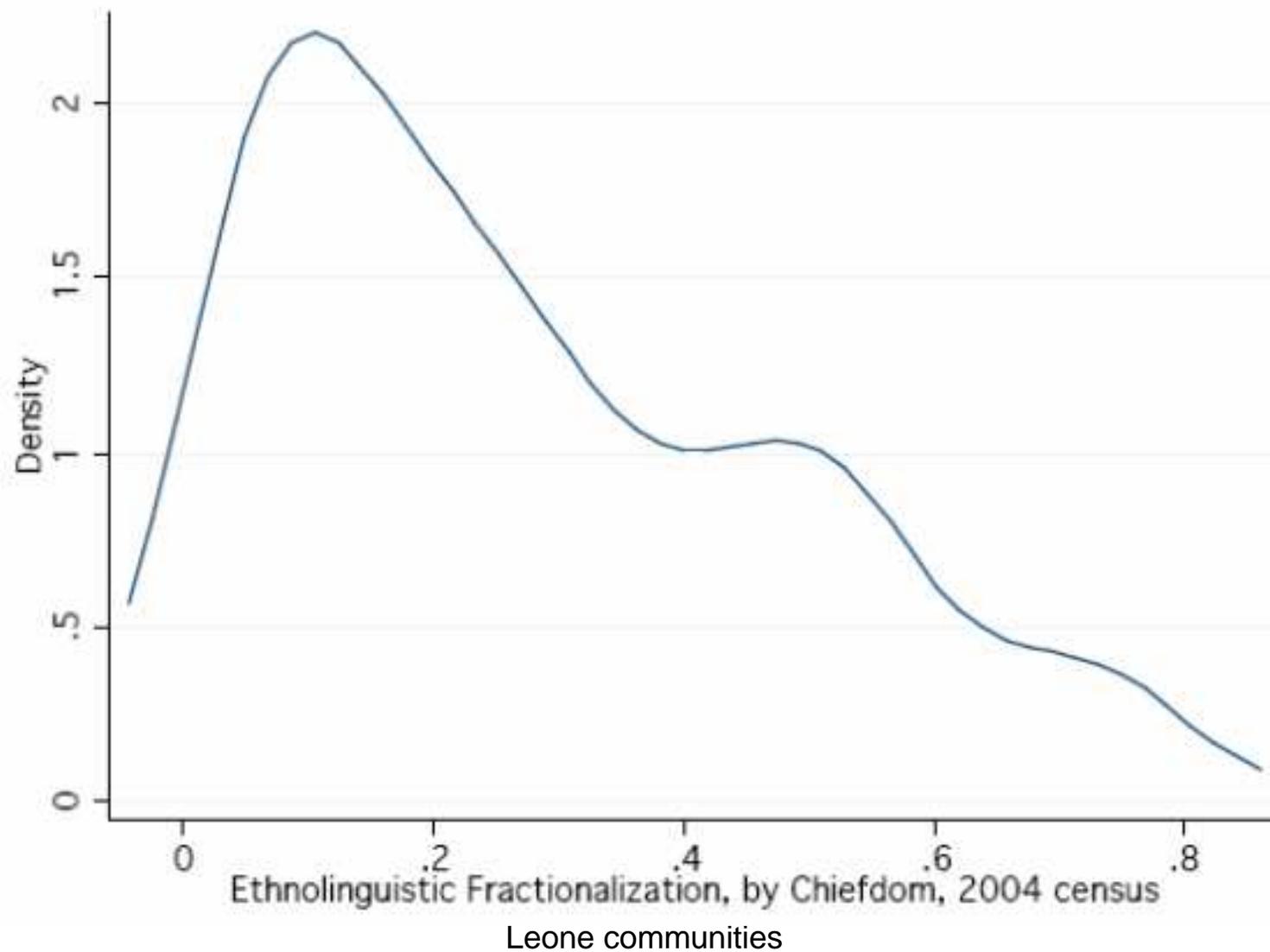


Figure 1: Ethno-linguistic fractionalization in Sierra Leone (non-parametric densities)
Panel A: Across chiefdoms



