



## **Ethnic Inequality and Forced Displacement**

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# Ethnic Inequality and Forced Displacement

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*We study how inequality shapes victimization in ethnic conflicts. Our case study of a recent conflict in Kyrgyzstan documents how communities with large ethnic inequalities in education experienced intense displacement of their habitants. We first demonstrate that the correlation of ethnic inequalities and conflict intensity at the community level is robust against alternative drivers of conflict such as polarization or segregation. We then identify who precisely in the joint distribution of education and ethnicity is displaced by the conflict. Our findings suggest that horizontal and vertical inequality can drive victimisation in different ways for different people: For instance, socio-economic advantage compared within ethnicity increased individual probabilities to be displaced, and decreased probabilities compared to the other ethnicity.*

## I. Introduction

A long-standing paradigm in the social sciences has linked inequality to conflicts. With the end of the cold war, ethnic identity has arisen as another major dimension of violent conflicts. A group of scholars stresses the importance of between-group inequalities, often described as horizontal inequalities, for the *onset* of conflict [Østby, 2008, Cederman et al., 2015]. Recent cross-country evidence by Huber and Mayoral [2018] has made a strong case for an emphasis on inequality within ethnic groups, vertical inequality, for the *intensity* of conflict. Against this background, it remains unclear who the victims are behind inequality measures? Does vertical inequality mean that the privileged gain at the expense of the poor across ethnic groups? Will widening horizontal inequality make a privileged minority a target for the majoritarian group?

Our paper attempts to fill this gap by studying forced displacement during a recent conflict in Kyrgyzstan. The multi-ethnic country in Central Asia experienced a political turmoil in 2010, which spiraled into deadly confrontations between militias, government forces and rioters. Several days of violent conflict, left more than 400 dead and displaced some 375,000 individuals in a country of merely 6 millions habitants [UNHCR, 2010]. Anecdotal evidence describes the

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ethnic resentments and socio-economic grievances between the two major ethnic groups, Kyrgyz and Uzbeks, as major drivers of the conflict [Solvang and Neistat, 2010]. Within this context, we study the conflict outcomes of individual members of both ethnic groups conditional on their socio-economic status. More precisely, we would like to answer the question if socio-economic advantages towards the own or the other group made victimisation more likely?

We study forced displacement as the dominant dimension of victimization by drawing on data from the nationally representative Life in Kyrgyzstan Study in 2010, the 2009 Census and data from the Uppsala Conflict Data Program [Brück et al., 2014, Census, 2009, Sundberg and Melander, 2013]. Variation across communities demonstrates, controlling for the distance to violence, how places with higher disparities in education within and between Kyrgyz and Uzbeks experienced higher displacement rates. The correlation is robust to alternative drivers of conflict proposed in the literature such as ethnic polarization and spatial segregation [Reynal-Querol and Montalvo, 2005, Corvalan and Vargas, 2015]. After establishing that local variation in inequalities drive the intensity of conflict, we describe where the victims of this conflict rank in the joint distribution of ethnicity and education.

For individuals, we estimate linear probability models, regressing forced displacement on individual education relative to points on the local distribution of education of Uzbeks and Kyrgyz. By doing so, we decompose horizontal and vertical inequalities to investigate whether displaced individuals were advantaged or disadvantaged compared to other members of the districts of their own or the other ethnicity. We find that socio-economic advantage matters differently within the own ethnic group (vertical inequality), and between ethnic groups (horizontal inequality): Highly educated individuals above the last quintile of the other ethnicity’s local distribution (horizontal inequality) were more likely to stay. However, the highly educated above the last quintile of their own ethnicity (vertical inequality), exhibited a tendency to be displaced.

We contribute to the literature by deconstructing the link between ethnic inequality and victimization with this case study. By indentifying victims conditional on both ethnicity and social-economic status, we emphasize that consequences of conflicts are not evenly distributed across the population. We believe that our procedure can inform, under minimal data requirements, the welfare assessment of internally displaced people (IDPs) and refugees, and the design of peace building policies.

The following Section provides an overview over the literature. Section III sketches a short background of the conflict. Section IV presents our data and methodology, V displays our results and Section VI concludes.

## II. Previous Literature

This paper builds on a rich literature on ethnic identity, inequality and conflict. Esteban and Ray [2008] build a seminal model along these three dimensions. They model a society, engaged in the production of public goods, which can be partitioned into two social classes and two ethnicities. The society can tip into conflict where alliances run either along class or ethnic lines. The model entails a systemic bias toward ethnic conflict if economic opportunities are distributed unequally. Within-ethnic-group specialization splits the alliance into rich providers of financial means and poor suppliers of conflict labor. Even though the rich are supposed to prefer peace, they might favor ethnic conflict in order to avoid class conflicts putting their economic privileges in question.

Bramoullé and Morault [2016] develop a formal model with a minority described as market-dominant, a poor ethnic majority and their coethnic political elite. When threats to the privileges of the governing elite are high, the elite will find it optimal to use the well-off ethnic minority as a scapegoat. By lowering redistribution financed from taxes on the rich ethnic minority, the political elite redirects popular discontent towards them. An integration of political and economic elites across ethnicities will decrease the likelihood of popular violence.

