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# The Economics of Forced Migration

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**ABSTRACT** *This article reviews the economics literature on the impacts of forced migration. The literature is divided into two parts: impacts on forced migrants and impacts on host communities. Studies exploring the impact of forced migration due to WWII suggest that the long-term impact is often positive. The literature for developing countries suggests that there are serious consequences of forced migration for those forced to migrate. These consequences range from worse labour market outcomes to less consumption smoothing. The impact on host communities seems to be mixed and there are winners and losers. The article provides suggestions for future research.*

## 1. Introduction

Millions of people around the world have been forced to abandon their homes due to conflict, either as international refugees or internally displaced persons (IDPs). In 2010, there were an estimated 11 million refugees and over 27 million IDPs worldwide.<sup>1</sup> Determining the impacts of forced migration is essential in order to identify policies which can minimise the negative impacts of forced migration, and optimise the opportunities arising from such contexts.

There is already an extensive economics literature on the impacts of ‘voluntary’ migration and the impacts of war and violence, including several papers summarising the existing literature (Borjas, 1994; Skaperdas, Soares, Willman, & Miller, 2009). Forced migration situations have specific characteristics that distinguish this phenomenon from the ‘voluntary’ migration process and, therefore, many of the conclusions and policy suggestions which result from exploring ‘voluntary’ migration do not apply to forced migration.<sup>2</sup> Likewise, the literature on the short- and long-term impacts of war and violence often includes a discussion of forced migration (for example, Skaperdas et al., 2009), but the discussion is broad and the impact of forced migration is typically not explored in detail.

The economics literature on the impacts of forced migration is still in its early stages. In a 2003 paper about methodological and ethical considerations in research on forced migration the authors state that they present ‘the kind of academic abstraction that currently characterises much recent scholarship in political science, sociology, and anthropology (economics might be a candidate too, but almost no economics research has been published in refugee studies)’ (Jacobsen & Landau, 2003:186). This is a correct assessment for the period in question. In the early 2000s there was almost no economics literature on forced migration.<sup>3</sup> This situation has changed since then and although the literature is still not abundant, it has already reached a level at which it is possible and potentially very

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useful to systematically analyse it. That is the purpose of this article: to provide for the first time a review of the economics literature on the impacts of forced migration.

The International Association for the Study of Forced Migration defines forced migration as ‘the movements of refugees and internally displaced people (those displaced by conflicts) as well as people displaced by natural or environmental disasters, chemical or nuclear disasters, famine, or development projects’.<sup>4</sup> Hence, the definition of ‘forced migration’ is quite broad. In order to provide a systematic review, the current article limits the analysis to the impacts of violence-induced forced migration. The analysis focuses on internal displacement and refugee movements into neighbouring countries where most forced migration takes place.

In this context it is relevant to ask: impacts on whom? There are many sectors which could be impacted by forced migration. For the purpose of this analysis the impacts are divided into two categories: (i) the impacts of forced migration on the forced migrants and (ii) the impacts of forced migration on the host communities. While it is not possible to cover all potential affected groups with this typology, this division covers most of the existing economics literature. The impact of forced migration on the communities of origin was also considered for this review but the economics literature on this topic is still very small.<sup>5</sup> The review is limited to papers which are either published, forthcoming or included in an institutional working paper series (for example, IZA, MICROCON, Households in Conflict Network). This restriction is helpful as it makes clear which version of the paper is being discussed in the review. There is current interesting ‘work-in-progress’ in this area and the reader is encouraged to review such studies (for example, Alix-García & Bartlett, 2012; Moya, 2012).

While discussing the literature on the topic, the article also summarises key difficulties related to estimating these impacts and discusses some of the solutions which have been used in the previous literature. The hope is that readers will identify opportunities for research from this discussion. The econometric challenges are not particularly different from those in other areas of economics research, but there are specific characteristics of the forced migration process which may play an important role.

Finally, we have restricted the analysis to studies within the economics discipline. There is a large literature on the impacts of forced migration in other social sciences and that literature is a great complement to this article.<sup>6</sup>

## 2. The Impact of Forced Migration on Forced Migrants

Those forced to migrate may endure life-changing experiences during and after this process. Often these forced migrants have to abandon their homes and other valuable assets in order to flee from violence and end up in refugee camps experiencing living conditions far inferior to their pre-migration situation. In other cases, forced migrants have a lifestyle which is superior to their pre-migration situation. As such, the impact of forced migration on those who are forced to migrate can be positive or negative depending on the specific characteristics of the forced migrant, the nature of the conflict and the interventions from the international community. The literature discussed below clearly highlights these differences.