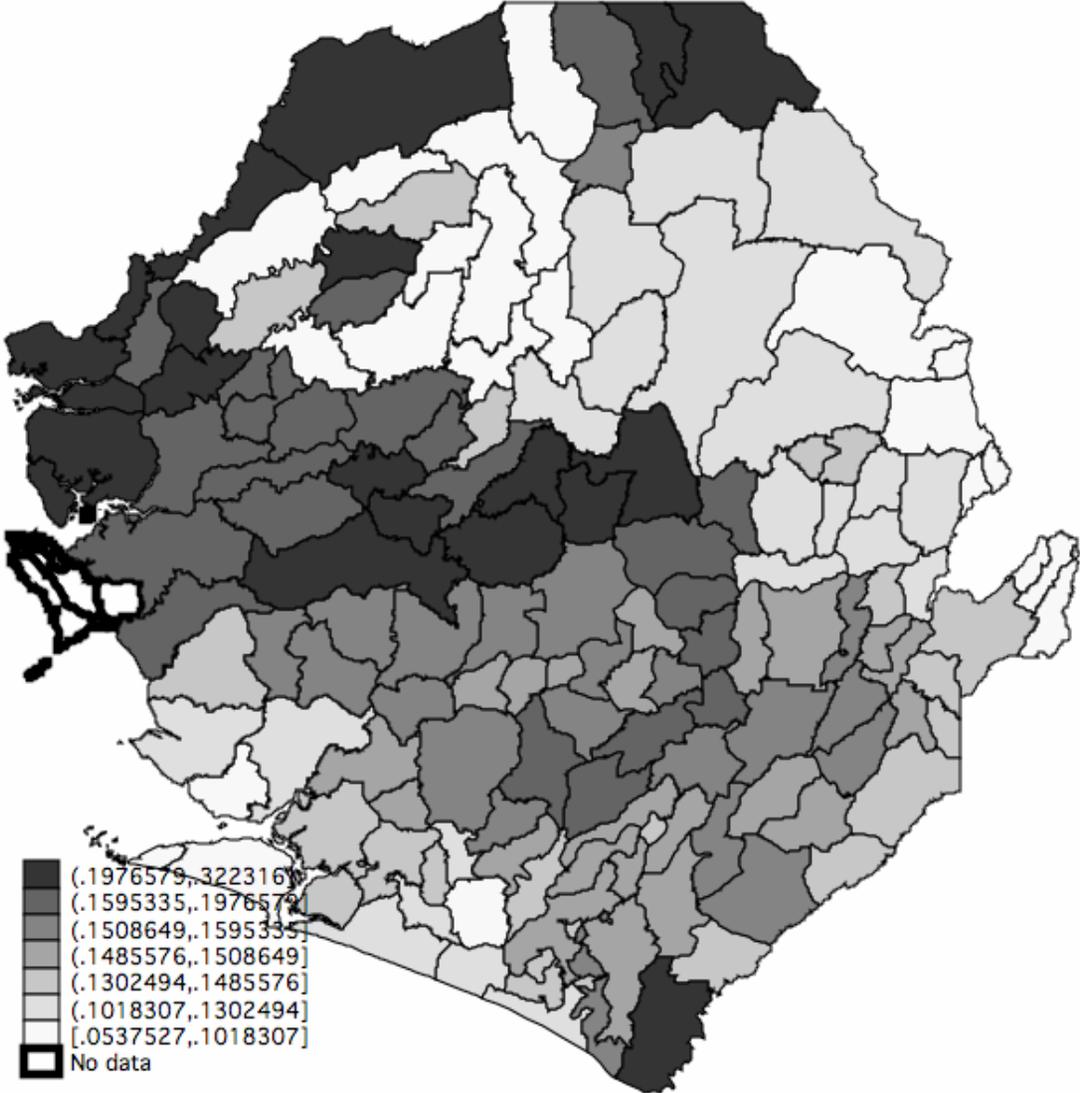
The domestic slave trade

- Domestic slavery persisted officially in Sierra Leone until 1927, and unofficially for several more decades
 - Domestic slaves (often wives and their descendents) performed arduous farm and non-farm work
 - Field work indicates local knowledge of slave ancestry
- Variation in domestic slavery by ethnic group: some (e.g., Madingo) were notorious raiders and a large population share were slaves, others were victims (Kissi, Limba)
 - UK Captain W.B. Stanley estimated domestic slave incidence by ethnic group in 1926, 15% overall
- Richards (2005) claims RUF support was stronger in areas with proximate memories of domestic slavery
 - Related to class, and the salient “elder” vs. “youth”, “chief” vs. “commoner”, “local” vs. “stranger” distinctions