Empirical work at the intersection of ethnicity, inequality and conflict is rich. Esteban et al. [2012] base their cross-country regressions on earlier theoretical work, whereby the intensity of conflict is predicted by ethnic polarization, fractionalization and the Greenberg-Gini index, weighted by linguistic distance between groups.

Turning the relationship between conflict and inequality around, Bircan et al. [2017] construct a panel from 1960 to 2014 and find that inequality across all ethnic groups increases in the aftermath of conflicts. Inequality peaks on average after 5 years and reaches pre-war levels a decade after, brought about by adjustments in redistributive policies.

Østby [2008] and Cederman et al. [2015] provide evidence how horizontal inequality, relative differences in socio-economic group characteristics, can predict the onset of conflict. Most recently, Huber and Mayoral [2018] replicate these studies and question the robustness of the positive association of horizontal inequality and the onset of conflict. Instead, they lay their focus on the correlation of inequality within ethnic groups and the intensity of conflict in their panel based on individual survey data. This speaks in support of Esteban and Ray [2011]’s formal argument that ingroup inequality in particular is able to sustain costly conflicts.

Spatial segregation of ethnic groups can coexist with unequal socio-economic outcomes. Corvalan and Vargas [2015] demonstrate in a cross-section of 91 countries how national segregation indices predict the probability of conflict.

Conflict observers and scholars of the Kyrgyz conflict have written extensively the economic grievances between Kyrgyz majority and Uzbeks as the largest minority [Solvang and Neistat, 2010, Bond and Koch, 2010]. A common perception

in Kyrgyzstan states that Uzbeks are economically in general better off than Kyrgyz. These perceptions seem to be rooted in ethnic cultural traditions, where Kyrgyz were historically nomadic pastoralists and Uzbeks sedentary agriculturalists and traders [Bond and Koch, 2010]. Esenaliev and Steiner [2014] test this common perception with household data and find rather on the contrary that per capita expenditures are slightly higher for Kyrgyz than for Uzbeks. Their Oaxaca-Blinder decomposition reveals that the gap is driven in particular by rural households and lower education among Uzbeks.

### III. Background of 2010 conflict

The Ferghana Valley situated around the border triangle of Kyrgyzstan, Uzbekistan and Tajikistan, has historically been a place of cultural and linguistic diversity. Nowadays in the Kyrgyz part of the valley, ethnic Uzbeks constitute the second largest ethnic group in the cities of Jalalabad (40%), Osh (47%), Uzgen (90%), and in the Aravan district (60%) (Census 2009).

Historians describe the Soviet Union's system of political rule as ethnofederalism. An ethnic group was supposed to have one single homeland, the so called *rodina* ruled by local coethnic elites [Fumagalli, 2007b]. As a result, large ethnic Uzbek groups living outside of Uzbekistan in nowadays Kyrgyzstan were politically underrepresented and did not enjoy any form of political autonomy. With the demise of the Soviet Union and its institutional coercion and control, Kyrgyzstan as one of the ethnically most heterogeneous former Soviet states was left to itself to form its own sovereign state. The Uzbek communities in Southern Kyrgyzstan have since then been struggling to define their position between a newly drawn national border to their South and young transitioning institutions in Kyrgyzstan's Northern capital in Bishkek [Fumagalli, 2007b].

With the disintegration of the Soviet Union, there have been two major violent conflicts between Kyrgyz and Uzbeks in the southern regions of Kyrgyzstan. The first episode took place in June 1990, triggered by struggles over political power, increased social disparities, high unemployment rates, and disputes over land distribution, as scholars of the conflict claimed [Tishkov, 1995, Solvang and Neistat, 2010]. This violent episode took 170 lives and more than 5,000 were injured in shootings, fights and burnings.

Uzbeks protested over their underrepresentation in the public and political sphere, while Kyrgyz were dissatisfied with their economic situation and land shortages. The violence was finally halted by army troops that were employed in the conflict region. The perpetrators of violent attacks were prosecuted. Since the 1990 episode of violence, communities with a high percentage of Uzbeks have been potential conflict areas [Fumagalli, 2007b], and disputes over land and water distribution are increasingly reported to have an ethnic dimension [Fumagalli, 2007a,b, Bond and Koch, 2010, Melvin, 2011].

