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Return Migration and Economic Outcomes in the Conflict Context[1]

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HiCN Working Paper 203

15 December 2015

Abstract:
We explore differences in economic outcomes between return migrant households and non-migrant households using panel data from Burundi, a country which experienced large scale conflict-led emigration to Tanzania and massive post-war refugee return. We exploit proximity to the border of Tanzania at birth for identification purposes. Results indicate that returnee households have significantly lower levels of livestock. Differences in current economic activities and legal restrictions on economic activities while in displacement are likely to explain a portion of the current economic gap between returnee and non-migrant households. There is no evidence for other channels (e.g. vulnerability to crime, health status).

JEL Codes: F22, E24, D74

Keywords: Return Migration, refugees, labor markets

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[1] The authors thank Taryn Dinkelman, Craig Loschmann, Susan Pozo, Brian Dillon and participants at the GLM | LIC Research Conference and seminars at the Centre on Migration, Policy and Society, the Refugee Studies Centre and World Bank for helpful comments and suggestions. This work was supported by the UK Department of International Development (DFID) and the Institute for the Study of Labour (IZA) Growth and Labour Markets in Low Income Countries Programme (GLM | LIC). The views expressed in this document are not necessarily those of DFID, IZA or GLM | LIC.
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1. Introduction

International migration is often temporary and the evidence suggests that many migrants return home to take advantage of a higher return in their home country to skills acquired abroad (Dustmann et al., 2011). Examples of these skills include knowledge of a new language, different markets and production techniques. There is substantial evidence that international migration experiences often result in a wage premium upon returning home (Co et al., 2000; Barrett and Goggin, 2010; Reinhold and Thom, 2013; Wahba, 2015). Several studies have also found that migrants accumulate resources for later investments in the home country (Yang, 2006) and that returnees are particularly likely to become entrepreneurs upon return (Dustman and Kirchkamp, 2002; Mesnard, 2004; McCormick and Wahba, 2001; Piracha and Vadean, 2010).

The previous literature has focused on the case of "voluntary" migration. However, millions of migrants around the world are forced to leave their home countries in order to escape violence. The United Nations Population Division estimates that there were 19 million international refugees worldwide in 2014 and the majority of these, over 80%, are in neighboring developing countries (UNHCR, 2015a). Many of these refugees eventually become "return migrants" and the consequences of being a returnee are likely to be very different in a conflict/post-conflict context.

In situations of conflict, migration might take place even if the expected earnings gap between the host and home country is small or even negative. Economic considerations are relevant, but the level of violence often escalates abruptly during crises and security is the main determinant of migration. In addition, those escaping conflict usually have limited transportation options and often have to walk to their destination (Durieux, 2008), a fact that limits the set of destinations available and the possibility of making significant economic gains from migration. Moreover, in a conflict context households often leave behind livestock, land and other assets that are difficult to reclaim in the post-conflict period (Ruiz and Vargas-Silva, 2013).

The decision to return is also likely to be affected by different factors in a conflict context. A decrease in the level of violence back home is likely to be a key determinant of the timing of voluntary returns. However, return is often involuntary. This includes forced repatriations and cases in which the host country considers that international protection is no longer justified and declares refugees to be illegal residents (Black and Koser, 1999). A case of involuntary return contrasts widely with a case in which returnees are able to decide the timing

of their return and to take advantage of the differences in the returns to skills between the two countries.

It is possible to think that there might also be potential skills and labor market experience gains from international migration and return in a conflict/post-conflict context. Refugees, including those in camps, are often involved in trading relationships with host communities and participate in host labor markets. For instance, the trade in milk and meat between Somali refugee camps and neighboring communities in Kenya was estimated to be USD 3 million for 2010 (Enghoff et al., 2010). In Tanzania the presence of refugees from Burundi and Rwanda initially led to a "huge upsurge in business and trade conducted by both hosts and refugees" (Whitaker, 2002). Products which were previously exported to Burundi and Rwanda were now traded in refugee camps inside Tanzania and in many cases refugees used food aid to trade with host communities. Refugees also participate in host labor markets and sometimes even displace local workers (Ruiz and Vargas-Silva, 2015a; 2015b).

