Introduction and motivation	Empirical strategy	Results	Conclusion
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The Human Capital Effects of Hosting Refugees: Evidence from Kagera

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OVERVIEW

- Refugees influx has an impact on human capital (schooling, child labor, youth employment):
- Availability of schools
- increase in food prices thus increase in agricultural labour demand
- competition for wage labor (skilled/unskilled)
- changes in households wealth
- Policies for human capital development in host countries?

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MOTIVATION

One of the key consequences of civil conflict is forced migration (priority in the 2030 Agenda for Sustainable Development)

The United Nations Population Division (2015):

- ► total global stock of 244 million international migrants
- ≈ 65.3 million are forced migrants
- ▶ \approx 21 million are refugees (half of whom are children < 18)

Tanzania in 1993-1998: 1 million refugees

- ► School attendance age 6-17 (71.3%, 28.7% if in work) (ILO, 2014)
- ► Incidence of child labor age 6-17 (28.8%, 35% in rural areas) (ILO, 2014)
- ▶ Incidence of hazardous child labor age 6-17 \approx 21.5% (ILO 2014)
- ► Youth unemployment age 5-24 ≈ 5.5% ILO (2015)

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CONTRIBUTION

 First study to investigate the impact of forced migration on human capital though channels of child labor and schooling

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 Drawing upon a natural experiment, finding the causal impact of refugee arrival on natives

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RESEARCH OUTLINE

Question: Estimate the human capital consequences of hosting refugees in Tanzania (Kagera region)

- Short/long term impact of the refugees influx on:
 - Child labor
 - School attendance
- ► Which mechanisms?
 - Schooling
 - Agriculture demand
 - ▶ ..?

RELEVANT LITERATURE

Voluntary migration in host countries:

- Wide range of immigrant outcomes associated with their economic assimilation to the host region (Borjas, 1987; Hansen and Lofstrom, 2004; Bolesta, 2006; Bevelander and Lundh, 2007); mixed results
- Labor market performance of native populations (Chiswick, 1989; Card, 1990; Card and Altonji, 1991; Lalonde and Topel, 1991; Pischke and Velling, 1994; Borjas, Freeman and Katz, 1997; Friedberg, 2001; Fairlie and Meyer, 2003); mixed results

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RELEVANT LITERATURE

Forced migration in host countries:

- Labor markets: Ruiz and Silva (2015) find that the forced migration shock significantly decreases the probability of being an employee outside the household
- Consumption of hosts: Maystadt (2012): on average positive impact. Increase in agricultural labor productivity and income diversification among the poor. Alix-Garcia and Saah (2008) more volatile prices of agricultural commodities, positive effects in non-food consumption

RELEVANT LITERATURE

Forced migration impact (due to conflict):

 Baez (2011) finds that childhood exposure to this massive arrival of refugees in Kagera reduces, schooling by 0.2 years (7.1%) and literacy by 7 percentage points (8.6%) and undermines child health.

Impact of forced migration on human capital in host countries has still to be explored

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CIVIL CONFLICT IN BURUNDI AND RWANDA

- Major ethnic civil conflicts erupted in Burundi and Rwanda during 1993 and 1994, respectively
- ► Hundreds of thousands of casualties in just a few months.
- During the 1993-1998 period, over 1 million people left these two countries and sought refuge in Western Tanzania.
- In some regions of Tanzania, refugees outnumbered natives five to one (Whitaker 2002).

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• Similar language as natives and access to labor markets.

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REFUGEE INFLUX



Fig. 1. Total number of refugees hosted by Tanzania, 1991-2004.

KAGERA, TANZANIA

- Kagera is a region of Tanzania which borders Rwanda and Burundi - mainly agricultural.
- It became one of the main destinations for refugees in Tanzania due to its geographic location
- Geographical characteristics, in addition to differences in distance to the borders to Rwanda and Burundi, resulted in a natural experiment in which an area (i.e., West) was much more affected by the refugee inflow in comparison to the other area (i.e., East).

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KAGERA'S GEOGRAPHY



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Data

Kagera Health and Development Survey (KHDS):

- Panel data (1991,1994, 2004, 2010)
- Information about households in different areas of Kagera before and after the forced migration shock
- Using 2004 data (about 10 years after the shock) allows us to explore the impact of hosting refugees on human capital also in the long run
- KHDS interviewed 915 households and their members up to four times between fall 1991 and January 1994. Households were randomly selected from 51 communities in the Kagera region
- ► an excellent recontact rate of 93%.



SCHOOL ENROLMENT RATES



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EMPIRICAL SPECIFICATION

$$Y_{it} = \alpha_1 + \alpha_2 \delta_i + \alpha_3 \gamma_w + \alpha_4 t + \alpha_5 D_{it} + \alpha_6 X_{it} + u_{it}$$
(1)

- ➤ Y_{it} is the binary outcome of interest for individual i at time t (child/youth being in work, school enrollment).
- ► δ_i is the individual fixed effect (available only for the short term panel 1991-1994).
- γ_w represents the ward dummies, t is the time dummy (2010 = 1, that is, the after "shock" period).
- ► *D*_{*it*}: is the measure of the intensity of the forced migration shock and is the log of the inverse of the distance to the border (for the first period this variable is set to zero)
- ► X_{it} are the individual, household and regional control variables
- u_{it} error term

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IDENTIFICATION STRATEGY

The location of forced migrants was affected by a series of geographical barriers and logistical decisions.