Table 2: Domestic Slavery in Sierra Leone, by Ethnic Group, 1926 (colonial reporting)

Ethnic Group	1921 Population	% of pop. in domestic servitude (est.)
Madingo	8,705	35
Susu	53,753	33
Vai	24,541	30
Yalunka	12,400	25
Temne	311,418	20
Bullom	56,556	20
Mende	557,674	15
Fullah	6,001	15
Gola	8,773	10
Krim	23,471	10
Koranko	30,100	10
Konno	112,215	10
Sherbro	37,200	6
Lokko	45,052	5
Kissi	46,506	5
Limba	112,010	5

Figure 5: Historical slavery index, by chiefdom



Local public goods provision in Sierra Leone

- Wide variation in the degree of local responsibility for public goods across activities
- Mainly local collective action: funding and planning for road maintenance (“brushing”), agricultural labor and infrastructure (grain drying floor), some school supplies
 - Critical institutional element: local traditional authorities (chiefs) can fine free riders
- Mixed local/centralized: school buildings, extra teachers
 - Local collective action may help in lobbying central authorities, NGOs to provide funding
 - Highly centralized activities: most health clinic construction and hiring, much school construction
- Elected local councils have minimal authority (still)

Migration, ethnic preferences, and historical IVs

- Sorting complicates estimation of diversity impacts
 - The extensive war-related migration is a concern
- Between 1990 and 2007, individuals have a strong preference for moving to areas traditionally dominated by their own ethnic group (using 1963 census data), conditional on distance and other factors, Table 3
 - Educated individuals have less co-ethnic preference
- Despite migration, 1963 chiefdom ethnic diversity strongly predicts post-war 2004 diversity, Table 4
 - Coefficient estimate 0.80 (s.e. 0.086) at chiefdom level, 0.48 (s.e. 0.109) at EA level
 - Determinants of historical settlement? Exclude cities

Table 3: Migration across chiefdoms (logit)

	(1)	(2)	(3)
Distance	-0.068 (0.002) ^{***}	-0.078 (0.003) ^{***}	-0.038 (0.004) ^{***}
Own Ethnic Share	2.865 (0.250) ^{***}	3.779 (0.412) ^{***}	2.693 (0.545) ^{***}
ELF (1963)	2.630 (0.346) ^{***}	2.640 (0.451) ^{***}	4.189 (0.730) ^{***}
Education X Distance		0.024 (0.004) ^{***}	
Education X Own Ethnic		-2.016 (0.560) ^{***}	
Education X ELF		0.548 (0.614)	
Violence X Distance			-0.081 (0.012) ^{***}
Violence X Own Ethnic			0.799 (1.376)
Violence X ELF			-3.717 (1.608) ^{**}

Table 4: First stage regressions (historical IV)

Chieftdom level (N=149)		Enumeration Area (EA) level (N=448)	
	ELF		ELF
ELF (1963)	0.802 (0.086) ^{***}	ELF (1963)	0.475 (0.109) ^{***}
% Mende (1963)	-0.813 (0.180) ^{***}	% Mende (1963)	-0.179 (0.185)
% Temne (1963)	0.203 (0.186)	% Temne (1963)	0.026 (0.215)
(% Mende) ² (1963)	0.805 (0.206) ^{***}	(% Mende) ² (1963)	0.210 (0.208)
(% Temne) ² (1963)	-0.296 (0.206)	(% Temne) ² (1963)	-0.003 (0.239)
Cons	0.081 (0.031) ^{**}	Cons	0.032 (0.034)
<i>N</i>	149	<i>N</i>	448
<i>R</i> ²	0.702	<i>R</i> ²	0.186

