

Impact on welfare, inequality and infrastructure : Evidence from Tanzania*

*Methodological Workshop on Measuring Impacts of Refugees and IDPs on
Host Countries and Host Communities
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* Based on Maystadt and Verwimp (2014, Winners and Losers Among a refugee-hosting population, EDCC) and Maystadt and Duranton (2014, The Development Push of Refugees)

OBJECTIVES OF THE STUDIES

- Misleading views on refugees
 - Not temporary → protracted refugee emergencies
 - Not passive → refugees bear economic functions
- Does the establishment of a refugee camp affect the local population?
Through which channels?
- What are the long-term consequences of hosting refugees?

CASE STUDY: REFUGEES IN KAGERA



REFUGEES IN KAGERA

- About 800,000 refugees in a region of about 1.5 Million people in 1995
- Unexpected in 1993 (Burundi) and 1994 (Rwanda)
- About one half of Kagera population
- Movement restrictions

Fieldwork observations and related studies

- **Good markets** → Price effects
 - $\Delta+$ demand : $\Delta+$ food prices (**Alix-Garcia and Saah 2010**)
- **Labor markets** → Wage effects
 - Decreased agricultural wages: Refugees till and harvest land
 - Increased skilled wages: Attract people from other regions
- Business boom
- Reduced transport costs
- Improved health and sanitation services

But also potentially huge negative externalities

- Environmental degradation, mainly wood collection
- Disease spread (**Baez 2011**)
- Security issue through spread of weapons

No idea about the magnitude, the distribution, and the persistency of the effect

- Winners and losers among a refugee-hosting population (Maystadt and Verwimp 2014, EDCC, MV14 hereafter)
- How a temporary shock may induce a (permanent) shift in equilibrium? With a new wave of data, could the refugee presence lead to a shift of equilibrium? (Maystadt and Duranton 2014, MD14 hereafter)

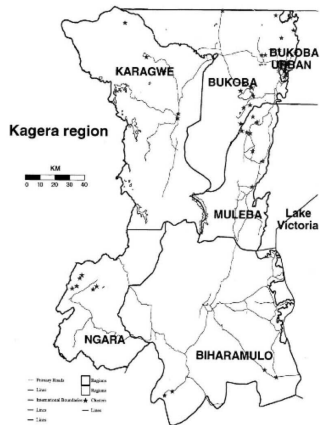
DATA

- KHDS dataset (1991, 2004 and 2010) on consumption, assets, etc
- Sample 2,770 households, 51 villages in 6 districts followed between 1991 and 2004 (MV14); multiplied to 3,314 households by 2010 (MD14)
- Outstanding exercise of tracing individuals (see De Weerd and Hirvonen 2012, De Weerd et al. 2012)
- Selecting people interviewed before 21 October 1993 and re-interviewed in 2004 and 2010 → Same households before and after refugees arrived (up to 14 years after most refugees left)
- Fieldwork: Distance to refugee camps (even those closed in 1996!) for each village

HOW TO ESTABLISH A COUNTER-FACTUAL?



Source: UNHCR Regional Spatial Analysis Lab (Nairobi) and fieldwork geographic coordinates



Source: 2004 KHDS

- Fieldwork: Distance to refugee camp and refugee population →
 $RI_{v(h),t} = \sum_{c=1}^{13} pop_c / d_{v,c}$
- Differentiated Impact (MV14) according to initial occupations given theoretical predictions

$$\begin{aligned} \text{Log} \left(\frac{C_{h,t}}{P_{v(h,t),t}} \right) &= \beta_0 + \beta_1 \log(RI_{v(h),t}) + \beta_2 Act_{h,1991} * \log(RI_{v(h),t}) \\ &+ \beta_3 Z_{h,t} + \beta_4 Q_{v(h),t} + \alpha_t + \alpha_h + \alpha_{v(t)} + \epsilon_{h,t} \end{aligned} \quad (1)$$

- Does the effect persist overtime? Comparing changes between 1991-2004 & 1991-2010 (MD14)

$$\begin{aligned} \text{Log} \left(\frac{C_{h,t}}{P_{v(h,t),t}} \right) &= \beta_0 + \beta_1 \log(RI_{v(h),t}) + \beta_2 Z_{h,t} \\ &+ \beta_3 Q_{v(h),t} + \alpha_t + \alpha_h + \alpha_{v(t)} + \epsilon_{h,t} \end{aligned} \quad (2)$$



Results (1)

WINNERS AND LOSERS (MV14)

Dep. Var.	Log($V_{h,t}$)	
	(1)	(2)
$RI_{v,t}$	0.0829** (0.0338)	0.0623* (0.0339)
Agri. Self(1991) *Log($RI_{v,t}$)		0.0079** (0.004)
NonAgri L (1991) *Log($RI_{v,t}$)		-0.0066 (0.0055)
Agri L (1991) *Log($RI_{v,t}$)		-0.0088* (0.0049)
NonAgri Self (1991) *Log($RI_{v,t}$)		-0.0179*** (0.0042)
$Z_{h,t}$	incl.	incl.
$Q_{v,t}$	incl.	incl.
α_t	incl.	incl.
α_v	incl.	incl.
α_h	incl.	incl.
Observations	4220	4220
R-squared	0.309	0.320

- On average, positive impact from refugee inflows
- Net gains unevenly distributed
 - Loser : Agricultural worker
 - Winner : Self-employed farmer
 - Discrepancy with theoretical model: self-employed in non-agricultural activities
 - Increased competition due to entry of larger-scale and more productive entrepreneurs from other regions?
- Robustness include alternative sample definition, dep. variable, treatment variable, occupation definition

