

The Labor Market Impacts of Forced Migration[†]

By ISABEL RUIZ AND CARLOS VARGAS-SILVA*

One of the key consequences of civil conflict is forced migration. The United Nations Population Division (2013) suggests that from the total global stock of 232 million international migrants in 2013, about 16 million (6.8 percent) were refugees. Just recently, close to 10 million Syrians have been displaced since the conflict started in 2011 (UNHCR 2013). The magnitude and frequency of forced displacement has important economic and humanitarian implications.

One frequently overlooked aspect of forced migration is the consequences for host communities. One of these consequences, and the focus of this article, is the impact on labor market outcomes. The academic literature on the labor market impacts of forced migration is small compared to the corresponding literature in the “voluntary” migration context. The scarcity of studies looking at forced migration is surprising given that forced migration situations often have certain characteristics that could facilitate the identification of causal relationships (Ruiz and Vargas-Silva 2013). One of the greatest challenges to identify causal relationships between migration flows and host country labor market conditions is the fact that migrants are typically attracted to locations which are expected to do better in economic terms. Violence is the main driver of emigration in the forced migration context, a factor which in many cases is largely unrelated to the economic conditions of the destination. In

these cases, forced migration leads to an exogenous shift in labor supply. This article looks at a situation in which the location of forced migrants was affected by a series of geographical barriers and logistical decisions. These resulted in a natural experiment which enables the exploration of the labor market impacts of forced migration.

I. Background

Major ethnic civil conflicts erupted in Burundi and Rwanda during 1993 and 1994, respectively. These conflicts resulted in hundreds of thousands of casualties in just a few months. In addition, 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).

Kagera is a region of Tanzania which borders Rwanda and Burundi. It became one of the main destinations for refugees in Tanzania due to its geographic location. However, forced migrants were not evenly distributed across Kagera. There are a series of natural topographic barriers which separate the east and west (i.e., a chain of mountains, natural reserves, and lakes). These 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).

The geographical barrier was not the only relevant difference between the two regions. The United Nations High Commission for Refugees (UNHCR) and the Tanzanian Ministry for Home Affairs selected locations for the refugee camps that were very close to the Burundi and Rwanda borders. This was a decision based on costs and logistic considerations since transporting refugees to other locations in Tanzania would have required a major investment (Maystadt and Verwimp 2014).

* Ruiz: Harris Manchester College, University of Oxford, Oxford OX1 3TD (e-mail: isabel.ruiz@economics.ox.ac.uk); Vargas-Silva: COMPAS, University of Oxford, 58 Banbury Road, Oxford OX2 6QS (e-mail: carlos.vargas-silva@compas.ox.ac.uk). This work was supported by the UK Department of International Development (DFID) and the Institute for the Study of Labor (IZA) Growth and Labor Markets in Low Income Countries Programme (GLM|LIC). The views expressed in this document are not necessarily those of DFID, IZA, or GLM|LIC.

[†] Go to <http://dx.doi.org/10.1257/aer.p20151110> to visit the article page for additional materials and author disclosure statement(s).

In this article we make use of the Kagera Health and Development Survey (KHDS), a longitudinal dataset which contains information about households in different areas of Kagera before and after the forced migration shock, to explore the implications of this shock for hosts' labor market outcomes. In particular, we use the first and last rounds of this survey (i.e., 1991 and 2010) to explore the long-term labor market impacts of forced migration. Using 2010 data (about 17 years after the shock) also allows us to explore labor market outcomes of hosts after the "end" of the shock.

There are several channels by which a forced migration shock may affect host labor markets, including factors that could affect both supply and demand. The forced migration shock may lead to an increase in the supply of workers and therefore increased competition for the available jobs and decreased wages in some occupations. The magnitude of this effect would depend on the degree of substitutability between migrants and natives (Braun and Mahmoud 2014). There are also short-term impacts of forced migration that may have long-lasting effects on economic activity choices. The evidence from the "voluntary" migration literature suggests that an inflow of migrants may lead to a redistribution of natives across occupations and natives may respond to immigration by changing to occupations that require more "culture" specific knowledge and communication skills (Peri and Sparber 2011).

An additional channel is the impact on demand in the goods markets. The increase in population could lead to an increase in demand for new products and encourage enterprising natives to start different trade businesses (for example, the production of aid-related goods; Alix-Garcia and Saah 2010). Finally, there are also long-term impacts on the younger generations. The forced migration shock could affect the intergenerational transmission of human capital, including both agricultural and nonagricultural human capital.