Estimating diversity impacts

- Regress outcome Y_{ik} on ELF_j , historical diversity as IV:

$$(4) \quad Y_{jk} = \alpha_k + \beta_k ELF_j + X_j' \delta_k + S_j' \gamma_k + \varepsilon_{jk}$$

- Estimate at the enumeration area (village) level
- Also language, religious diversity; domestic slavery index

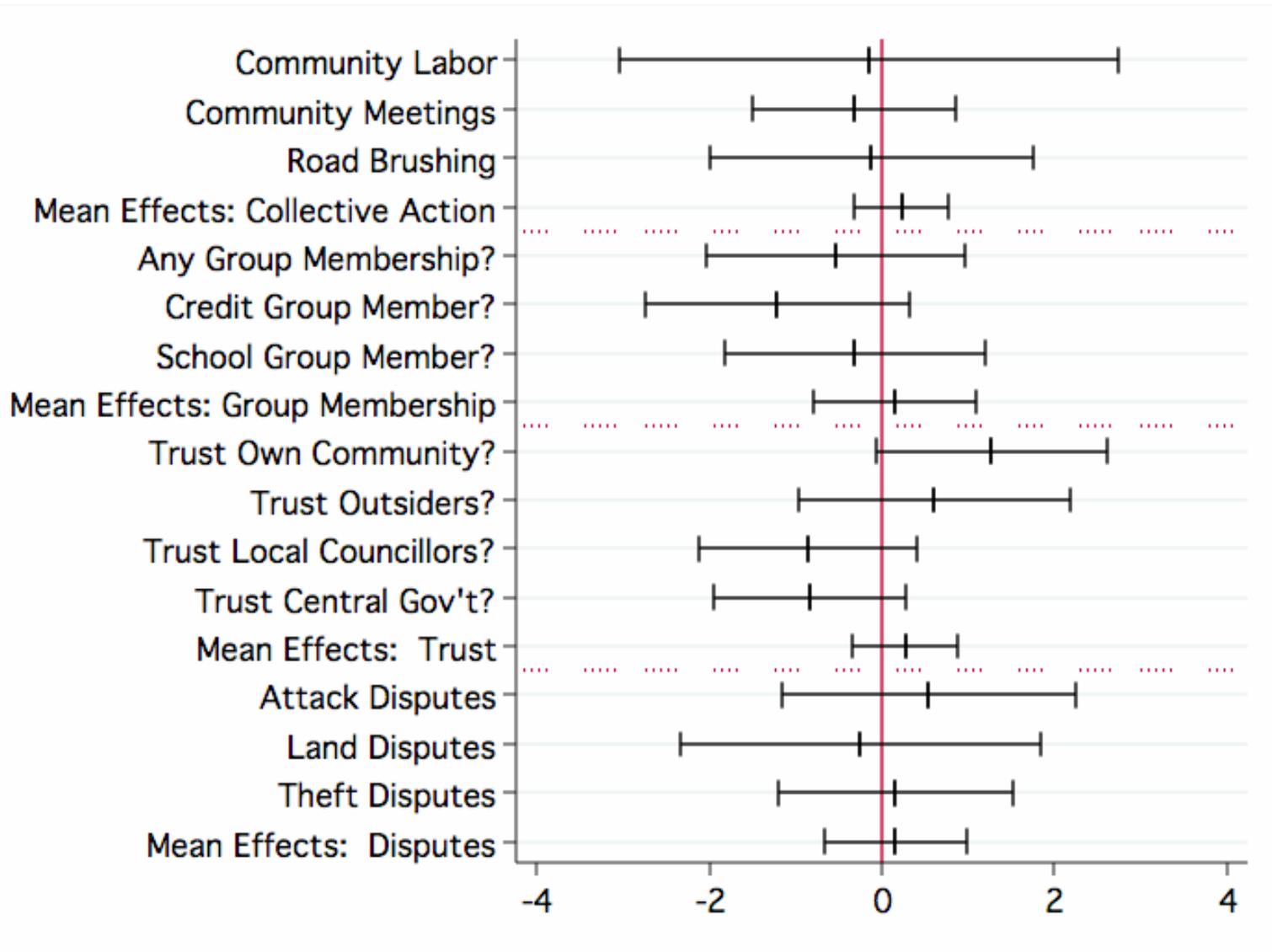
- First set of results on local collective action / public goods (road brushing, village meetings, communal labor), social capital (community groups, trust), and crime / disputes
 - NPS 2005, 2007 nationally representative surveys of over 6,000 households in each round; nationally representative samples of clinics, primary schools
- Combine estimates on related outcomes using mean effects (Katz et al 2007)

$$(5) \quad \tau_j = \frac{1}{K} \sum_{k=1}^K \frac{\beta_{kj}}{\sigma_k}$$

Table 5: Diversity impacts on “road brushing” (maintenance)