Before discussing the existing economics literature on the impacts of forced migration on those who are forced to migrate, it is useful to discuss some of the common difficulties with such analyses. By discussing some of these common problems at the beginning, it is not necessary to repeat the same discussion for each study. This is not an exhaustive list of potential technical problems, but just some of the difficulties that were consistently repeated across studies. For simplicity purposes, the discussion below uses the term ‘forced migrant’ in reference to all those who have been forced to migrate (either internally or internationally).

### 2.1 Some Key Methodological Difficulties in Previous Studies

- (a) *Data.* Data limitations are by far the main difficulty in most economics analyses of the impacts of forced migration. In order to estimate the impact of forced migration on forced migrants one

would ideally have pre-, during and post-forced migration (after return or permanent resettlement) data on the forced migrants and non-migrant groups. However, in much of the existing analysis it is only possible to use, at best, data on the pre- and during forced migration situations or the during and post-forced migration situations.

Another potential difficulty arising from the use of a lot of the existing data is that often it is not possible to explicitly identify forced migrants in data sets. In many instances, these migrants are not explicitly singled out in data sets (that is, no question about forced migration status) and it is often the case that the ethnicity and other characteristics of forced migrants and non-migrants are similar.

- (b) *Separating the impact of war and violence from the impact of forced migration.* The difficulty in separating the impact of war and violence from the impact of forced migration is another significant limitation in previous studies. Ideally, from the researcher's point of view, for each case study there would be data for forced migrants and non-migrants (that is, stayees) who suffered from similar levels of violence. These data are not available in most cases.

It is also likely that the sector of the population which experienced forced migration is not random. That is, it is possible for individuals to 'self-select' into or out of forced migration. As a result, those who leave could be different from those who stay regarding characteristics that may make them more (or less) successful in terms of future outcomes. In some cases it is possible to simply control for those characteristics in the estimation, but this is not always the case.

For instance, consider the following example. Individuals move when their expected utility from moving is higher than that of staying. Letting  $U_D$  be the expected utility if displaced and  $U_S$  the expected utility of stayees, individual  $i$  moves if:

$$U_{iD} > U_{iS} \quad (1)$$

Many factors will affect utility, including the level of exposure to violence of the individual ( $R_i$ ), economic opportunities ( $Y_i$ ), the cost of moving ( $C_i$ ), other relevant observed characteristics ( $O_i$ ) and unobserved characteristics ( $V_i$ ). Using the subscript 'D' to represent variables related to being in displacement and subscript 'S' to represent variables for those who stay behind, (1) becomes:

$$U_{iD}(R_{iD}, Y_{iD}, C_{iD}, O_{iD}, V_{Di}) > U_{iS}(R_{iS}, Y_{iS}, O_{iS}, V_{iS}) \quad (2)$$

As shown in (2), the unobserved characteristics affect the likelihood of displacement. It is likely that these unobserved characteristics also affect future economic outcomes.

- (c) *Location selection.* Not all forced migrants move to the same region or community, even if they all originate in the same region. Therefore, it is necessary to adjust the analysis for the choice of destination. In those cases in which forced migrants choose their destination (not always the case) individuals will tend to locate in destinations that reward their characteristics the most (Kondylis, 2010). As a result of these different possibilities for the selection of destination and the different characteristics of the destination locations, the analysis could provide a biased estimate of the impact of forced migration.
- (d) *Selection into assistance programs.* In many situations there are assistance programmes that offer help to the displaced population. A significant portion of the literature on the impacts of forced migration on forced migrants has focused on evaluating the mediating impact of such programmes. Ideally, unobserved variables which may affect the outcome of interest should not affect the likelihood of programme participation. Yet, this may not occur because often the number of potential beneficiaries of a programme is greater than those who can participate given limited resources and there is a selection process.

## *2.2 Some Solutions from the Existing Literature*

There are several ways in which the existing literature has dealt with the difficulties presented above. For instance, Kondylis (2010) explores the impact of displacement which resulted from the war in Bosnia and Herzegovina in the early 1990s. In the original data it is not possible to identify the displaced individuals. She solves this problem by looking at the timing of the moves of individuals. She estimates that most of the relocation due to the war took place before the year 2002. Therefore, she considers any individual who reports having last moved between 1992 and 2001 as a displaced person.