The second major inter-ethnic clashes between Uzbeks and Kyrgyz took place in spring 2010. Observers of the conflict describe the context as follows: The global

financial crisis in 2009 created pressure on the Kyrgyz economy, with remittances from Russia declining [Melvin, 2011]. People in Kyrgyzstan were increasingly dissatisfied with high corruption, increased energy tariffs, media surveillance, and nepotism. At the same time, President Bakiyev’s government increasingly persecuted influential opposition leaders and journalists [Solvang and Neistat, 2010]. In April 2010, violence erupted in the city of Talas and in the capital city of Bishkek. The center of the tension then shifted towards southern Kyrgyzstan after Bakiyev left Bishkek for his hometown Jalalabad, and an interim government was established. While Uzbeks asked for more political representation in the government and the recognition of the Uzbek language, the new draft constitution from May 2010 did not address these points [Solvang and Neistat, 2010]. Kyrgyz gangs clashed with ethnic Uzbeks gangs between June 10 and June 14, 2010. Information and rumors about the inter-ethnic clashes spread rapidly to other oblasts and cities, and the number of violent attacks further increased [Solvang and Neistat, 2010]. According to anecdotal evidence, property of Uzbek households was disproportionately attacked and more Uzbeks relative to Kyrgyz were arrested [Melvin, 2011, Solvang and Neistat, 2010].

UN sources conclude that more than 400 people were killed (the majority of them Uzbeks), 2500 people were injured, approximately 75,000 fled to neighboring Uzbekistan and 300,000 were internally displaced [WHO, 2010, UNHCR, 2010]. The Kyrgyz authorities did not release an ethnic breakdown of deaths. Approximately 2,800 mostly private buildings were damaged or totally destroyed in the cities of Osh, Jalalabad, and Bazar-Kurgan [UNITAR and UNOSAT, 2010]. Against this background we test how ethnic inequality relates to victimization.

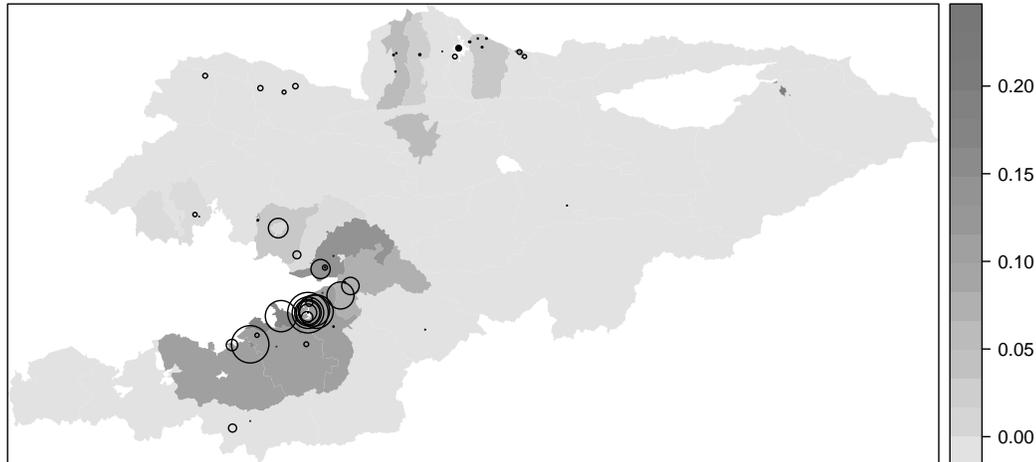
## IV. Data and Methodology

### A. Displacement data

Our main source of data is the 2010 wave of the Life in Kyrgyzstan (LiK) study collected 3 to 6 months after the violent conflict in June [Brück et al., 2014]. Kyrgyzstan is organised administratively into 9 oblasts including the cities of Osh and Bishkek and oblasts further into 51 raions. We make use of the fact that LiK communities were sampled based on the 2009 Census to merge it back with Census data [Census, 2009]. Our main outcome of interest is the displacement experience of households and individuals during the conflict.

Using the LiK study our estimate of the displaced and returned population during the conflict is approximately 2.94% of the whole population or 157,562 individuals (with the 2009 Census as base population). The estimate compares to 200,000 estimated returnees reported by the UNHCR at the end of 2010 [UNHCR, 2010]. Our survey indicates that 41.15% of the temporarily displaced were Kyrgyz (1.59% of Kyrgyz population) and 54.1% were Uzbeks (11.38% of the Uzbek population). We complement our data with geocoded information on violent incidents from the Uppsala Conflict Data Program [Sundberg and Melander,

FIGURE 1. MAP OF LOCAL FORCED DISPLACEMENT AND HORIZONTAL INEQUALITY



*Note:* **Grey shading:** The 51 raions are colored according to their value on the horizontal inequality index. **Black circles:** The diameter of the circles increases in the fraction of temporary displaced in each of the survey communities.

*Source:* Life in Kyrgyzstan (LiK) study 2010 and the 2009 Census of the Statistical Committee of the Kyrgyz republic.

2013]. Figure 1 shows a map of the spatial distribution of displacement and outbursts of violence. Violence and displacement is concentrated in the South around the urban agglomerations of Osh and Jalal-Abad, but not exclusively, as some reported displacement in the North of the country shows.