II. Data and Identification

The KHDS data was collected by the World Bank and contains detailed information on the labor market outcomes of individuals among many other variables. The KHDS has a very good tracking record over time. At least one member

of the baseline household was reinterviewed in 89 percent of the cases in the 2010 round. The survey was initially conducted in 51 communities, but individuals were tracked over time even if they had moved out of the community. The first round of the survey was conducted during the 1991:9–1993:5 period. The Burundi conflict started on October 1993. Therefore, the first round of the survey precedes the start of the conflict.

The dependent variables reflect the economic activity choices of the individuals in the sample. First, we check whether individuals are doing farming or livestock work for subsistence, are in self-employment (nonfarm), or are employees (i.e., working for someone outside the household). The sample includes Tanzanians who were 7–46 years old in 1991, residing in Kagera, and included in the sample in both waves (panel). Seven years of age may be an early age to be included in the analysis, but child labor is very common in Tanzania.

The maximum age restriction for the first round (i.e., 46 years old) corresponds to the fact that we want the individuals to be of working age in 2010 (with a top limit of 65 years old). Official retirement age for Government positions in Tanzania is 60 years old, but extensions are commonly granted. The residence restriction ensures that even if the individual moved from the community there are no major differences in host location labor markets. For instance, many of those who left Kagera moved to the Dar es Salaam Region which has a much more dynamic labor market. In our empirical approach, we test for the robustness of the results to these two conditions (i.e., residence in Kagera and age limits).

After exploring the main economic activities of individuals, we focus on those who are employees and explore factors related to their employment conditions. These factors include whether the individual is a government employee, the sector of employment, and whether the job will provide the individual with a pension in the future.

In our estimation strategy, we use distance from the community of residence during the first round of the survey to the borders of Rwanda and Burundi for identification purposes. These data come from Fisher (2004). The geographic (and other) barriers described earlier implied that refugees were concentrated in the West region of Kagera. The distances are indicators

of the degree to which individuals were affected by the forced migration shock. This provides a more gradual distinction in the estimated intensity of the forced migration shock compared to a simple East-West split. First, we use the distance of the communities to the borders of Burundi and Rwanda separately. However, it is likely that distance to the two countries better captures the intensity of the forced migration shock. Therefore, we also use a weighted average of the distances to the border of Burundi and Rwanda. The results are presented with these three measures.

Previous studies have also used distance as a proxy for the intensity of the forced migration shock in Tanzania. Baez (2011) used distance to the border of Rwanda as a measure of the intensity of the forced migration shock, while Maystadt and Verwimp (2014) used the distance of communities from the refugee camps (most of which were close to the borders of Burundi and Rwanda). In order to make sure that distance was not capturing other differences between communities, we estimated regressions between educational level during the pre-shock period (a proxy for economic conditions) and distance for each of the distance measures. We find no significant linear relationship between the variables.

III. Results

A. Main Activity

All of the results of our estimations are presented in Table 1. Panel A presents the results for the main economic activities. We estimate a series of linear probability models along the following lines:

$$(1) \quad Y_{it} = \beta_0 + \beta_1 \delta_i + \beta_2 \lambda_w + \beta_3 t \\ + \beta_4 D_{it} + \beta_5 X_{it} + \varepsilon_{it},$$

where Y_{it} is the binary outcome of interest for individual i at time t , δ_i is the individual fixed effect, λ_w are ward dummies, t is the time dummy (2010 = 1, that is, the after “shock” period), X_{it} are a series of individual, household, and regional controls, and ε_{it} is the random error. 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. We use the log to decrease the impact of some communities being very close to the border. For the first period this variable is set to zero. The individual control variables are: marital status, age, education, and household status. The household control variables are: gender and marital status of the household head, size of the household, and child-to-adult ratio of the household. The regional controls include population of the district per square kilometer (from the National Bureau of Statistics of Tanzania) and the standard deviation of the daily precipitation of the location for the previous five years (from the NASA Prediction of Worldwide Energy Resource database).