In terms of previous differences between forced migrants and non-migrants, the evidence suggests that in some conflicts in which the objective is territorial acquisition there is often not an a priori difference between the forced migrant and non-migrant groups. For example, Sarvimäki, Uusitalo and Jääntti (2009) argue that this was the case in the displacement which resulted after Finland ceded a portion of its territory to the Soviet Union following WWII and resettled the population living in that area (about 11% of the total population) in other parts of the country. Sarvimäki et al. (2009) show that, at that time, there were no major differences between those who lived in the ceded areas of Finland and those who lived in other parts of the country. The common 'selection problem' was not present, since the entire population of the area was forced to migrate.

Other events such as those in which displacement is mandated by the government for purely military strategy reasons may also present a situation in which there are no previous differences between the forced migrants and non-migrants. For example, Fiala (2009) argues that in the context of displacement arising in Northern Uganda because of the conflict between the government and the Lord's Resistance Army (LRA), the Ugandan military often decided whom to displace without considering the characteristics of individuals. Falck, Heblich and Link (2011) argue that in the mass forced migration to West Germany after WWII in response to ethnic pressures, forced migration affected everyone based on ethnicity, regardless of social status or skill level. Hence, a comprehensive look at the characteristics of the conflict and forced migration process may help in addressing some of the most common econometric challenges.

Another possible solution is to use an instrument for forced migration. Kondylis (2010) suggests that a possible instrument for displacement could be the level of violence in the region of residence before displacement. However, in order to verify the potential for violence to be a good instrument it is important to look again at the characteristics of the conflict. If there was a systematic targeting of those areas with lower (or greater) wealth levels, the after forced migration differences between the forced migrants and non-migrants may be due to differences in key characteristics between the two groups and not on forced migration status.

The research literature suggests that even in those cases in which the conflict relates to ethnic cleansing, if there is no targeting of individuals based on economic differences, it is possible to argue that the level of violence is not related to unobserved characteristics that may also affect future economic outcomes. Kondylis (2010) argues, for instance, that this was the case for Bosnians in pre-war Bosnia and Herzegovina. She posits that economic motivations did not direct the pattern of Serb invasions, just the aspiration for an ethnically homogenous and contiguous Serb territory. In another paper, Kondylis (2008) suggests that this was also the case for the 1994 Rwandan conflict given that the genocide perpetrators targeted all Tutsis, regardless of their socio-economic background. On the other hand, Ibañez and Velez (2008) argue that this is not the case in Colombia as individuals are often targeted based on economic factors. Steele (2007) provides a comprehensive discussion of different armed group types, the implications of each type for actions against civilians and the resulting nature of displacement. The application of this typology could be useful to determine if exposure to violence was exogenous to certain refugee characteristics.

It is also possible that future economic factors do not play a big role in the choice of destination on the part of forced migrants. For instance, Lehrer (2010) reports that the general perception in Northern Uganda was that relocation to a camp was a short-term solution until the defeat of the LRA, and individuals simply relocated to the nearest camp without much consideration for other factors. In some

cases the government may want to, but cannot, match the characteristics of the forced migrants with those of the receiving communities. For instance, Falck et al. (2011) argue that the unexpected large number of forced migrants to West Germany after WWII made it impossible to match local labour market characteristics with the skills of forced migrants. Yet, in other cases certain location characteristics affect the government's decision regarding allocations. For instance, this was the case during the relocation of displaced individuals in Finland discussed above (Sarvimäki et al., 2009).

In the case of programme participation and selection process, it is possible to find an instrument for participation in the programme. A possibility is to use participation in one intervention programme in which there was little or no selection process as an instrument to assess participation in another intervention programme with greater selection. For example, Ibañez and Moya (2010) propose the use of a dummy variable indicating the access of households in Colombia to emergency humanitarian aid (EHA) as an instrument to measure participation in a United States Agency for International Development programme. They argue that receiving EHA only has a short-term impact on households as the assistance only lasts a few months and it is not for income generation purposes. However, it is necessary to receive EHA in order to be a candidate for the income generation programme.

### *2.3 The Long-Term Perspective*

When discussing forced migration the first thing that comes to mind for many is the result of civil wars in the African continent or violence in the Middle East. However, a considerable portion of the economics literature on forced migration impacts looks at the impact of European forced migration movements which resulted from events related to WWII. These studies provide a particularly interesting perspective as it is possible to observe the long-term consequences of forced migration for those who were forced to migrate.

