

# Refugee, Diversity and Conflict in Sub-Saharan Africa

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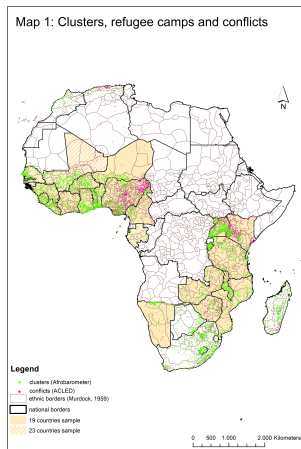
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# How do refugees affect conflict through changing ethnic diversity?

## ★ Diversity & Conflict

- ★ Ethnic diversity argued to be linked to lower provision of public goods, mistrust, poor institutions, and **conflict** (Esteban & Ray, 1999; Esteban et al., 2012b; Arbatli et al., 2020)
  - ★ Theory & Empirics:  $\uparrow$  in ethnic polarization  $\rightarrow$   $\uparrow$  conflict while fractionalization matters less (Esteban et al. 2012a, 2012b)
  - ★ Cross-country analysis is too limited (Bazzi et al. 2019; Amodio & Chiovelli 2019)
  - ★ We exploit **time-varying diversity indices induced by refugees**
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- ★ Impact of forced migration on hosting societies (Ruiz and Vargas-Silva, 2013; Maystadt et al., 2019; Becker and Ferrara, 2019; Verme and Schuettler, 2021)
    - ★ No or short-lived impact on conflict (Zhou and Shaver, 2021; Coniglio and Vurchio, 2021)
    - ★ Our paper: **Changes in ethnic composition matter:**
      - ★ **Refugee-induced polarization  $\Delta+$  Conflict**
      - ★ **Refugee-induced fractionalization  $\Delta-$  Conflict**

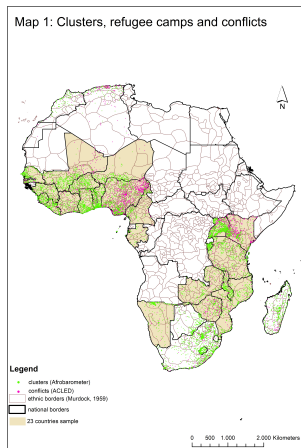
# Diversity and Conflicts



Source: Afrobarometer, UNHCR Refugee Camps, EPR-ER and ACLED, 2005 - 2016.

- ★ **Armed Conflict Location and Event Data:**
  - ★ conflict incidence (dummy variable) and conflict intensity (sum of conflicts) with violent, non-violent events, violence against civilians and riots
- ★ **Afrobarometer:**
  - ★ 7,547 clusters in 23 countries during the period 2005-2016, standard diversity indices EF and EP

# Diversity, Refugee Camps and Conflicts



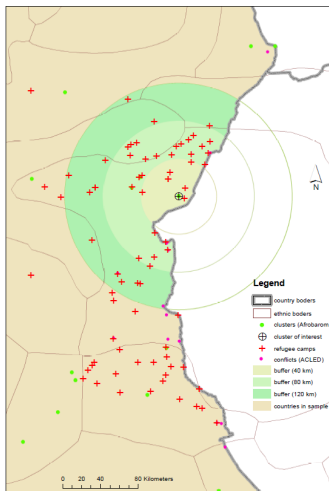
Source: Afrobarometer, UNHCR Refugee Camps, EPR-ER and ACLED, 2005 - 2016.

- ★ Armed Conflict Location and Event Data:
- ★ Afrobarometer:
- ★ **UNHCR refugee camps data:**
  - ★ 821 refugee camps in sub-Saharan Africa and 172 camps at a distance of 80-km ( $\geq$  18 years-old)
- ★ **Ethnic Power Relations - Ethnicity of Refugees 2019:**
  - ★ Ethnic composition of refugees from neighboring countries and in proximity to each other (maximal distance between borders  $\leq$  950 km)