The form of displacement was different for ethnic Kyrgyz and Uzbeks. As Table 1 illustrates, Kyrgyz displacement was predominantly internal with 72% of displaced residing elsewhere in Kyrgyzstan and 26.7% in the same village but with relatives and friends. Displaced ethnic Uzbeks were most likely to stay with friends and relatives in their village 46%. Around 27.4% stayed in IDP camps within Kyrgyzstan, 18.6% left for Uzbekistan. The fraction of refugees to Uzbekistan is likely to be higher, as our survey only encompasses returnees.

### *B. Measures of local ethnic inequality*

As a first step to explore the link between displacement, ethnicity and inequality we construct community-level measurements of multiple indices. Our focus lies on the local socio-economic disparities between ethnic groups. With 2009 Census data we are able to construct a pre-conflict index measuring the inequality between ethnic Kyrgyz and Uzbeks in terms of secondary education at the community level. We follow Østby [2008] by defining our measure of horizontal

TABLE 1—FORCED DISPLACEMENT BY ETHNICITY

Where did you stay most of the time during the absence?	Ethnic Kyrgyz (%)	Ethnic Uzbek (%)	Total (%)
In the same town/village with friends/family (IDP)	26.74	46.02	37.69
Elsewhere in kyrgyzstan with friends/family (IDP)	72.09	5.31	34.17
Displacement/ camp within kyrgyzstan (IDP)	0.00	27.43	15.58
Uzbekistan (Refugee)	0.00	18.58	10.55
Others	1.16	2.65	2.01
Total	100.00	100.00	100.00

*Source:* Life in Kyrgyzstan Study (2010)

inequality in equation 1, with  $s_{ky,j}$  as the share of secondary educated ethnic Kyrgyz and  $s_{uz,j}$  of ethnic Uzbeks in community  $j$ .

$$(1) \quad HI_j = 1 - \exp(-|\ln(s_{ky,j}/s_{uz,j})|).$$

The index varies between 0 for communities with equal secondary education shares of both groups and 1 for allocations where everyone is secondary educated in one group and no one in the other. The measure is indifferent to which group receives the higher share.<sup>1</sup> On the oblast-level, the index ranges from 0 in the Naryn oblast to 0.23 in the Osh City oblast.

We use secondary education as our measure of socioeconomic inequality due to several reasons: First, education levels are high in Kyrgyzstan [Brück and Esenaliev, 2018]. Second, we can use our post-conflict survey, as acquired education levels are invariable. And third, we assume that education outcomes proxy other unobserved characteristics such as status, socio-economic class, aspirations etc. We include, moreover, measures of vertical inequality. We use our survey data to compute Gini indices of years in schooling for each community. We repeat this for only Kyrgyz and Uzbeks individuals and obtain three different measures at community level: Educational inequality across the whole community population, within the Kyrgyz majority and within the Uzbek minority.<sup>2</sup> Moreover, we employ a measure of ethnic polarization, as used by Reynal-Querol and Montalvo [2005], where  $\pi_{r,j}$  represents the share of ethnicity  $r$  in community  $j$  in equation 2. It ranges for oblasts from 0.07 (almost no diversity), over medium values of 0.446 in Djalal-Ab (one majority group, some minorities) to 0.968 in Osh City oblast (almost equal shares for Uzbeks and Kyrgyz).

<sup>1</sup>Our HI index does not account for any differences in group size. This can lead to extreme outcomes for instance if only a single Uzbek household exists in a community with an outlying educational attainment. All reported results are robust to computing HIs with different Uzbek group size thresholds of 2%, 5% and 10% of the community population for which Uzbeks are considered or otherwise coded as 0.

<sup>2</sup>We impute the national Gini for communities without an Uzbek or Kyrgyz population respectively.

$$(2) \quad RQ_j = 1 - \sum_r^m \left( \frac{1/2 - \pi_{r,j}}{1/2} \right)^2 * \pi_{r,j}$$

Our work relates to Esenaliev and Steiner [2014], who systematically measure differentials in welfare between both ethnic groups. They find that Kyrgyz have a slightly higher level of expenditure in urban areas combined with higher educational achievements. Table 2 shows the largest differences in Uzbek and Kyrgyz education in the HI index in the Southern regions Djalal-Abad, Batken, Osh and Osh City. Figure 1 shows at a more granular level for communities, averages at the oblast level still underestimate the educational disparities that exist between both ethnic groups. Assessing villages and communities, they reveal a larger rift between both ethnic groups as the national distribution would suggest.

TABLE 2—MEANS BY OBLAST

	<i>Issyk-Kul</i>	<i>Djalal-Abad</i>	<i>Naryn</i>	<i>Batken</i>	<i>Osh</i>	<i>Talas</i>	<i>Chui</i>	<i>Bishkek</i>	<i>Osh City</i>
Ethnic Polarization (index, 0-1)	0.467	0.451	0.065	0.385	0.237	0.278	0.834	0.855	0.968
Kyrgyz secondary education (%)	0.536	0.625	0.579	0.656	0.646	0.596	0.560	0.690	0.679
Uzbeks secondary education (%)	0.563	0.608	0.711	0.662	0.649	0.688	0.622	0.677	0.520
Multi-group HI education (index, 0-1)	0.034	0.032	0.005	0.014	0.029	0.101	0.073	0.040	0.126
Uzb-Kyr HI education (index, 0-1)	0.018	0.072	0.000	0.067	0.091	0.000	0.031	0.006	0.233
Gini education across groups (index, 0-1)	0.103	0.113	0.078	0.080	0.104	0.090	0.125	0.113	0.115
Gini education within Uzbeks (index, 0-1)	0.135	0.124	0.126	0.127	0.116	0.108	0.123	0.089	0.113
Gini education within Kyrgyz (index, 0-1)	0.137	0.143	0.115	0.111	0.143	0.126	0.145	0.131	0.114
Share forced displaced	0.000	0.032	0.000	0.039	0.031	0.000	0.003	0.001	0.256