As mentioned above, Sarvimäki et al. (2009) study the displacement which resulted after Finland ceded a portion of its territory to the Soviet Union following WWII.<sup>7</sup> In their study they can observe outcomes up to 50 years after displacement. Their findings suggest that displacement increased the long-term income of the displaced. The evidence is stronger for displaced men than for displaced women. For men the point estimate for income levels suggests a difference of about 11 per cent in annual income in favour of the displaced. The authors suggest that a large part of the increase in long-term income was the result of successful resettlement policies and the increased mobility (that is, higher propensity to change municipality of residence) of those who were displaced.

Falck et al. (2011) explore the forced migration which resulted after millions of ethnic Germans were forced to migrate and settle within the new borders of West Germany. Their focus is a 1953 law which aimed to improve the economic situation of the forced migrants by opening access to restricted professions and providing them with economic incentives. Their results suggest that the law had mixed results. While it improved the general condition of the forced migrants, it failed to restore them to their pre-migration economic situation. The forced migrants were assigned to an area based on an 'allocation rule', but as mentioned above it was not possible to match the characteristics of the forced migrants to those of the locations. The authors suggest that the forced migrants were rather immobile (contrary to the case for Finland discussed previously) and that this had negative implications for their long-term outcomes.

The economic situation of displaced Germans to West Germany after WWII was also explored by Bauer, Braun and Kvasnicka (2011). They find that forced migrants and native West Germans who were comparable in economic terms before the war were different in the post-war period, with forced migrants having significantly lower average incomes (an economic disadvantage that was also present in the second generation). However, the study finds that those forced migrants who were employed in the agricultural sector before WWII had significantly higher incomes than comparable natives. The authors suggest that this is the result of a faster transition from the agricultural sector to other sectors for these workers.



#### 2.4 Short-Term and Medium-Term Impacts: Income, Output and Labour Market Outcomes

Now the analysis turns to the short- and medium-term impacts of forced migration on forced migrants. The discussion starts in this sub-section with a look at straightforward impacts on economic variables such as labour market outcomes and continues in the next sub-section with a discussion of impacts on variables which relate to economic conditions, but which are not strictly speaking purely economic measures. Finally, the last sub-section discusses the situation of forced migrants living in camps.

Kondylis (2010) explores the impact of displacement on labour market outcomes using data from the displacement which resulted from the war in Bosnia and Herzegovina. The results show that displacement negatively impacted the labour market outcomes of Bosnian men and women. Specifically, displaced men experienced higher unemployment levels (there was a fall of 16 to 29 percentage points in the probability of being employed for displaced men compared to stayers) and displaced women were more likely to drop out of the labour force (there was an increase of 11 to 18 percentage points in inactivity for women).

Kondylis (2008) looks at a 1997 policy for resettlement and land redistribution in Rwanda (that is, *imidugudu*) and investigates the impact of the policy and displacement in general on agricultural output. There was geographical variation in the speed of implementation of the policy, which she exploits for empirical purposes. She presents a series of reasons for which displacement may have important effects on agricultural productivity. For instance, periods spent in camps may impact on previous agricultural skills, there are fewer transfers of agricultural skills to the next generation and agricultural skills may not be transferable to the new place of residence (for example, different soil, elevation and topography). She finds that previously displaced individuals were likely to resettle in the more agriculturally productive areas of Rwanda. Also, returns to on-farm labour were consistently higher for previously displaced individuals than for stayers. However, not many of these differences are attributable to the 1997 policy. She suggests that displaced individuals could be more motivated to boost their economic performance than stayers.

Fiala (2009) explores the impact of displacement on the assets of households and their consumption patterns in Northern Uganda. He finds that displacement is not associated with an asset loss for all those who are displaced. Specifically, displacement results in an increase in the value of assets for households that originally had few assets. However, displacement is associated with a reduction in assets of between 17 per cent and 26 per cent for other households.<sup>8</sup>

#### 2.5 Compensating Variation and Consumption Smoothing

This section discusses impacts on some other factors, related to individuals' (or households') well-being, that displacement could affect. Most of these factors have economic-related implications, but also have broader consequences.

Ibañez and Velez (2008) proposed the use of compensating variation as a way to measure welfare losses from displacement in Colombia. In this case, compensating variation refers to the amount of money that is necessary for the individual to be indifferent between two locations. For instance, it is possible to estimate compensating variation as the willingness to accept a given amount of money in exchange for an increase in the exposure to violence.

Ibañez and Velez (2008) found that welfare losses from displacement amount to 37 per cent of the net present value of rural lifetime consumption. The authors go further and distinguish between preventive displacement (that is, households identify fear despite not being threatened as the reason for fleeing) and reactive displacement (that is, the household is the victim of a threat). They find that preventive displacement generates lower welfare losses (20%) in comparison to reactive displacement (33%).