## Revised refugee diversity indices

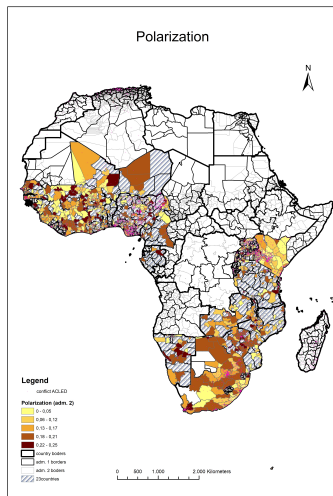
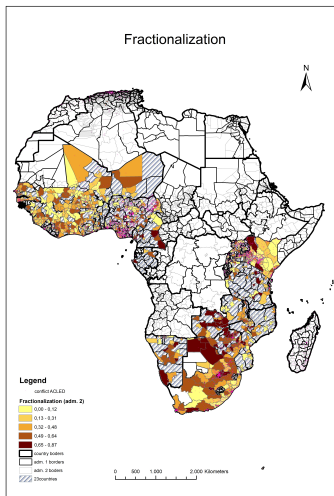
- ★ Using EPR-ER, including ethnicity from refugees in standard diversity measures (with LEDA)



Source: Afrobarometer, UNHCR Refugee Camps, EPR-ER and ACLED, 2005 - 2016.

# Refugee Diversity Measures

## ★ Ethnic fractionalization and ethnic polarization



## Methodology

- ★ A game-theoretic contest model between groups by Esteban and Ray (2011):
  - ★  $\uparrow$  in ethnic polarization  $\rightarrow \uparrow$  conflict while fractionalization matters less (unique Nash equilibrium)

- ★ The estimated equation:

$$\text{Conflict}_{jt} = \underbrace{\alpha_j + \tau_t}_{\text{fixed effects}} + \beta_1 \underbrace{\text{RefEF}_{jt-1}}_{\text{fractionalization}} + \beta_2 \underbrace{\text{RefEP}_{jt-1}}_{\text{polarization}} + \beta_3 \underbrace{\text{REF}_{jt-1}}_{\text{refugees, 80-km}} + \beta_4 \underbrace{Q_{jt}}_{\text{climate}} + \epsilon_{jt}$$

- ★ Level of analysis: cluster  $j$  (cities or villages)
- ★ Potential selection of hosting areas by refugees  $\rightarrow$  gravity model as an instrumental variable approach

$$\underbrace{\text{REF}_{odet}}_{\text{predicted refugee}} = \underbrace{\alpha_{od} + \gamma_e + \tau_t}_{\text{fixed effects}} + \beta_1 \text{Conflict}_{ot-1} + \beta_2 \text{Conflict}_{et-1} + \beta_3 \text{Distance}_{ed} + \epsilon_{odet}$$

- ★  $e$ : historical homeland of ethnic groups (Murdock's Atlas)

## Diversity and Violent Conflict Incidence

	(1)	(2)	(3)	(4)	(5)	(6)
	Violent Conflict, Incidence					
EF	-0.1090 (0.0716)	-0.1096 (0.0718)				
EP	0.2263 (0.2103)	0.2278 (0.2108)				
Refugees (80km, IHS)		0.0004 (0.0028)		0.0012 (0.0030)		0.0008 (0.0030)
Corrected EF (80km, Min. Ling. Dist.)			-0.1593* (0.0814)	-0.1686** (0.0856)	-0.1717** (0.0815)	-0.1780** (0.0858)
Corrected EP (80km, Min. Ling. Dist.)			0.4181* (0.2180)	0.4238* (0.2196)	0.4450** (0.2186)	0.4487** (0.2202)
Rain anomalies (80km)					-0.0008** (0.0004)	-0.0008** (0.0004)
Temp anomalies (80km)					-0.0834*** (0.0230)	-0.0832*** (0.0230)
Observations	14,441	14,441	14,441	14,441	14,441	14,441
R-squared	0.661	0.661	0.661	0.662	0.662	0.662
Year FE	Y	Y	Y	Y	Y	Y
PSU FE	Y	Y	Y	Y	Y	Y

- ★ A one s.d. ↑ in the refugee-corrected EP ↑ conflict by 5 p.p (opposite effect of refugee-corrected EF)
- ★ No impact of standard diversity indices on conflict