The results suggest that the forced migration shock had not much impact on the likelihood of doing farming or livestock work for subsistence. This is not surprising as the share of individuals in the KHDS doing this type of work is quite high (over 80 percent), a fact which reflects the rural nature of the region. There are no major differences with regards to self-employment either. This is interesting in light of the substantial anecdotal evidence which suggest that Tanzanians were opening numerous shops and starting different businesses to service the needs of forced migrants and employees of international organizations. One possible explanation suggested by the previous evidence is that much of the new small business activity was driven by Tanzanians moving from other regions of the country to Kagera (Maystadt and Verwimp 2014). There is more evidence of a significant impact of the forced migration shock on the likelihood of being an employee. In this case, those who experienced a higher intensity of the forced migration shock are less likely to work for someone outside the household as employees.

B. Employees

The intensity of the forced migration shock has a significant negative impact on the likelihood of working for someone outside the household. However, there could be major differences between types of jobs. We also explore the impact of the forced migration shock on the characteristics of the jobs of those who work as employees. We focus on five aspects: whether the individual is a government employee, the sector of employment (agricultural/livestock,

TABLE 1—THE LABOR MARKET IMPACTS OF FORCED MIGRATION

Dependent variable	Intensity of the forced migration shock (i.e., $\log(1/\text{distance})$) constructed with distance ^a to		
	Burundi	Rwanda	Weighted ^b
<i>Panel A. Regression results for main economic activities with individual fixed effects</i>			
Farming/livestock	0.03 (1.71)*	0.02 (0.96)	0.03 (1.41)
Self-employment	-0.01 (-1.39)	-0.01 (-1.16)	-0.01 (-1.24)
Employee	-0.02 (-2.18)**	-0.01 (-1.22)	-0.02 (-2.20)**
Observations	3,884	3,884	3,884
<i>Panel B. Regression results for employment characteristics of employees</i>			
Government employee	0.02 (1.89)*	0.04 (2.89)***	0.04 (2.55)**
Agricultural/livestock	-0.03 (-1.22)	-0.03 (-1.27)	-0.03 (-1.18)
Trade	-0.00 (-0.27)	0.00 (0.03)	-0.00 (-0.08)
Professional	0.06 (3.50)***	0.10 (4.74)***	0.09 (4.31)***
Pension	0.03 (2.77)***	0.05 (3.71)***	0.04 (3.37)***
Uncensored observations	892	892	892
<i>Panel C. Robustness test: economic activity (sample not restricted by age or residence)</i>			
Farming/livestock	-0.01 (-1.34)	-0.01 (-1.02)	-0.01 (-1.14)
Self-employment	0.03 (1.73)*	0.01 (0.61)	0.02 (1.34)
Employee	-0.02 (-2.40)**	-0.02 (-2.40)**	-0.02 (-2.33)**
Observations	4,560	4,560	4,560
<i>Panel D. Robustness test: employment characteristics (sample not restricted by age or residence)</i>			
Government employee	0.02 (1.48)	0.02 (2.62)***	0.03 (2.15)**
Agricultural/livestock	-0.00 (-0.05)	-0.01 (-0.22)	-0.00 (-0.08)
Trade	-0.01 (-1.07)	-0.01 (-0.61)	-0.01 (-0.82)
Professional	0.05 (2.96)***	0.08 (4.26)***	0.07 (3.77)***
Pension	0.01 (0.93)	0.03 (2.57)***	0.02 (1.82)*
Uncensored observations	1,065	1,065	1,065

Notes: This table reports the coefficients on the measure of the intensity of the force migration shock in linear probability models. Each coefficient arises from a separate estimation. *t*-statistics are reported in parentheses.

^a The distances are the Euclidean distance from the community of residence during the first round of the survey (i.e., close to the time of the forced migration shock).

^b The weighted average is created by giving a 75 percent (25 percent) weight to the distance to Rwanda for those districts in the north (south) of Kagera and 25 percent (75 percent) weight to the distance to Burundi for those districts in the south (north). The results are robust to different weights ranging from 0 to 1.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

trade, or professional), and whether the job will provide a pension.

One potential problem with the analysis is that there could be a selection process in which it is important to control for the fact that the individual has become an employee in the first place. We run a two-step Heckman model in order to control for this possibility. Finding a variable to omit for the exclusion restriction is challenging, therefore we tried different alternatives. Panel B of Table 1 shows the results when we use the lag of the district's population per square kilometer for the exclusion restriction. This variable comes from the Tanzania censuses of 1988 and 2002. The first step estimation of the Heckman model confirms the significant impact of the district's population on the probability of employment. Other variables that we used as an alternative for the exclusion restriction were: the lag of population for the community of origin (reported in the community questionnaire) and the standard deviation of precipitation at the regional level. The results are robust to using those alternative exclusions.