*Note:* Kyrgyzstan is organized administratively into 9 oblasts and 51 raions.

*Source:* Life in Kyrgyzstan (LiK) study 2010 and the 2009 Census of the Statistical Committee of the Kyrgyz republic.

### C. Estimation strategy

Besides ordinary least squares, we employ a generalised linear model with logit-link for our sample of 120 communities. This reflects the nonlinear nature of the local displacement intensity, as defined as the share of displaced individuals from the community population. Besides our main variables of interest, horizontal and vertical inequalities and polarization, we include a battery of (in the short-term) time-invariant community characteristics: the distance to the Uzbek border, the fraction of individuals born in the community, a rural/urban dummy and a major industry dummy. Community population and employment were taken from the 2009 Census. We control for the level of violence with the geographical distance to localities of fighting, drawing on UCDP data.

Our identification strategy for the coefficients of our regression is based on simple between-variation across communities. Given potential endogeneity such as omitted variables or simultaneity, our regression coefficients should be not be read through the lens of econometric causality but as correlations.

## V. Results

### A. Community cross-section

Our basic regression results in Table 3 demonstrate a sizeable and significant correlation between local displacement intensity and horizontal inequalities (HIs). Moving from the first decile of our HI index with value 0 to the highest decile at 0.23 is associated with an increase of 9.29%-points in the displaced local population. Inequality seems to matter twofold, horizontally between ethnic groups and vertically within the whole community's population (across all ethnicities).

Ethnic polarization is not significantly correlated with displacement, which suggests that the ethnic composition of Kyrgyzstan's communities per se does not seem to drive the flight of people during the conflict. In other words, simply the presence of a sizeable Uzbek minority is not enough for observing high displacement during the conflict. Our other covariates obtain expected signs and magnitudes.

We test the robustness of the correlation between horizontal inequality and displacement in specification C by looking at a horizontal multi ethnic group inequality index in equation 3 we borrow from Tadjoeeddin et al. [2003]. We include all ethnic groups prevalent in Kyrgyzstan such as Russians, Dungans, Uigurs, Tajiks, Kazakhs and Other. The index increases whenever an ethnicity's average educational attainment drifts away from the community average. The coefficient of the multi group HI is not significant, which gives support to the narrative that clashes were predominantly between ethnic Kyrgyz and Uzbeks groups.

TABLE 3—FORCED DISPLACEMENT ACROSS COMMUNITIES

	A (OLS) b/se	B (GLM) b/se	C (GLM) b/se
Distance nearest violence (10kms)	.0019* (.0011)	.003** (.0013)	-.000091 (.0016)
Distance uzbek border (10kms)	-.0026* (.0014)	-.0047*** (.0016)	-.0047** (.0021)
Total population (1000, 2009)	.00041** (.00016)	.00013 (.00012)	.00019 (.00015)
Share born in community (%)	-.051 (.067)	-.051 (.035)	-.05 (.05)
Unemployment (%)	.27 (.2)	.38*** (.13)	.3 (.19)
Urban (yes/no)	.062** (.03)	.029 (.02)	.038 (.035)
Major industry (yes/no)	.021 (.018)	.016 (.018)	.02 (.03)
Ethnic Polarization (index, 0-1)	-.04 (.03)	-.038 (.028)	-.009 (.023)
Uzb-Kyr HI education (index, 0-1)	.6*** (.19)	.36*** (.087)	
Gini education across groups (index, 0-1)	.21 (.3)	.4* (.21)	-.035 (.31)
Gini education within Uzbeks (index, 0-1)	.15 (.22)	.017 (.14)	.11 (.22)
Gini education within Kyrgyz (index, 0-1)	.023 (.24)	-.037 (.15)	.24 (.25)
Multi-group HI education (index, 0-1)			.13 (.11)
Constant	-.13 (.1)		
Observations	120	120	120

*Note:* Fraction of displaced population as dependent variable. Average Marginal Effects reported for generalised linear model. Distance to nearest violence defined by distance of community to reported casualties.

\* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01. Standard errors in parentheses.

$$(3) \quad GCOV_j = \frac{1}{\bar{y}_j} \left( \sum_e^E p_{e,j} (y_{e,j} - \bar{y}_j)^2 \right)^{1/2}$$

A strand of literature has looked at spatial segregation and how by deterring mutual trust and social capital across ethnic group, it might incite conflicts. Corvalan and Vargas [2015] use national segregation indices in a cross-section of 91 countries to predict the intensity of conflict. In line with this work, we subsequently define a geographical measure of segregation for each raion  $r$  in equation 4, where  $\bar{n}_{e,r}$  are population shares of ethnicity  $e$  on raion-level  $r$ ,  $n_{j,e,r}$  are population shares of ethnicity  $e$  on community-level  $j$ .<sup>3</sup>

<sup>3</sup>We are forced to aggregate to the raion-level, as we cannot geolocate households within communities.

$$(4) \quad S_r = \sum_j^J \sum_e^E t_{j,r} \frac{(n_{j,e,r} - \bar{n}_{e,r})^2}{\bar{n}_{e,r}}$$

Our index captures geographical segregation between ethnic Uzbeks and Kyrgyz within 51 raions. Segregation does not lower the magnitude or significance of our HI index.

TABLE 4—FORCED DISPLACEMENT ACROSS COMMUNITIES

	A b/se	B b/se
Ethnic Polarization (index, 0-1)	-.059* (.0325)	-.0598* (.0331)
Education inequality (Gini)	.0672 (.403)	-.102 (.505)
Uzb-Kyr HI education (index, 0-1)	.42*** (.142)	.463*** (.154)
Segregation (index, 0-1)		-.0327 (.0361)
Controls	Yes	Yes
N	51	51

Note: Average marginal effects from generalised linear model with logit link with fraction of displaced population as dependent variable. Control variables as in previous section as raion means. Significance levels are \* 0.10 \*\* 0.05 \*\*\* 0.01.

### B. Individual-level regressions

This section deconstructs the aggregate measures of interethnic inequality and displacement. Given a level of inequality at the district level, we study who along the ethnic inequality distribution was likely to be displaced. Henceforth, we estimate a linear probability model of the individual decision to flee during the conflict on individual positions in the inequality distribution. We define vertical inequality (within ethnicity) with a dummy indicating whether an individual's education was above a specific point ( $m_e$  a mean or percentile) derived from her ethnic group's educational attainment distribution.

Analogously, we define horizontal inequality (for ethnic Kyrgyz and Uzbeks) with a dummy for individuals with education levels above specific thresholds on the other group's distribution. For example an ethnic Uzbek's educational attainment can be above the raion's average of Uzbeks, but below the raion's average of Kyrgyz. She would therefore be "advantaged" vis à vis her own ethnic group, but "disadvantaged" vis à vis the other ethnic group.

We compute both measures with means at the level of the whole country and

raions in Table 5 and percentiles at the raion-level in Table 6.<sup>4</sup> Moreover, we include a battery of individual characteristics and raion or community dummies to capture unobserved heterogeneity at the raion and community level.

TABLE 5—FORCED DISPLACEMENT AND INDIVIDUAL CHARACTERISTICS

	A		B	
	b	se	b	se
Female (No=0, Yes=1)	-.0067**	(.0034)	-.0069**	(.0034)
Age 0-15 (years)	.022	(.015)	.022	(.015)
Age 16-45 (years)	.022***	(.0067)	.023***	(.0067)
Age 46-99 (years)	.0077	(.0064)	.0083	(.0065)
Has children (No=0, Yes=1)	-.00019	(.0011)	-.00031	(.0011)
Is married (No=0, Yes=1)	.0031	(.005)	.0031	(.005)
Father secondary education (No=0, Yes=1)	-.0042	(.0043)	-.0043	(.0043)
Self employed (No=0, Yes=1)	.004	(.0048)	.0031	(.0047)
Land owner (No=0, Yes=1)	-.0021	(.0042)	-.0023	(.0042)
Born in community (No=0, Yes=1)	-.017***	(.0049)	-.017***	(.0049)
Education(completed years)	.00023	(.00055)	-.00056	(.00057)
Uzbek (No=0, Yes=1)	.034***	(.011)	.055***	(.015)
Kyrgyz (No=0, Yes=1)	.0018	(.0033)	.006	(.0057)
VI: Uzbek * $\mathbb{1}(m_{uz}(edu) < edu)$			-.072**	(.028)
VI: Kyrgyz * $\mathbb{1}(m_{ky}(edu) < edu)$			-.003	(.0054)
HI: Uzbek * $\mathbb{1}(m_{ky}(edu) < edu)$			.034	(.026)
HI: Kyrgyz * $\mathbb{1}(m_{uz}(edu) < edu)$			-.0034	(.0075)
Constant	-.0075	(.013)	.0027	(.012)
Raion Dummies	Yes		Yes	
N	8057		8057	

*Note:* Linear probability models with binary outcome equal to 1 if individual temporarily displaced. Ethnicity \*  $\mathbb{1}(m(edu) < edu)$  interacts ethnicity with a dummy indicating an individual attainment above the Kyrgyz or Uzbek local raion average. Horizontal inequality combines dummy and distribution of different ethnicities, vertical inequality within ethnicity.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors in parentheses.

