Economic Impact of Giving Land to Refugees

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Selected paper/poster prepared for presentation at the 2018 Agricultural & Applied Economics Association Annual Meeting, Washington, D.C., August 5-7, 2018

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Overview

This paper adds to a sparse but growing literature on the economic costs and benefits of hosting refugees. We leverage the quasi-random nature of land allocation in one Ugandan refugee settlement to estimate econometrically the impact of access to land on refugee welfare, and a general equilibrium model to simulate the spillover effects on income and production in the surrounding host-country economy. The combined approaches reveal that providing refugees with agricultural land significantly improves refugee households' welfare and self-reliance, while generating positive income spillovers within a local economy consisting of the refugee settlement plus host-country households and businesses within a 15 km radius around the settlement. Host-country households benefit significantly from the income spillovers created by refugee assistance.

Background

A dramatic increase in the number of global refugees in recent years has triggered academic and policy debate on the economic implications of hosting displaced populations. Conventional wisdom holds that a large influx of refugees may create competition for scarce resources, driving up prices of local goods and negatively affecting the welfare of local populations. However, recent studies suggest that refugees and the aid they receive have the potential to create real-income spillovers for host-country population in a variety of market settings (Alloush *et al.*, 2017; Alix-Garcia *et al.*, 2017; Taylor *et al.*, 2016). Given the opportunity, refugees engage in productive and entrepreneurial activities, gaining self-reliance and creating positive spillovers for host-country businesses and households (Omata and Kaplan, 2014).

This study focuses on Uganda's unique refugee hosting policy, often touted as the most progressive and generous in the world (World Bank, 2016). Besides receiving cash or food aid from the UN agencies, refugees in Uganda enjoy freedom of movement, have access to educational resources, and perhaps most innovatively, receive parcels of cultivable land if available at the time of their assignment to a refugee settlement. Provision of cultivable land helps foster self-sustainable livelihoods for refugees by improving their productive capacity. Most refugees in Uganda are from agrarian backgrounds; thus, cultivable land is one of the most important resources enabling displaced people to participate actively in local markets. Strengthening the productive capacity of refugee households can increase economic interactions between the displaced and host communities, potentially creating larger spillover effects for both local producers and consumers. However, it also can create competition with host-country producers in local product and factor markets.

We leverage the quasi-random nature of land allocation in Rwamwanja settlement in South-west Uganda to estimate the impact of initial land endowment (provided by the Ugandan government) on household outcomes. To capture the spillover effects on local Ugandans, we estimate parameters for a general equilibrium Local Economy Wide Impact Evaluation (LEWIE) model and simulate the impact of both aid (in food and cash) and land.

Data and Methods

We implemented a comprehensive survey to a stratified random sample of refugees, local households, and businesses inside and outside of two major refugee settlements. Rwamwanja settlement, situated in the South-west and Adjumani settlement in the North.

Detailed information on individual demographics, household level production and consumption were collected over the course of two months. WFP provided a full list of the population of refugee households, which was sorted into cash and food aid recipients. A random sample was drawn from the population of each recipient type. Local households were randomly sampled from their respective village rosters. The final data set contains 1503 household surveys (612 households for Rwamwanja), split between refugee households and host-country households within a 15-kilometer radius of each settlement. Information on businesses was collected from the household survey and a targeted business survey (for those whose households' where not previously interviewed) totaling a sample of 581 businesses.

While we have data for two separate settlements, only those collected from Rwamwanja settlement are used in the primary analysis. Land allocation for refugee families at Rwamwanja settlement is based on availability at the time of arrival. Given that there is a substantial degree of churning (refugees can leave the camp freely), this creates scenario whereby initial plots allocated to refugee households are essentially random. This is not the case in Adjumani settlement, where land allocation is based on household needs and ability to utilize farmland (as judged by settlement management). Given that there maybe systematic differences in refugee characteristics over time, we perform a conditional balance test (controlling for year of arrival) on key household demographics for both settlements in Table 1A below.

Table 1A. Conditional Balance

Dependent variables as column headers	HH Size	HH head education	HH head age	Female head	Dependent Ratio	Single Mother HH
			Rwamwanja			
Land dummy	0.34	0.99*	-1.65	-0.09	-0.01	-0.03
	(0.29)	(0.58)	(1.79)	(0.06)	(0.01)	(0.05)
Allocated plot size	0.86	0.66	4.63	-0.01	0.01	-0.07
	(0.55)	(0.95)	(2.96)	(0.08)	(0.01)	(0.05)
			Adjumani			
Land dummy	0.29	-0.76*	1.65	0.09***	0.01	0.07
	(0.28)	(0.44)	(2.05)	(0.03)	(0.01)	(0.06)
Allocated plot size	-4.65	6.66***	15.72	-0.94**	-0.26***	-1.63***
	(3.78)	(2.40)	(13.16)	(0.44)	(0.04)	(0.39)

Notes: All regressions control for arrival year and geographical location dummies.

Conditional on arrival year and location, household characteristics are largely uncorrelated with the probability of receiving land upon arrival or the allocated plot size in Rwamwanja. In Adjumani settlement, we find that education, gender of the household head, households in which the primary caretaker is an adult female, as well as the number of dependents are significantly correlated with land allocation, all with the expected sign given the needs-based criterion used there.