Another approach taken by the previous literature is to look at consumption patterns. In theory, consumption should depend only on permanent income and should not relate to (predictable) transitory income variations. That is, individuals should transfer resources across periods in order to smooth consumption. Forced migration may affect the typical mechanisms used for consumption smoothing

such as selling assets, using savings, accessing formal or informal credit markets and formal or informal risk-sharing mechanisms.

Ibañez and Moya (2010) find that displaced households in Colombia are not able to smooth consumption. That is, they are not able to isolate consumption (dependent variable) from variations in transitory income (independent variable). The coefficient on transitory income varies from 0.169 to 0.198 and it is statistically significant, suggesting that variations in transitory income translate into variations in consumption. The authors suggest that the disruption of risk-sharing mechanisms and poor labour conditions make households unable to smooth consumption. However, given that the authors lack a control group (that is, a comparable non-displaced group) they cannot attribute the whole impact to the displacement process.

## 2.6 Camps

In many situations, the destination after displacement is an IDP or refugee camp. In most studies about labour camps there is only information available about those individuals who are in camps and it is not possible to fully explore the impact of living in a camp versus other destinations. However, it is still possible to compare across individuals in different camps according to camp characteristics. One of the characteristics of camps explored in the literature is for how long the camp has been in existence. It is possible that camps which have been in existence for longer result in worse or better outcomes for individuals, independent of how long the individual has been at the camp. Using data from Northern Uganda, Lehrer (2010) explores this possibility and finds that a ‘culture of idleness’ develops in camps over time for males, while women’s labour market decisions are not influenced by the age of the IDP camp in which they reside. Lehrer (2010) suggests that it takes time for the ‘culture of idleness’ to develop, as it typically involves things such as a market for alcohol, establishments for drinking and other venues for passing time, such as places for watching sports.

Also using data from Northern Uganda, Bozzoli and Brück (2010) explore the impact of camp residency on child morbidity. They find that IDP camp residency almost doubles morbidity for children. They suggest that overcrowding and poor cooking technologies in IDP camps may explain this finding. However, poor access to safe drinking water in return locations offsets the positive health effects of camp decongestion. In another paper using a similar data set, Bozzoli, Brück and Muhumuza (2011) explore the effect of living in camp on post-conflict economic activity choices. The authors suggest that the lack of well-functioning markets in camps may have important implications for the occupational choices of those living in the camp (versus those who have returned home). They find that those living in a camp are more likely to participate in cultivation and trading activities than those who have returned home. On the other hand, returnees were more likely to engage in the making of handicrafts than those in camps.

## 3. The Impact of Displacement on the Host Communities

Despite the existence of assistance programmes, forced migrant populations may burden host communities in various ways. The discussion below uses the terms ‘forced migration shock’ in reference to an increase in the number of forced migrants in a certain location. As in the previous section, the analysis starts by highlighting some of the most common econometric challenges in the literature.

### 3.1 Some Key Methodological Difficulties in Previous Studies

- (a) *It is difficult to establish a counterfactual.* It is not possible to observe the same community affected by an increase in forced migrants and without the increase in forced migrants. The analysis of the impact of forced migrants in a location is typically conducted by comparing the situation before and after the arrival of the forced migrants. For instance, it is possible to compare



the unemployment rate in location D before ( $U_{D,pre}$ ) and after the forced migration shock ( $U_{D,post}$ ):

$$(U_{D,post} - U_{D,pre}) \quad (3)$$

However, it is possible that many other things have also occurred between those two periods and that these other factors are responsible for a significant share of the change in the unemployment rate between the two periods.

- (b) *Increases in forced migrant populations are not always exogenous.* In terms of the analysis, it would also be ideal for the increase in the number of forced migrants to be exogenous to the variable of interest. For instance, if the specific outcome of interest is the impact of forced migrants on wages of locals, there should not be a causal relation of wages in the host location to forced migrant numbers. Otherwise, it could be the case that forced migrants are just moving to a location in response to higher salaries and that it is not possible to properly evaluate the impact of forced migration.
- (c) *Data remains a problem.* Finally, as was the case with the impact of forced migration on the forced migrants, the main limitation of the analysis on the impact of forced migration on host communities is the lack of adequate data to analyse such impact.