Table 5 shows our regression results regressing the temporary displacement dummy in all our specifications on measures of inequality and a battery of short-term-invariant individual and household characteristics. All specifications include dummy variables for all 51 raions to control for unobserved characteristics at the administrative level of raions. By doing so, we attempt to isolate an individual's position in the interethnic inequality distribution from potentially correlated district-level characteristics such as asymmetric ethnic political representation, favoritism, local institutions, etc.

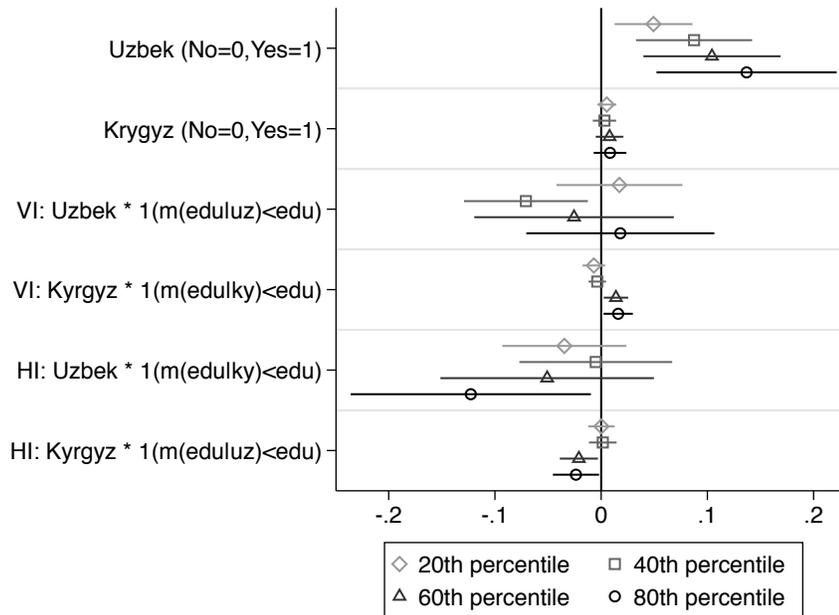
Specification A includes simple dummy variables for ethnicity, and further controls for gender, age and other observable traits. The estimates reveal that self-identifying as ethnic Uzbek is associated with a probability of displacement by 3.4%-points higher than other minorities (Russians, Uigurs, etc.), given our set

<sup>4</sup>As only 29.7% of communities are ethnically mixed with Uzbeks and Kyrgyz, we do not employ dummy thresholds at the community-level. With raion thresholds, individuals living in 34% of the raions without both groups are never above the other group (i.e.  $\mathbb{1}(m_e(edu) < edu) = 0$ ).

of observable controls. To understand who along the inequality distribution is affected, Specification B interacts ethnicity with indicator dummies for education levels above raion means of either Kyrgyz or Uzbeks. We find a significant decrease in the probability to be displaced for Uzbeks with education levels above the average of their coethnic peers living in the same district. Our dummy variable for Uzbeks individuals horizontally advantaged over Kyrgyz remains insignificant.

In the next step, we recompute the individual dummies with quintile thresholds in the education distribution conditional on both ethnicities for each raion. This implies that an individual with educational attainment above the 20th (to 80th) percentile in the local raion-level distribution of Uzbeks or Kyrgyz is coded with 1. Figure 2 plots the estimated coefficients for these thresholds from Table 6.

FIGURE 2. COEFFICIENT PLOT WITH MULTIPLE DUMMY THRESHOLDS



*Note:* Coefficients are taken from linear models of the probability of individual displacement. Ethnic education interactions use percentiles of education distribution by ethnicity at level of raion. Vertical inequality interacts the ethnic dummy with an indicator of education above specific quintiles of the same ethnicity. Horizontal inequality indicates individuals above education quintiles of the other ethnicity in the same raion. 95% confidence intervals plotted around point estimate.

We observe that the significantly lower probability for Uzbeks above Uzbek raion means in Table 5 is not driven by the most educated Uzbeks but rather by a group between the 40th and 60th percentiles. Highly educated ethnic Uzbeks above the local 80th percentile of Kyrgyz have significantly lower probabilities to be displaced. Coefficients of Kyrgyz move downwards for increasing Uzbek