ELF	OLS Regressions				IV Regressions			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ELF	0.065 (0.099)	0.047 (0.108)	0.052 (0.097)	0.041 (0.152)	0.094 (0.198)	-0.064 (0.213)	-0.025 (0.201)	-0.084 (0.279)
Conflict Index		0.298 (0.156)*	0.283 (0.126)**	0.307 (0.121)**		0.324 (0.096)***	0.324 (0.091)***	0.329 (0.107)***
Ethnic Minority?		-0.073 (0.105)	-0.003 (0.129)	-0.204 (0.124)		-0.025 (0.140)	0.020 (0.134)	-0.140 (0.177)
Female?			-0.458 (0.288)	-0.443 (0.290)			-0.430 (0.294)	-0.413 (0.293)
Young?			-0.065 (0.245)	-0.074 (0.242)			-0.011 (0.191)	-0.012 (0.192)
Education			0.426 (0.080)***	0.379 (0.091)***			0.414 (0.161)**	0.352 (0.176)**
Conflict Index X ELF				-0.335 (0.290)				-0.132 (0.524)
Minority X ELF				0.808 (0.326)**				0.652 (0.423)

Figure 6: Local public goods and mean effects



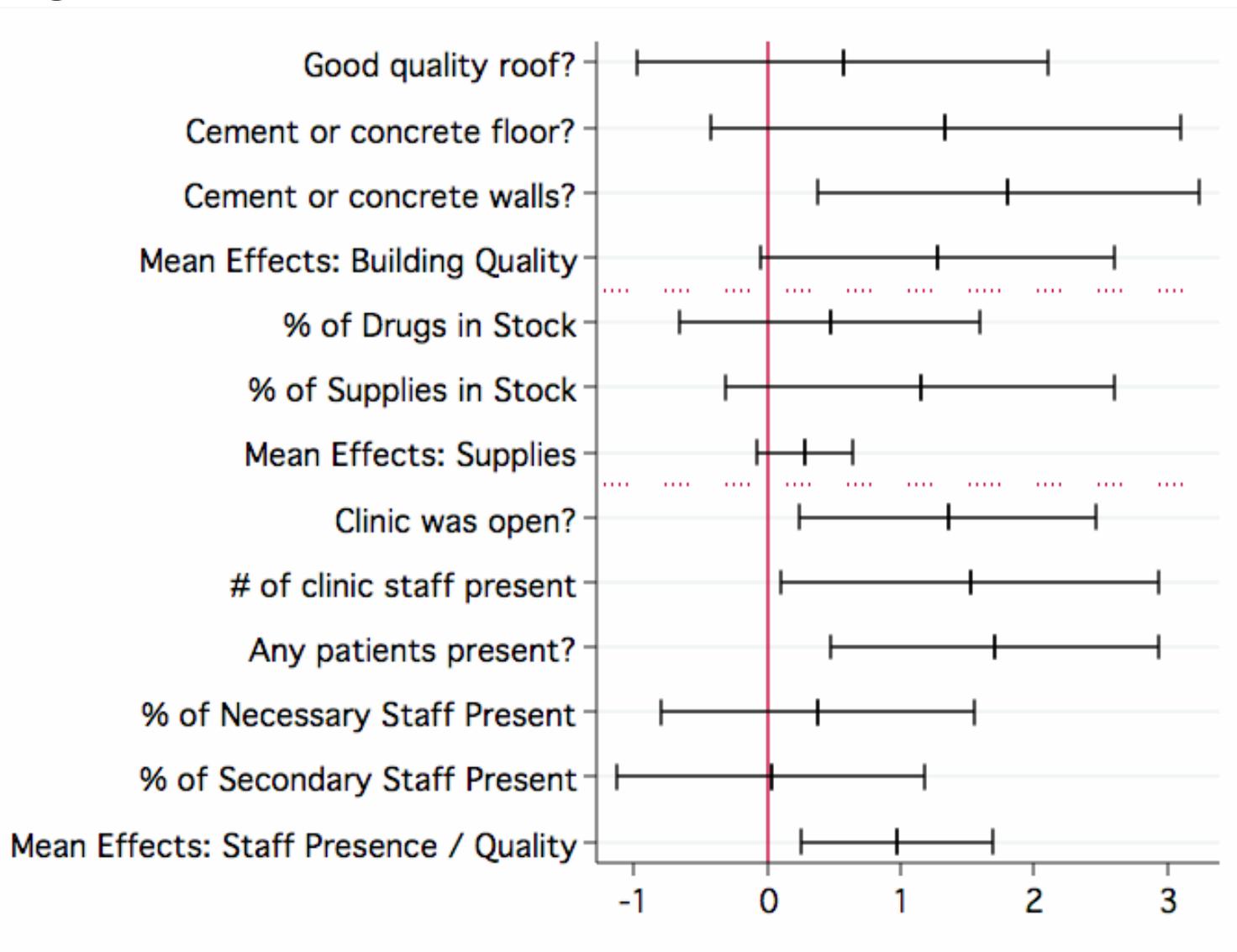
Local public goods: other results

- Magnitude: the 95% confidence interval rules out impacts of a 1 s.d. (0.2) ELF increase of more than $\pm 0.2-0.4$ s.d.
- No interactions with violence experienced during the civil war, or with local socioeconomic conditions
- No significant impacts in EA analysis (Table 7)
- No effects of language family diversity (Table 8) or religious diversity (Table 9) on outcomes
- No significant impacts using alternative diversity measures, e.g., polarization (Reynal-Querol 2005)
- No robust impacts of historical slavery, although possibly more disputes (Table 10)
 - A (potentially) offsetting effect: slave raiding ethnic groups were also better organized politically, militarily

Local public goods: other results

- Next set of outcomes from 2005 national school survey (N=338 schools), with information on supplies, teacher absenteeism and characteristics, construction materials
-- No impacts of any diversity measures (Tables 11-12)
- Outcomes from 2005, 2006 national health clinic survey (N=515), on drugs and supplies, staff absenteeism and characteristics, construction materials, prices
-- Positive impacts on building quality and staff quality (Table 13)

Figure 10: Health clinic outcomes, mean effects



Discussion