Results (2)

A PERSISTENT AND POSITIVE IMPACT (MD14)

Panel A	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dep. Var.	Real consumption per equivalent adult, 1991 and 2004							
$Rl_{v,t}$	0.020 (0.022)	0.031 (0.020)	0.037* (0.020)	0.049** (0.019)	0.020 (0.019)	0.030 (0.021)	0.032* (0.018)	0.050** (0.018)
$Z_{h,t}$	No	No	No	No	Yes	Yes	Yes	Yes
$Q_{v,t}$	No	No	Yes	Yes	No	No	Yes	Yes
α_t	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
$\alpha_{v(h)}$	No	Yes	No	Yes	No	Yes	No	Yes
α_h	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5,230	5,230	5,230	5,230	5,230	5,131	5,230	5,230
R-squared	0.194	0.316	0.200	0.322	0.194	0.358	0.200	0.322
Panel B	Real consumption per equivalent adult, 1991 and 2010							
Dep. Var.	Real consumption per equivalent adult, 1991 and 2010							
$Rl_{v,t}$	0.012 (0.040)	0.064 (0.040)	0.017 (0.040)	0.085** (0.037)	0.081** (0.034)	0.115*** (0.036)	0.078** (0.033)	0.123*** (0.035)
Observations	5,788	5,788	5,788	5,788	5,788	5,788	5,788	5,788
R-squared	0.356	0.453	0.357	0.454	0.454	0.508	0.454	0.509

- **Positive impact does not fade away overtime**
- Robustness include alternative sample definition, dep. variable, treatment variable

WHY IS THE PERSISTENT IMPACT NON-TRIVIAL?

- So far, literature focuses on short-term impact through changes in factor prices (Baez 2011 is an exception)
- **But fail to explain the hysteresis effect: Increase in labor supply/demand due to refugee inflows cannot explain impact 10 years after most refugees left**
- **Shift in equilibrium (local fundamentals)**
 - **Infrastructure.** Huge investment in roads for food delivery into refugee camps
 - **Trade with neighboring countries.** Many refugees repatriated behind the borders to continue trading activities
 - **Provision of local public goods** could result from improved local revenues and public management skills.
- **Multiple equilibrium**
 - **Agglomeration economies.** Small urban areas and the resulting agglomeration economies as a legacy of the refugee presence
 - **Poverty trap.** The benefits from refugee inflows allow households to invest in more productive activities, assuming imperfect credit markets

Results (4)

REDUCED TRANSPORT COSTS IS THE MAIN DRIVER

- **Road accessibility has drastically improved following refugee inflows** (excl. or not roads rehabilitated by Tanzanian government, using buffer or distance, using new road fixed effects or not)
- **Poverty trap as a source of multiple equilibria**: Quantile regressions indicate no difference across quantiles of the consumption distribution.
- **Agglomeration economies as a source of multiple equilibria**: No impact on village population and (proxied) population density.
- **Provision of local public goods**, proxied by access (distance) to health and education, the availability of social services and NGOs, cannot explain the welfare-improving effect of refugees.
- **Trade with neighboring countries** proxied by the interaction between the distance to borders and changes in trade with neighboring countries is not affected by refugees

Caveat: Only indirect evidence against these additional channels

THREATS TO IDENTIFICATION

- Changing composition of groups
 - Attrition : (Traced) remaining households more able to adjust?
 - Include migrants reduces bias due to native displacement but migration effects (Beegle et al. 2011)
- Exogeneity
 - Quasi-natural experiment (Friedberg and Hunt 1995: 36): “Episodes where the timing and location of immigration may be politically rather than economically motivated, [...] reduces the problem of immigrants choosing location based on their labor market conditions ”
 - Possible selection by UNHCR, Ministry of Home Affairs or refugees themselves?
- Common trend assumption
 - Similar trajectory in absence of refugees?

THREATS TO IDENTIFICATION POINT TO LOWER-BOUND ESTIMATES

- Composition of groups
 - Attrition and migration rates lower in refugee-hosting areas
 - Probability to migrate negatively affected by the presence of refugees
 - Stronger results when migrants (in or outside Kagera) are excluded
- Exogeneity
 - Qualitative: Border out of control of local authorities, due to cost issue, only possible source of selection when UNHCR was not yet there, despite poor health conditions and lack of mobility of refugees
 - Refugee presence in the worst areas in terms of real Cons.PAE (and in terms of pre-growth), before refugees arrived, even when restricted to the two bordering districts
 - Controlling for the distance to the border* Δt (unobserved factors linked to borders)
- Common trend assumption
 - Placebo test: no trend (neg. and n.s.) before the refugees arrived
 - No sign of convergence

CAVEATS (CONCLUSIONS)

- Positive impact on refugee-hosting population, including in the long run, but with distributional consequences
- How to reconcile our results with Baez (2011)?
- External validity?
 - X-country analysis would not help much but geo-referenced data?
 - Literature Reviews (Mabiso et al. 2014; Verwimp and Maystadt, forthcoming)
 - Other studies needed but also systematic reviews
- Do organizational/locational/policy choices matter for the hosts?
 - Camps or not? Integration, repatriation, resettlement? Size of camps? Institutionalized interactions between refugees and hosts?
 - How to make immediate humanitarian needs compatible with long-term development in host communities?
 - Impact assessment of policies aiming at strengthening the asset-based capacity of the local hosts and in particular the poor
- Better understand contrast between objective and subjective measurements of welfare among the hosts (Kreibaum 2015)