TABLE 6—FORCED DISPLACEMENT AND INDIVIDUAL CHARACTERISTICS

	A b/se	B b/se	C b/se	D b/se
Constant	.00011 (.013)	.0023 (.013)	-.000057 (.014)	-.00079 (.013)
Education(completed years)	-.00039 (.0006)	-.00065 (.00054)	-.00018 (.00067)	-.00017 (.00058)
Uzbek (No=0,Yes=1)	.049*** (.019)	.087*** (.028)	.1*** (.033)	.14*** (.043)
Kyrgyz (No=0,Yes=1)	.0053 (.0046)	.0031 (.0056)	.0079 (.0066)	.0084 (.0079)
Percentile $m_e(educ)$	Raion 20	Raion 40	Raion 60	Raion 80
VI: Uzbek * $\mathbb{1}(m_{uz}(educ) < edu)$	.017 (.03)	-.071** (.03)	-.026 (.048)	.018 (.045)
VI: Kyrgyz * $\mathbb{1}(m_{ky}(educ) < edu)$	-.0068 (.0054)	-.0036 (.0042)	.014** (.0059)	.016** (.0071)
HI: Uzbek * $\mathbb{1}(m_{ky}(educ) < edu)$	-.035 (.03)	-.0051 (.037)	-.051 (.051)	-.12** (.058)
HI: Kyrgyz * $\mathbb{1}(m_{uz}(educ) < edu)$	.00027 (.0063)	.0016 (.0066)	-.021** (.0091)	-.024** (.011)
Controls	Yes	Yes	Yes	Yes
Raion Dummies	Yes	Yes	Yes	Yes
N	8057	8057	8057	8057

*Note:* Linear models of the probability of individual displacement. Ethnic education interactions use percentiles of education distribution by ethnicity at level of raion. Vertical inequality interacts the ethnic dummy with an indicator of education above specific quintiles of the same ethnicity. Horizontal inequality indicates individuals above education quintiles of the other ethnicity in the same raion. 95% confidence intervals plotted around point estimate.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors in parentheses.

percentiles and upwards for Kyrgyz percentiles.

To summarise our findings, socio-economic advantage seems to increase displacement probabilities compared to members of the same ethnicity and decrease compared to the other ethnicity. The most horizontally advantaged individuals of both ethnicities had significantly lower probabilities to leave during the conflict. Concerning vertical advantage in education, Uzbeks have higher displacement probabilities in both tails of the within ethnicity distribution of education. Kyrgyz have moderately higher probabilities only in the upper percentiles. The situation for the highly educated seems to be such that vertical inequality encourages and horizontal inequality discourages displacement.

As last step, we split our outcome in Table 7 into internal displacement in column A and B and refugees in column C and D. Most of our previous result are driven by internal displacement as column B shows. Internal displacement is thus associated with both Kyrgyz and Uzbeks compared to other ethnicities, but cross-border displacement is only associated with Uzbeks. Laying our focus on vertical and horizontal inequalities in column D, Uzbek refugee status was not systematically related to educational inequalities.

TABLE 7—FORCED DISPLACEMENT BY TYPE

	A IDPs b/se	B IDPs b/se	C Refugees b/se	D Refugees b/se
Education(completed years)	.00026 (.00053)	-.00071 (.00054)	-.000095 (.00015)	.0002 (.00015)
Uzbek (No=0,Yes=1)	.021** (.0095)	.047*** (.013)	.011** (.0052)	-.00053 (.0073)
Kyrgyz (No=0,Yes=1)	.0048* (.0025)	.0099* (.0051)	-.0028 (.0022)	-.0041* (.0025)
VI: Uzbek * $\mathbb{1}(m_{uz}(edu) < edu)$		-.075*** (.027)		.0062 (.012)
VI: Kyrgyz * $\mathbb{1}(m_{ky}(edu) < edu)$		-.0046 (.0051)		.0012 (.0016)
HI: Uzbek * $\mathbb{1}(m_{ky}(edu) < edu)$		.028 (.024)		.011 (.011)
HI: Kyrgyz * $\mathbb{1}(m_{uz}(edu) < edu)$		-.0031 (.0073)		.00068 (.002)
Constant	-.0098 (.012)	.0024 (.011)	.0043 (.0048)	.00065 (.0047)
Controls	Yes	Yes	Yes	Yes
Raion Dummies	Yes	Yes	Yes	Yes
N	8083	8083	8083	8083

*Note:* Linear probability models with binary outcome equal to 1 if individual was internally displaced (IDP) or fled across the border (refugee). Ethnicity \*  $\mathbb{1}(m(edu) < edu)$  interacts ethnicity with a dummy indicating an individual attainment above the Kyrgyz or Uzbek local raion average. Horizontal inequality combines dummy and distribution of different ethnicities, vertical inequality within ethnicity.

\*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors in parentheses.

## VI. Conclusion

We study how inequality and ethnicity relate to victimization during a recent violent conflict in Kyrgyzstan. Community-level regressions demonstrate that, controlling for the level of violence, higher interethnic inequality correlates with more displacement. The correlation is robust to indices of ethnic polarization and spatial segregation. We identify the position of individuals in the education distributions of the two largest ethnic groups and find statistical evidence for patterns of both horizontal and vertical inequalities in victimization.

Our decomposition into individual regressions reveals that socio-economic advantage increases the likelihood of victimisation if compared to one's own ethnicity and decreases if compared to the other ethnic group. We believe that our research contributes to a more comprehensive understanding of the fabric of inequality underlying most conflicts. Future research should aim at exogenous shifts in the distribution of welfare measures to study the causal effect of inequality on conflict outcomes.

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