## Alternative Outcomes

	(1)	(2)
	Corrected EF (80km, Min. Ling. Dist.)	Corrected EP (80km, Min. Ling. Dist.)
A. Benchmark Results (N=14,441) <sup>a</sup>	-0.1780** (0.0858)	0.4487** (0.2202)
B. Violent conflict, Intensity (N=14,441) <sup>b</sup>	-0.3088 (0.2086)	0.9170* (0.5183)
C. Non-Violent Conflict, Incidence (N=14,441) <sup>c</sup>	-0.0536 (0.0797)	0.3654* (0.2127)
D. Non-Violent Conflict, Intensity (N=14,441) <sup>d</sup>	-0.2402 (0.2092)	0.8250 (0.5588)
E. Civilian Conflicts, Incidence (N=14,441) <sup>e</sup>	-0.1460* (0.0847)	0.4032* (0.2169)
F. Civilian Conflicts, Intensity (N=14,441) <sup>f</sup>	-0.3762** (0.1892)	1.1916** (0.4660)
G. Protests, Incidence (N=14,441) <sup>g</sup>	-0.0853 (0.0809)	0.4754** (0.2160)
H. Protest, Intensity (N=14,441) <sup>h</sup>	-0.1891 (0.2062)	0.8323 (0.5536)
I. Conflict (UCDP), Incidence (N=14,441) <sup>i</sup>	0.0642 (0.0638)	-0.2532* (0.1514)
J. Conflict (UCDP), Intensity (N=14,441) <sup>j</sup>	-0.0143 (0.1624)	-0.1200 (0.3972)

## Alternative Specifications

	(1)	(2)
	Corrected EF	Corrected EP
A. Benchmark Results (N=14,441) <sup>a</sup>	-0.1780** (0.0858)	0.4487** (0.2202)
B. Alt. Ethnicity Linking (N=14,441) <sup>b</sup>	-0.1597** (0.0690)	0.3202* (0.1939)
C. Buffer at 40km (N=14,441) <sup>c</sup>	-0.1188* (0.0711)	0.3145* (0.1827)
D. Buffer at 120km (N=14,441) <sup>d</sup>	-0.1090 (0.0755)	0.3311* (0.1999)
E. Non-Linear Model (N=5,761) <sup>e</sup>	-0.2259** (0.1030)	0.5649** (0.2486)
F. Dist. Border* $\tau_t$ (N=14,425) <sup>f</sup>	-0.3036 (0.2728)	1.2360* (0.7062)
G. Inter-group Ling. Dist (N=14,425) <sup>g</sup>	-0.3114 (0.2686)	1.2526* (0.6919)
H. Inter-group Ling. Dist only EF (N=14,425) <sup>h</sup>	-0.1735 (0.1270)	0.9029** (0.4184)
I. All Geocoded Locations (N=23,256) <sup>i</sup>	-0.1675*** (0.0631)	0.3608** (0.1584)
J. GADM2 Aggregation (N=1,565) <sup>g,j</sup>	-1.8531* (1.0836)	5.0279* (3.0463)

# Diversity and Violent Conflict Incidence

	(1)	(2)	(3)	(4)
	Violent Conflict, Incidence			
<b>Panel A:</b>	<b>Second-Stage</b>			
Corrected EF (80km, Min. Ling. Dist.)	-0.1983**	-0.2090**	-0.1968**	-0.2100**
	(0.0888)	(0.0923)	(0.0885)	(0.0920)
Corrected EP (80km, Min. Ling. Dist.)	0.5595**	0.5722**	0.5546**	0.5702**
	(0.2572)	(0.2601)	(0.2563)	(0.2590)
R-squared	0.0018	0.0019	0.0029	0.0030
Kleibergen-Paap rk Wald F	885.8	916.2	888	918.6
Root MSE	0.290	0.290	0.290	0.290
<b>Panel B:</b>	<b>First-Stage (Corrected EF)</b>			
Predicted Corrected EF	0.9552***	0.9616***	0.9542***	0.9603***
	(0.0072)	(0.0086)	(0.0072)	(0.0084)
Predicted Corrected EP	0.0400**	0.0330*	0.0367**	0.0304
	(0.0181)	(0.0189)	(0.0183)	(0.0186)
<b>Panel C:</b>	<b>First-Stage (Corrected EP)</b>			
Predicted Corrected EF	0.0125***	0.0064**	0.0124***	0.0066**
	(0.0018)	(0.0029)	(0.0018)	(0.0028)
Predicted Corrected EP	0.9663***	0.9731***	0.9661***	0.9720***
	(0.0050)	(0.0061)	(0.0052)	(0.0060)
Observations	14,441	14,441	14,441	14,441
Year FE	Y	Y	Y	Y
PSU FE	Y	Y	Y	Y
Country-Time Trends	N	N	Y	Y
Refugees (80km, IHS)	N	Y	N	Y
Climatic Controls	Y	Y	Y	Y