- Casey (2009) on ethnic voting and party competition: diverse areas as “swing” areas targeted for transfers
 - A possible explanation for the positive clinic findings
- The “puzzle” of diversity in Sierra Leone: ethnicity matters in migration decisions and voting, but does not translate into lower public goods, social capital, or civil war violence
- Positive interpretation: common national identity and language (Krio) and historical factors promote cooperation
 - Alternative interpretation: local public goods provision is maintained by a coercive traditional hierarchy which creates other social divisions – such as those between chief vs. non-chief families, youth vs. elders
 - Public goods games in Uganda (Habyarimana et al 2007): third party enforcement boosts public provision

The role of chiefs in local public goods provision

- Do “strong” chiefs dampen adverse diversity impacts?
 - We collected data on 144 of 149 paramount chiefs in Sierra Leone in 2007-2008
- Chief tenure, education, “modern” political attitudes (i.e., support for the rule of law) are not associated with local public goods outcomes, either directly or in interaction with ethnic diversity
- This does not rule out the “strong chief” explanation, for at least two reasons:
 - Even “weak” chiefs in Sierra Leone are strong
 - We may not have great measures of chiefly power

Conclusion and future work

- Sierra Leone has many institutional failings, but bad local outcomes driven by social divisions is apparently not one
- The broader project
 - Can you weaken grip of traditional institutions through a community driven development (CDD) intervention and if so, what impact on public goods, role of ethnic identity?
 - Are CDD impacts affected by local civil war history?
 - How are local political participation and voting, and local collective action affected by better information, through an intervention that provided wind-up radios to households?
 - How do the characteristics and performance of local councilors affect electoral success and voter turn-out?
 - Did decentralization in health affect clinic quality?