### 3.2 Some Solutions from the Existing Literature

An option for dealing with the lack of a proper counterfactual is to use a difference-in-difference estimator. In this case, the comparison is with another location  $N$  that, overall, was similar during the pre-forced migration period, but which was not affected by the forced migration shock.

$$(U_{D,post} - U_{D,pre}) - (U_{N,post} - U_{N,pre}) \quad (4)$$

The comparison suggested in (4) relies on having at least two locations that are similar, one which received a group of forced migrants and another which did not. This is likely to be the case in situations in which the location of forced migrants is not matched with local community characteristics. For instance, Maystadt and Werwimp (2009) argue that the location of refugee camps in Tanzania was random in regard to the economic characteristics of nearby villages. They indicate that given that the refugee inflow was massive and unexpected, cost was the main factor taken into account when deciding on the location of camps and there was no strategic matching process with surrounding communities.

The migration literature is full of examples of exogenous migration shocks which mainly use the political factors of the sending country. There are several similar examples in the case of forced migration. For instance, it is argued that the timing and level of displacement from Burundi and Rwanda to Tanzania in 1993 and 1994 were largely unexpected at the time and driven by events in these countries (Baez, 2011; Maystadt & Werwimp, 2009). Escaping the civil conflict was the main reason for moving to Tanzania, a factor unrelated to the specific circumstances of Tanzania at the time. Braun and Mahmoud (2011) also suggests that the mass migration of Germans from Eastern Europe to West Germany already mentioned above was also exogenous as it was not related to the economic conditions of West Germany at the time.

As suggested above, it would be ideal to have a random selection of the location of forced migrants in regard to the outcomes of interest. Moreover, often there is a lack of precise figures on the number of forced migrants in each location, making the distinction between locations with high and low forced migrant intensity very difficult. One possibility for overcoming these two difficulties is to rely on cases in which the characteristics of one location make it more difficult for forced migrants to reach it. Baez (2011) provides an example in which natural topographic barriers limit the number of refugees from

Burundi and Rwanda in certain regions of Tanzania. For instance, there was a high intensity of refugees in the western part of the Kagera region, but not in the eastern part, which is separated from the western part by a series of geographic barriers. However, pre-1993 (the start of the conflict) there were no major differences between key indicators in both regions.

### 3.3 Short-Term and Medium-Term Impacts: Income, Output and Labour Market Outcomes

It was not possible to identify economics studies on the long-term consequences of hosting forced migrants. Therefore, the discussion starts by discussing the short- and medium-term impacts of hosting forced migrants.

The impact of the increase in the number of forced migrants is not likely to be the same across all sectors of the host population. Some papers have specifically focused on identifying ‘winners’ and ‘losers’ among the host community members from a forced migration shock. The degree of substitution between refugees and locals in the labour market is one of the key determinants of the effect of displacement on locals’ labour market outcomes. For some occupations forced migrants may complement the local labour force, improving their labour market outcomes, while for others forced migrants may represent a substitute labour force.

Braun and Mahmoud (2011) focused on the expulsion of millions of Germans from Eastern Europe to West Germany to explore its labour market impact. While this paper looks at a historical event, the focus is on short-term impacts as the data are from 1950. The authors explain that forced migrants and natives were very close substitutes: they spoke the same language (that is, the same mother tongue) and had been educated in German schools. They found that forced migrants considerably reduced the employment rates of natives. A 10 percentage point increase in the forced migrants share in a given occupation in a given state decreased the employment rate of natives in that occupation and state by around 3 percentage points.

In a potentially surprising finding, Maystadt and Werwimp (2009) suggest that in the region of Kagera in Tanzania, refugees from Burundi and Rwanda have a positive impact on locals’ welfare (measured by the real household consumption per adult equivalent). However, there were heterogeneous impacts on the host population. For instance, agricultural workers experienced increased competition from refugees, while agricultural producers were able to take advantage of the lower wages which resulted from the refugee inflow. According to their analysis, skilled workers are also better off as they enjoy increased job opportunities in international organisations, and those self-employed in business activities are worse off (potentially as a result of increased competition).

Calderon and Ibañez (2009) explored the labour market impact of forced migration in Colombia. They make a distinction between the impact of an increase in the number of forced migrants on the formal and informal labour markets and make further distinctions by gender. Their results suggest that the effect of a forced migrant ‘shock’ has the greatest impact on the informal sector. A 10 per cent increase in the share of forced migrants in the working age population leads to decrease in real wages of 3 per cent. The impact seems to be particularly strong for female workers. For females working in the informal sector an increment of 10 per cent in the share of forced migrants over the working age population leads to a 3.06 per cent decline in real wages.