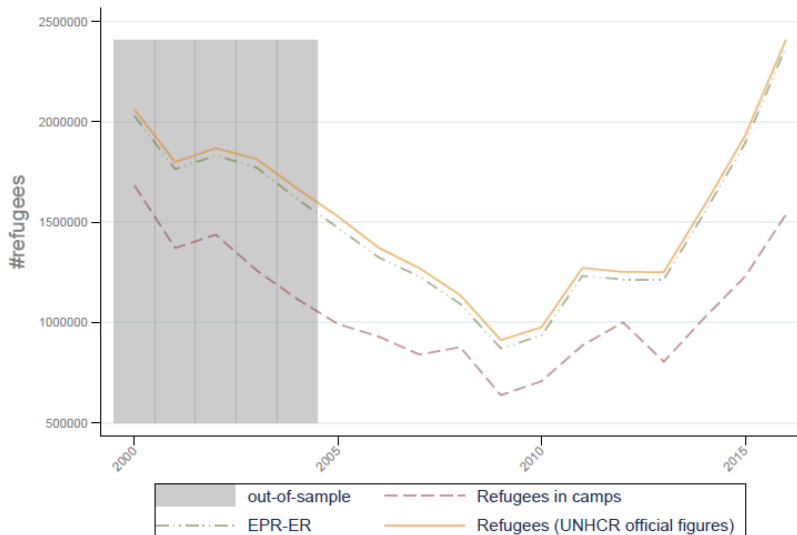
## Contributions and Concluding Remarks

- ★ Our contribution:
  - ★ Diversity indices including changes in ethnic composition by refugee populations
  - ★ Impact of a change in ethnic composition on conflict in hosting communities
  
- ★ Our findings on risk of conflict:
  - ★ Refugees per se do not exacerbate conflict ...
  - ★ ↓ when fractionalization (intergroup contact with small groups) ↑
  - ★ ↑ when polarization between a few large groups ↑
  - ★ Results robust to using a gravity model as an instrumental variable strategy
  - ★ Results confirmed with individual data on physical assault and to some extent, on interpersonal violence ...
  - ★ ... in particular among the unemployed
  - ★ ... but not on ethnic attachment, generalized trust, trust in neighbors and institutional trust
  
- ★ Policy conclusions:
  - ★ Specific interventions have been promising (Betts et al. 2021, ...) in improving refugee-host social cohesion but need to be targeted to polarized hosting areas?
  - ★ Need to map systematically ethnic diversity among the refugees and the hosts?



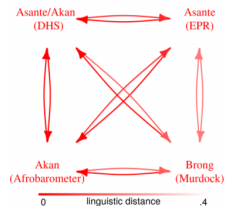
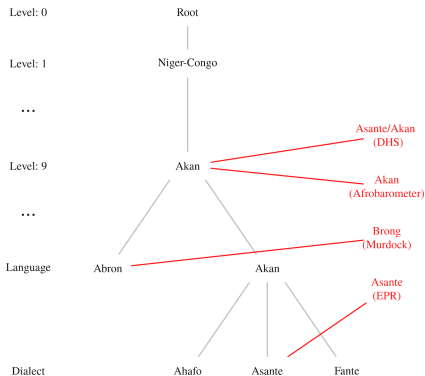
## Data Limitation

## ★ UNHCR Official Refugee Statistics vs. UNHCR Refugee Camps



## LEDA project

## ★ Linking ethnic data from Africa (LEDA)



Source: Müller-Crepon et al., 2020.

## Gravity Model

	(1)	(2)
	Stock of Refugees Per Ethnic Group	
Conflict events at origin	0.0008*** (0.0003)	0.0008*** (0.0003)
Distance, origin-destination	-	-0.0034*** (0.0011)
Conflict events at e	-0.0002 (0.0002)	-0.0002 (0.0002)
Distance, e-destination	-0.0001 (0.0005)	-0.0014** (0.0007)
Destination FE	N	Y
Ethnic Group FE	Y	Y
Origin FE	N	Y
Origin-Destination FE	Y	N
Year FE	Y	Y
Observations	4,068	4,140
Pseudo R <sup>2</sup>	0.667	0.607

★ e: historical homeland of ethnic groups