Results

Given our argument regarding the random nature of land allocation, we estimate the Intent-to-treat (ITT) effect of initial land endowment on household outcomes using the model:

$$Y_i = \beta_0 + \beta_1 Dland_i + \beta_2 landsize_i + \gamma \mathbf{X_{ij}} + \theta FDP_i + \sum_t \delta_t ArrivalYear_i + \varepsilon_i$$

$Dland_i$ is a dummy variable equal to one if the refugee household was initially allotted a cultivable parcel of any size, and $landsize_i$ corresponds to the size of the allotted plot in hectares. (Neither variable includes plots of land later rented in, sharecropped, etc.) $\mathbf{X_{ij}}$ is a vector of household control variables including age, gender, education, arrival year of the household head, family size, a dependency ratio, an asset index and a dummy variable indexing whether the refugee household received cash or food aid. We control for settlement fixed effects using geographic location dummies, FDP_i. The treatment variable is initial land allocation and does not include parcels of land they later acquired through rentals or sharecropping arrangements. Finally, we control for the refugee household's year of arrival to Rwamwanja settlement.

The outcome variables we use as measures of household welfare include earned income, the share of household income that is not aid, a food security index, log consumption levels in the past two weeks, and dietary diversity, measured as the number of categories of different food types consumed by members of the household in the week prior to the survey.

Table 5. Estimated Impacts of Land Access on Refugee Outcomes (Rwamwanja)

	Income and Activities				*Welfare*		
Dependent variables:	Log of Household Income	% Earned Income	Log Income from Agriculture	Business Dummy	Food Dwelling Index	Security Index	Log of Consumption
Land Dummy	0.22*	0.02	5.02***	-0.04	0.22	0.05	0.24*
	(0.11)	(0.04)	(0.79)	(0.03)	(0.14)	(0.08)	(0.14)
Land Size	0.06	0.19***	1.10	0.10**	0.41**	0.13	-0.28
	(0.13)	(0.05)	(1.34)	(0.05)	(0.20)	(0.09)	(0.28)
N	333	320	333	333	333	333	333
R-squared	0.37	0.32	0.41	0.13	0.29	0.27	0.29

Notes: Regressions control for household demographics (size, dependent ratio, age and education of household head, female-headed households), dummies for arrival year and geographical location, assistance type and an asset index. Robust standard errors in parentheses.

The initial land-endowment effects on food security are positive but not significant. Refugee households receiving larger plots of cultivable land scored higher on the index of dwelling characteristics: an additional hectare raises the index by more than one third of a standard deviation. The land-treatment impacts on the share of income earned, business startup and dwelling quality seem to be mostly through the intensive margin.

Consumption measures seem to be explained more by whether or not a refugee household received a cultivable plot upon arrival than plot size. Households receiving cultivable land upon arrival have significantly higher consumption levels as well as dietary diversity. Consumption levels are 0.24 log points higher, out of an average of 14.4, while the diversity of food types consumed increases by over half an item (0.58). Given the aforementioned pseudo-random nature of land distribution policies, we treat these estimates as the average treatment effects of providing cultivable land to refugee households in Rwamwanja settlement.

General Equilibrium LEWIE model Results

We used data from the household and business surveys to estimate econometrically a LEWIE model in which refugee and host-country households interact within a general-equilibrium model of the local economy. We used this model to simulate the impacts of refugees, refugee aid, and refugee land allocations on the economy within 15 kilometers around each settlement, including income and production spillovers. A Monte Carlo method, outlined in Taylor and Filipski (2014), makes it possible to conduct a sensitivity analysis simultaneously with regard to all model parameters and construct an analogue to confidence bounds around simulated impacts. Because this is a structural model, the simulation results shed light on the likely pathways through which refugee assistance, including land allocations, affect local economies, including income and production spillovers to host-country households.

Table 10: Local-economy Impacts of Refugee Assistance (With Land)

Total Local Real Income Effect With Land (Million UGX)	Rwamwanja		Adjumani	
	Cash	*Food*	*Cash*	*Food*
Spillover	3.31	2.26	3.58	2.2
Total Effect	***4.81***	***3.76***	***5.34***	***3.96***
95% CI	*(4.34 ,5.27)*	*(3.23 ,4.28)*	*(4.75 ,5.92)*	*(3.49,4.44)*
Breakdown of Net Total real Income Effect (Spillover)	*Cash*	*Food*	*Cash*	*Food*
Cash aid Refugees	1.74	0.42	2.28	0.5
Food aid Refugees	0.75	1.25	0.53	1.23
Locals	0.82	0.59	0.78	0.47
Total Change in Production Activities (Million UGX)				
Crop Production	2.66	2.15	2.65	1.81
Livestock Production	0.84	0.53	0.68	0.43
Retail Businesses	0.67	0.43	0.78	0.87
Services Businesses	0.25	0.24	0.33	0.43

The total income spillover net of WFP aid cost from an additional refugee household receiving cash and an average-sized parcel of land at Rwamwanja is UGX 3 million ($876). Aid cost does not include the cost of land, since land is provided free of charge through negotiations between the national and local governments.

The largest beneficiaries of the land transfer, not surprisingly, are the refugees themselves. Access to land allows refugee households to increase their participation in agricultural production, raising their income levels.

References

To be added in.