### 3.4 Other Impacts: The Effect on Food and Housing Prices

An influx of forced migrants represents an increase in the total population of a region and, as such, it may have an impact on the total demand for products and services. Yet, the increase in the population of forced migrants may have an impact on prices which differs from that of an increase in the local population. The model below presents this idea.

Let the utility function of forced migrants depend on the consumption of aid goods ( $A_i$ ) and other goods ( $O_i$ ). Assuming a Cobb-Douglas utility function, the utility of forced migrants ( $U_R$ ) is given by:

$$U_R = A_R^{\alpha_R} O_R^{(1-\alpha_R)} \quad (5)$$

Where  $\alpha_R$  indicates the relative preference of forced migrants for aid goods versus other goods. The utility of locals ( $U_L$ ) is given by:

$$U_L = A_L^{\alpha_L} O_L^{(1-\alpha_L)} \quad (6)$$

As such, (5) and (6) allow forced migrants and locals to have different preferences in regard to consumption. Both of these groups are subject to a budget constraint ( $B_i$ ), which depends on the amounts of each type of good that they consume (that is,  $A_i$  and  $O_i$ ) and the prices of these goods ( $P_A$ ,  $P_O$ ). Notice that there is an assumption about a market for aid goods. In some contexts forced migrants may sell or trade an important portion of the food aid received. The budget constraints of forced migrants and locals are:

$$B_R = P_A A_R + P_O O_R \quad (7)$$

$$B_L = P_A A_L + P_O O_L \quad (8)$$

Letting ( $L$ ) represent the size of the local population and ( $R$ ) the total number of forced migrants, it is possible to show that if forced migrants and locals maximise their utility, subject to their budget constraints, the total demands for aid goods and other goods will be:

$$A = \frac{L\alpha_L B_L + R\alpha_R B_R}{P_A} \quad (9)$$

$$O = \frac{L(1 - \alpha_L)B_L + R(1 - \alpha_R)B_R}{P_O} \quad (10)$$

The main implication of (9) and (10) is that an increase in the number of forced migrants does not necessarily have the same impact as an increase in the local population. There are two potential reasons for this difference. First, forced migrants may have different preferences (that is, different  $\alpha$ s) and, second, forced migrants may have different budget constraints (that is, different  $B$ s).

However, the potential impact of forced migrants on prices is not limited to the demand side. Forced migrants may affect the production process by providing a cheaper labour force. It is also possible that features which accompany the forced migration process such as foreign aid may also impact the supply side. From the production perspective, aid can be split between locally produced aid ( $D$ ) and foreign produced aid ( $F$ ). These two types of aid may have distinctive impacts on local markets. This is the approach taken by Alix-Garcia and Saah (2009) to explore the impact of the refugee inflows from Burundi and Rwanda in host populations in western Tanzania. The analysis suggests that the increase in the refugee population leads to price increases which are more significant the closer a specific market is to a refugee camp. They also show that there are large increases in the prices of non-aid food items and more modest price effects for aid-related food items. The evidence also shows that food aid ameliorates (although it does not offset completely) the impact on prices of the population increase which results from the presence of refugees.

Alix-Garcia, Bartlett and Saah (2012a) also analysed the impact of displacement in Darfur on prices and found that an increase in the number of displaced individuals increases prices (holding constant the amount of aid available). The impact on prices differs by product, including a 4.2 per cent increase in the price of fava beans for a 10 per cent increase in the number of displaced people and a 3 per cent increase in the price of wheat for a 1 per cent increase in the number of displaced.

The impact of forced migrants on the housing market should be different in an encampment situation, compared to the impact of urban self-settled forced migrants. In the encampment situation

much of the impact can be through an increase in the price of construction related materials. However, in the case of urban self-settled forced migrants there could be a direct impact on the housing market. Alix-Garcia et al. (2012a) present qualitative evidence on the impact of displacement in the housing market of the city of Nyala in Sudan. The perception of residents was that the main impact on the housing market was from the arrival of international workers. These workers were able to sign long-term contracts and to pay significantly higher rents than locals. Moreover, much of the new construction in the city was to resettle the displaced from the camps to the city. As such, locals were pushed to the outskirts of the city. The evidence on the impact of forced migration (and associated factors such as the presence of international workers) on the housing market remains strictly qualitative at this point.

