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Updated: December 2010



Civil Wars Beyond Their Borders: The Human Capital and Health Consequences of Hosting Refugees

In early 1994, Kagera, a region in northwestern Tanzania, was flooded by more than 500,000 refugees fleeing from the genocides of Burundi and Rwanda. I use this population shock and a series of topographic barriers that resulted in variation in refugee intensity to investigate the short-term and long-term causal effects of hosting refugees on outcomes of local children. This strategy provides evidence of adverse effects over one year after the shock: a worsening of children's anthropometrics (0.3 standard deviations); an increase in the incidence of infectious diseases (15 percentage points to 20 percentage points); and an increase in mortality for children under age 5 (7 percentage points).

Country where the research will take place

Tanzania

How does the research describe the impact of population/reproductive health on poverty reduction and/or economic growth?

Many articles have examined the socioeconomic effects of war on the population displaced by the conflict. Instead, this paper focuses on other individuals who are also affected by forced displacements but often do not receive the same attention: the host communities. In this paper I investigate the short-term and long-term causal effects of large population shocks (massive arrival of refugees) on children's health and human capital in hosting communities by exploiting the population flows from the genocides in Burundi (1993) and Rwanda (1994) as a natural experiment.

This paper joins previous efforts from a growing literature examining the contemporaneous and long-term effects of health shocks suffered in early stages of life on human capital. To date, however, most of the shocks studied have been the result of natural disasters, idiosyncratic events, or economic downturns, but rarely of large-scale violent conflicts. The evidence of this study (jointly with recently emerging research) contribute to filling this gap by documenting an indirect and long-lasting negative effect of civil wars on the health status and human capital of noncombatant young children in refugee-hosting communities, and very likely on their future economic growth as well.

How will the research address a policy need, and what kind of policy lesson is expected?

The empirical findings of the paper have implications beyond the short term. The evidence shows that the negative

effects of childhood exposure at the onset of the refugee migration persist over time, at least until adolescence, and to some extent may be also irreversible. From a policy perspective, the results of this paper and those of previous research offer evidence to promote and mobilize global assistance in the scale required. Unfortunately some low-income countries overburdened by hosting a large number of displaced people in the past have imposed restrictions on the acceptance of more refugees. Closing the borders, however, is far from the solution. Instead, I suggest a more comprehensive response is needed from international donors and aid agencies to prevent the welfare of civilians being determined by their proximity to these events.

Methods used

The empirical investigation of the net effects of forced migrants on the native populations that receive them is rather difficult for at least two reasons. First, the lack of data makes it hard to obtain reliable measures of cross-sectional variation in the number of refugees at the village level, particularly in refugee movements of large magnitude. Second, an even more challenging issue is the difficulty of finding appropriate control groups for host communities. I attempt to overcome these obstacles by exploiting a natural experiment derived from various particular features of the refugee crisis in the Kagera region. In addition to this design, I also exploit intracohort and intercohort variation in childhood exposure and responsiveness to the shock to shed light on its long-term effects.

All of these strategies are implemented by performing double and triple difference analysis (D-D and D-D-D) on pre-shock and postshock cross-sectional and longitudinal data. The variation in refugee-hosting intensity is constructed around a number of historical, logistical, and geographic fea-

tures which characterize the exogenous arrival and placement of Rwandan and Burundian refugees across provinces of Kagera.

Data used

The data employed in this paper come basically from two main sources. First, I use a pool of household-level cross-sectional data from the 1992 and 1996 Tanzania Demographic and Health Survey (TDHS) to form a panel of villages and estimate the short-run effects of the shock. The surveys (representative at the national and regional level) collected information from randomly selected households. Women ages 15 to 49, men ages 15 to 60, and their children, were asked questions about a variety of topics, including fertility, infant mortality, education, health, nutrition, family planning, and other basic characteristics of the households (employment, housing amenities, and assets).

The second empirical part of this paper investigates the dynamics of long-term effects. For this, I employ the Kagera Health and Development Survey (KHDS), a five-round longitudinal household survey conducted in all the districts of the Kagera region. The first four waves were collected almost yearly between 1991 and 1994, while the latest round was carried out in 2004. The KHDS is a very rich data set that contains modules on household demographics, education, health, anthropometrics, household activities, household and individual expenditures, local markets, among others; as well as questionnaires at the community level, school level, and health facility level.

Since identification for analyses is derived from the geographic coordinates of the village, I merged each of the resulting individual-level data sets (THDS and KHDS) with spatially georeferenced information (GIS) for all the clusters in the survey. The GIS data is used to locate the relative position of the clusters with respect to the topographic characteristics and bodies of water in the region of study. The coordinates of each cluster are also used to calculate the distance from each cluster to the border of the Kagera region with Rwanda. Finally, I also use data on altitude and historical climate data collected between 1980 and 2004.

Research results

The paper provides evidence of adverse impacts over one year after exposure to the massive arrival of refugees: a worsening of children's anthropometrics (0.3 standard deviations); an increase in the incidence of infectious diseases (15 percentage points to 20 percentage points); and an increase in mortality for children under age 5 (7 percentage points).

I also find that intracohort and intercohort variation in childhood exposure to the refugee crisis reduced height in early adulthood by 1.8 cm (1.2 percent); schooling by 0.2 years (7.1 percent); and literacy by 7 percentage points (8.6 percent). I developed designs using the distance to Tanzania's border with Rwanda as an alternative identification strategy for refugee intensity to support the findings. The estimates are robust across different samples, specifications, and estimation methods; and provide evidence of a previously undocumented indirect effect of civil wars on the well-being of children and subsequent economic growth in refugee-hosting communities.

Research products

Javier E. Baez, "Civil Wars Beyond Their Borders: The Human Capital and Health Consequences of Hosting Refugees," paper to be published in *Journal of Development Economics* (2010).

Javier E. Baez, "Civil Wars Beyond their Borders: The Human Capital and Health Consequences of Hosting Refugees," IZA Discussion Papers, no. 3468 (April 2008).

Notes

I acknowledge financial support from the Hewlett Foundation/PRB Fellowship on Population and Development, the Roscoe Martin Research Fellowship, and the Goekjian Dissertation Grant from the Moynihan Institute of Global Affairs of the Maxwell School of Public Affairs at Syracuse University in New York. Most of this research was completed during my graduate studies at the Maxwell School, and I am very grateful for the support they provided. The views and conclusions do not necessarily represent the position of the World Bank or its member countries. All mistakes are my own.