Using the heterogeneity in terms of intensity of refugee shock in different communities proxied by the distance to the border enables us to causally estimate the impact of refugee arrival on child outcomes.

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SHORT TERM- ACROSS AGE

	(1)	(2)
VARIABLES	child labor ages 7.13	child labor ages14_17
Refugee Intensity	-0.090***	0.369***
· ·	(0.032)	(0.021)
Observations	877	249
R^2	0.371	0.997
Number of hhid	764	235
Household F.E.	yes	yes

Notes: Cluster robust standard errors in parentheses, the cluster is the variable defined as "cluster" in the KHDS. *** p < 0.01, ** p < 0.05, * p < 0.1The dependent variables are variables defined at the child level. Refugee intensity is measured at the household

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SHORT TERM- ACROSS TYPE OF WORK

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	W. employ.	W. employ.	Agriculture	Agriculture	selfemp	selfemp
	5_13	14_17	5_13	14_17	5_13	14_17
Refugee Intensity	-0.007		-0.087***	0.204***	-0.001	-0.092*
Observations	877	249	877	249	877	249
R^2	0.054		0.380	0.701	0.227	0.885
Number of hhid	764	235	764	235	764	235

Notes: Cluster robust standard errors in parentheses, the cluster is the variable defined as "cluster" in the KHDS. *** p < 0.01, ** p < 0.05, * p < 0.1The dependent variables are variables defined at the child level. Refugee intensity is measured at the household

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SHORT TERM-SCHOOLING ACROSS AGE

VARIABLES	(1) school enrol 7_13	(2) school enrol 14_17
Refugee Intensity	-0.038	-0.113**
Observations	877	249
R^2	0.348	0.768
Number of hhid	764	235

Notes: Cluster robust standard errors in parentheses, the cluster is the variable defined as "cluster" in the KHDS. *** p < 0.01, ** p < 0.05, * p < 0.1The dependent variables are variables defined at individual level. Refugee intensity is measured at the household

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HH EXPENDITURE-SHORT RUN

VARIABLES	(1) lHHexpPC
Refugee Intensity	0.128***
Observations	1,048
Number of H_ID	714
R-squared	0.191

Notes: Cluster robust standard errors in parentheses, the cluster is the variable defined as "cluster" in the KHDS. *** p < 0.01, ** p < 0.05, * p < 0.1The dependent variables are variables defined at household level. Refugee intensity is measured at the household

level.

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LONG TERM- ACROSS AGE 2004

VARIABLES	(1) child labor ages 7_13	(2) child labor ages 14_17 min
Refugee Intensity	0.073***	0.053***
Observations	2,865	431
R ²	0.206	0.135

Notes: Cluster robust standard errors in parentheses, the cluster is the variable defined as "cluster" in the KHDS. *** p < 0.01, ** p < 0.05, * p < 0.1The dependent variables are variables defined as the child level. Before intensity is measured at the bausehold.

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LONG TERM- ACROSS TYPE OF WORK 2004

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	employee	employee	farmwrk	farmwrk	selfemp	selfemp
	5_13	14_17	5_13	14_17	5_13	14_17
Refugee Intensity	-0.001	0.002	0.064***	0.048***	0.012*	0.013**
Observations R^2	3,194	431	3,194	431	3,194	431
	0.012	0.033	0.239	0.125	0.030	0.048

Notes: Cluster robust standard errors in parentheses, the cluster is the variable defined as "cluster" in the KHDS. *** p < 0.01, ** p < 0.05, * p < 0.1

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LONG TERM- SCHOOLING 2004

	(1)	(2)
VARIABLES	enrol 7_13	enrol 14_17
Refugee Intensity	0.009	-0.008
Observations R^2	2,865 0.077	431 0.019

Notes: Cluster robust standard errors in parentheses, the cluster is the variable defined as "cluster" in the KHDS. *** p < 0.01, ** p < 0.05, * p < 0.1

The dependent variables are variables defined at the child level. Refugee intensity is measured at the household level.

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HH EXPENDITURE-LONG RUN

VARIABLES	(1) lHHexpPC
Refugee Intensity	-0.271***
Observations	673
R ²	0.028

Notes: Cluster robust standard errors in parentheses, the cluster is the variable defined as "cluster" in the KHDS. *** p < 0.01, ** p < 0.05, * p < 0.1The dependent variables are variables defined at household level. Refugee intensity is measured at the household

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Empirical	strategy Results	Conclusion
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FOOD PRICES

	(1)	(2)
VARIABLES	non-aid food prices	non-aid food prices
VARIABLES	Burundi	Rwanda
Refugee Intensity_bu	604.114*	
	(322.109)	
Refugee Intensity_rw		799.433*
0 ,		(424.251)
Year F.E.	yes	yes
Community F.E.	yes	yes
Observations	144	144
R^2	0.507	0.513

Notes: Cluster robust standard errors in parentheses, the cluster is the variable defined as "cluster" in the KHDS. *** p < 0.01, ** p < 0.05, * p < 0.1The dependent variables are variables defined at individual level. Refugee intensity is measured at the household level.

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CONCLUSION

- ► the intense influx of refugees: Short-run:
 - decreased child labor, in particular for younger children.
 - decreased the employment of younger children in the agricultural sector, increased the employment of high school choldren

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Long-run:

- increased child labor
- The mechanism behind this shift:
 - Food prices
 - Schooling