Alix-Garcia, Bartlett and Saah (2012b) study the impact of displacement on land use patterns as a result of changes in agricultural production using data for Darfur. They use as the dependent variable an 'enhanced vegetation index' created using satellite images, and the distance weighted number of IDPs in the region at different time periods as one of the independent variables. The results suggest that displacement from rural to urban areas leads to regrowth of vegetation in rural areas, but it is detrimental for vegetation in urban areas (especially on the periphery). Therefore, results suggest that, at least for some areas, displacement can have a beneficial environmental effect.

### 3.5 *The Impact on Host Children*

A forced migration shock can affect everyone in the host area. However, in the case of children it is possible that some of these effects will have implications for their early childhood development and adulthood later on.

Baez (2011), using the methodology explained above, explored the impacts of hosting refugees from Burundi and Rwanda on 'host children' in Tanzania. He found that there was a 15 to 20 percentage point increase in the incidence of infectious diseases for local children for hosting refugees. Moreover, there was an increase of roughly 7 percentage points in mortality for children under five. Childhood exposure to the refugee shock reduced height in early adulthood by 1.2 per cent, schooling by 7.1 per cent and literacy by 8.6 per cent.

## 4. Conclusion

This article reviewed the economics literature on the impacts of forced migration. The Appendix provides a list of the papers reviewed in the article. The analysis suggests that the large majority of the economics studies on the impacts of forced migration have been produced during the last five years. Prior to this time horizon there was almost no economics literature on the impacts of forced migration. However, even with the increasing number of new economics articles on the topic during the last few years, the economics literature on forced migration is still in its early stages. The lack of data to conduct proper econometric analysis is still one of the main challenges.

The review of the literature suggests that most studies have concentrated in a few forced migration situations, namely: internal displacement in Northern Uganda, internal displacement in Colombia, the refugee inflow from Burundi and Rwanda to Tanzania and the forced migration which resulted from events related to WWII.

The studies exploring the impact of forced migration due to events related to WWII suggest that the long-term impact of forced migration is often positive for many displaced groups. The reasons for the positive effects include effective resettlement policies, increased future mobility for those who were displaced and faster transition to other sectors for agricultural workers. It seems that the long-term mobility of forced migrants is key in determining their long-term outcomes and that those who are more mobile tend to be more successful. However, the research on long-term impacts is concentrated on European countries. The literature for developing countries, which is focused on short- and medium-term impacts, suggests that there are serious consequences of forced migration for those forced to migrate. These consequences range from worse labour market outcomes and less income to

less consumption smoothing. In the case of children there is evidence of an increase in morbidity for those living in IDP camps.

The impact on the receiving communities seems to be mixed, with the literature clearly identifying winners and losers. The winners include agricultural producers who can take advantage of the cheaper labour force represented by forced migrants and the increase in demand for products (and potential increase in prices also) that is represented by food aid funds. The losers include the children hosting the refugees, who are faced with a situation which may result in long-term health consequences, and the local workers who are displaced by forced migrants in the labour market.

It was also possible to identify some areas for future research. Chief among these is the need for more studies on the impacts of forced migration on the communities of origin. This remains a heavily under-researched area and there is almost no economics analysis discussing this impact. Another area of possible future research is the impact of forced migration on housing markets. While there are several studies about the impact of forced migration on prices in general, most of the existing evidence related to the housing market is still qualitative at this point. Finally, the impact of forced migration on host children is still also an under-researched area. It was only possible to identify one study on this topic. This area should be the focus of future research as hosting refugees during early ages is likely to have implications for early childhood development and adulthood.

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## Notes

1. See <http://www.unhcr.org/>.
2. The discussion on the determinants of forced migration, its definition and how forced migrants compare to 'voluntary' migrants is out of the scope of this article. See Cortes (2004), Czaika and Kis-Katos (2009), Engel and Ibañez (2007) and Stark (2004) for this discussion.
3. There was a workshop on the economics of forced migration at MIT during 2005 and the conclusion of the organisers was that 'despite the recent flourish of interest in international migration, forced migration remains relatively neglected by economists'. See: <http://web.mit.edu/cis/www/migration/index.html>.
4. See <http://www.forcedmigration.org/about/whatisfm/what-is-forced-migration>.
5. One exception is Sayre (2003).
6. For instance, see Betts (2009) and Castles (2003).
7. See also Saarela and Finnas (2009), who use this event to compare mortality rates over time of Finns born in areas that were ceded to the Soviet Union with people born in the same region but on the adjacent side of the new border.
8. Fiala (2009) also explores the impact of displacement on meat consumption and finds that those who were displaced experienced a decrease in meat consumption of 71 per cent. He suggests that this means that there is decreased nutritional consumption content, as the majority would consume meat if available.

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