Panel B presents the regression results for the different job characteristics. Previous studies suggest that less than 5 percent of those in the labor force in Tanzania have access to the social security system, including old age pension (Mchomvu, Tungaraza, and Maghimbi 2002). Access is particularly limited for those in self-employment or working as employees in the informal sector. While life expectancy at birth in Tanzania was low in 2010 (59 years), it has a positive trend and has increased markedly since 1991 (50 years). This increase in life expectancy has been accompanied by a discussion of the need to improve the pension system and expand coverage. The results show that those employees who were more affected by the shock are more likely to have a job that will provide a pension later on.

This could also relate to the other significant results in panel B. Those who experienced a higher intensity of the forced migration shock are also more likely to work for the government and be professionals, two factors that correlate strongly with the possibility of having a job that will result in a pension. There was an increase in opportunities for government employment as a result of increasing government activity in the refugee affected areas. These positions were mostly only available for natives (i.e., no

competition from refugees). Also, international organizations working in the region provided better employment opportunities for natives.

C. Robustness

In the analysis we limited the sample to those individuals who were living in Kagera during both rounds of the survey and only included those who were 7–65 years old in both rounds. Panels C and D of Table 1 present the results when we relax these restrictions (i.e., include those who moved to other regions and those more than 65 years old). These results confirm the robustness of our initial findings.

IV. Conclusion

Labor markets play a major role in long-term development after an episode of forced migration. The ability to work is often the only asset of forced migrants. As such, labor market impacts should be one of the main considerations of international organizations and national governments when dealing with a forced migration crisis and developing policies to respond to such crisis. Our results show multiple impacts of a forced migration shock on labor market outcomes of Tanzanians, including impacts on the probability of working for someone outside the household and the characteristics of the jobs they hold.

REFERENCES

- Alix-Garcia, Jennifer, and David Saah.** 2010. "The Effect of Refugee Inflows on Host Communities: Evidence from Tanzania." *World Bank Economic Review* 24 (1): 148–70.
- Baez, Javier E.** 2011. "Civil Wars beyond Their Borders: The Human Capital and Health Consequences of Hosting Refugees." *Journal of Development Economics* 96 (2): 391–408.
- Braun, Sebastian, and Toman Omar Mahmoud.** 2014. "The Employment Effects of Immigration: Evidence from the Mass Arrival of German Expellees in Postwar Germany." *Journal of Economic History* 74 (1): 69–108.
- Fisher, Monica.** 2004. "Distance of KHDS Communities to Rwanda, Burundi, and Uganda Borders." http://www.edi-africa.com/docs/khds/khds2data_DisMonicaFisher.zip (accessed March 13, 2015).

- Maystadt, Jean-François, and Philip Verwimp.** 2014. "Winners and Losers among a Refugee-Hosting Population." *Economic Development and Cultural Change* 62 (4): 769–809.
- Mchomvu, A. S. T., Felician S. K. Tungaraza, and Sam Maghimbi.** 2002. "Social Security Systems in Tanzania: Phase I Overview of Social Security in Tanzania." *Journal of Social Development in Africa* 17 (2): 11–28.
- Peri, Giovanni, and Chad Sparber.** 2011. "Highly Educated Immigrants and Native Occupational Choice." *Industrial Relations: A Journal of Economy and Society* 50 (3): 385–411.
- Ruiz, Isabel, and Carlos Vargas-Silva.** 2013. "The Economics of Forced Migration." *Journal of Development Studies* 49 (6): 772–84.
- United Nations High Commission for Refugees.** 2015. "UNHCR country operations profile—Syrian Arab Republic." <http://www.unhcr.org/cgi-bin/texis/vtx/page?page=49e486a76&submit=GO> (accessed March 13, 2015).
- United Nations Population Division.** 2013. "Trends in International Migrant Stock: The 2013 Revision." New York: United Nations Population Division.
- Whitaker, Beth Elise.** 2002. "Refugees in Western Tanzania: The Distribution of Burdens and Benefits among Local Hosts." *Journal of Refugee Studies* 15 (4): 339–58.

This article has been cited by:

1. I. Ruiz, C. Vargas-Silva. 2015. The labour market consequences of hosting refugees. *Journal of Economic Geography*. [[CrossRef](#)]