Panel B: ELF distribution across enumerations areas

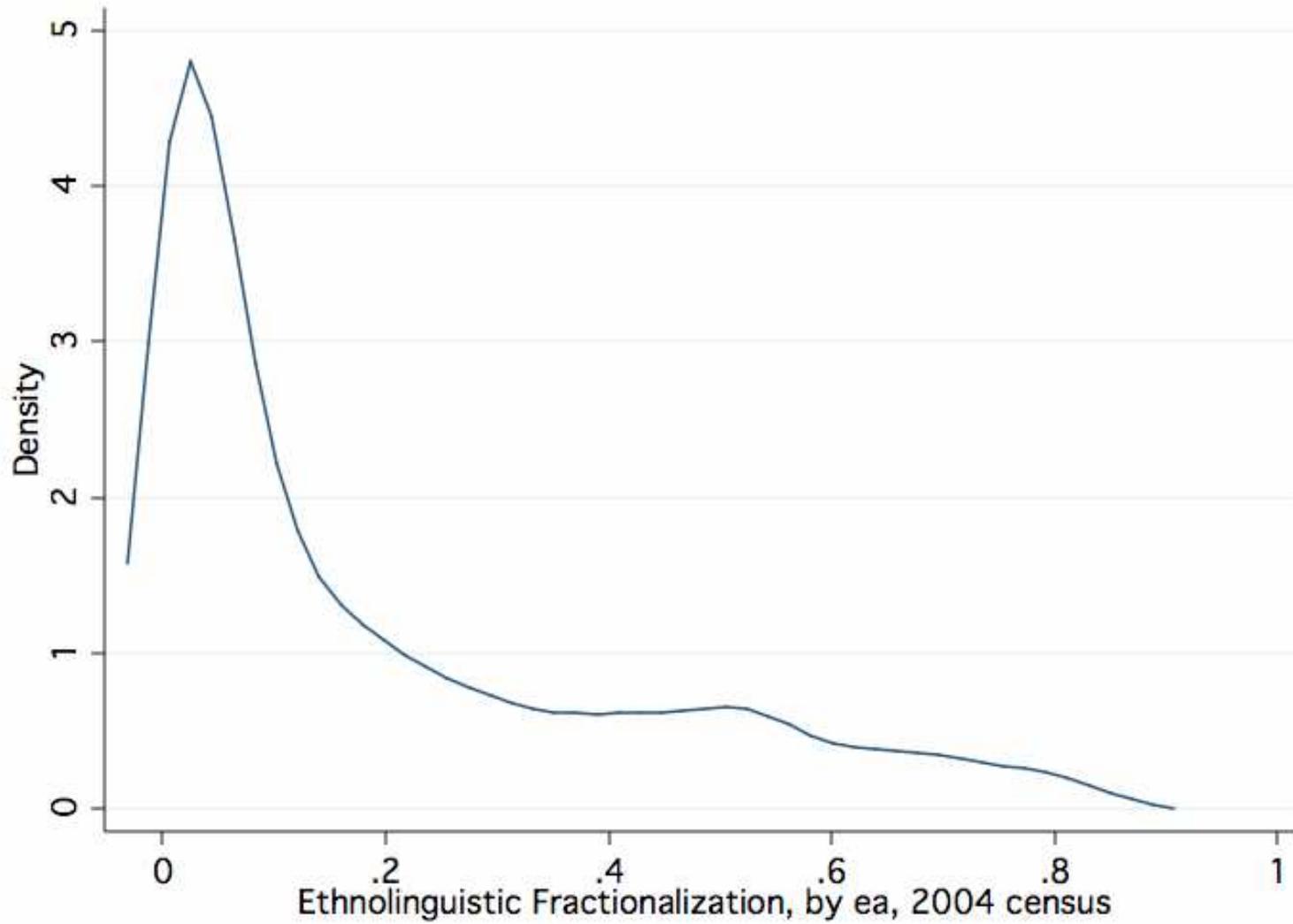


Figure 8: Domestic Slavery impacts, mean effects