Yet, sometimes the host country imposes restrictions on the movements and economic activities of refugees. For instance, Ongpin (2008) explains that Tanzania introduced restrictive legislation a few years after the arrival of the refugees which prohibited refugees from seeking employment outside the camps or possessing farms within the camps. This resulted in high levels of inactivity and made refugees highly dependent on humanitarian aid (UNHCR, 2009; Harild et al., 2015). There are also other factors that may lead to high levels of inactivity of forced migrants. For instance, Lehrer (2010) explains that a "culture of idleness" developed over time in displacement camps in Northern Uganda and resulted in high levels of inactivity for different groups, particularly men.

In this paper we explore the economic implications of being a returnee in a situation in which conflict was the original driver of a large-scale migration followed by massive return migration after the end of the conflict. For the empirical analysis we use longitudinal data from Burundi, a country which experienced a major civil conflict between 1993 and 2000. We define a returnee as someone who crossed an international border for at least three months and later returned to the community of origin. We use a simple theoretical model to show how the migration and return experiences of individuals in situations of conflict can lead to different economic outcomes in comparison to those who never migrated (i.e. stayees). We then use survey data to test differences in livestock levels between returnees and stayees. As noted by

Bundervoet (2009), livestock in Burundi is the main form of capital accumulation and acts as a savings and insurance mechanism. Finally, we explore the role of economic activities (during migration and current), vulnerability to crime and health shocks, time since return, and time abroad as potential key factors explaining the differences between returnees and stayees.

A large share of Burundi's population was displaced to other countries during the conflict, with neighboring Tanzania being the main destination of migrants. In fact, at the time the Burundian refugee population was the second largest refugee population worldwide, only behind Afghan refugees (Vorrath, 2008). After a few years Tanzania closed all refugee camps, stopped providing legal protection to the refugees and repatriated the remaining camp residents to Burundi (European Commission, 2009; Harilds et al., 2015). The large majority of Burundian refugees from the 1993-2000 conflict have now returned to the country and it is therefore possible to explore the medium-term implications of the international migration experiences of Burundian returnees. We use countrywide panel data collected in 2011 and in 2015. The survey has detailed information about livestock and economic activities of returnees and stayees. We also have information on returnees' economic activities just before and during migration.

In addition, we explore whether the dynamics have changed across rounds of the survey. It is possible that any negative or positive gaps between returnee and stayee households have disappeared or increased over time. For instance, Verwimp and Muñoz-Mora (2013) estimate that it took 8 to 10 years after return for the level of welfare of internally displaced households in Burundi to converge to that of the non-displaced households. O'Reilly (2015) indicates that in Northern Uganda returnee households experienced a growth rate of per capita consumption significantly higher than comparable non-returnee households.

We control for the level of violence exposure during the conflict period and other key factors in the estimations. Yet, there is still a possibility that unobserved factors have affected the likelihood of being an international migrant (and therefore a returnee) in the first place. We use several techniques to address this possibility. First, we use geographical factors (i.e. proximity to the border of Tanzania) as an instrument in our estimations. In the case of Burundi most displacement took place by foot and distance to Tanzania was one of the key determinants of being an international migrant. Second, as a robustness check, we use propensity score matching in order to compare outcomes of returnee and stayee households.

Our results show that returnee households have significantly lower livestock levels than stayee households. Returnees are more likely to engage in agricultural activities for subsistence or as employees. These activities are associated with lower livestock levels. The evidence also suggests that legal and practical restrictions on economic activities in Tanzania could have resulted in high levels of inactivity while in displacement, a factor associated with a deterioration/loss of skills. This could also be a factor explaining the economic gap between returnee and stayee households. There was no evidence in support of other possible channels such as higher vulnerability to crime or poorer health conditions. Finally, the gap between returnee and stayee household decreased with length of time since return. However, the results do not change with variation in length of time abroad.

2. Conflict and forced displacement in Burundi

Burundi is a landlocked country in the Great Lakes region of Africa. It is a relatively small country (27,830 square kilometres) and has consistently ranked as one of the poorest in the world. The country occupied the 184th place (out of 188) in the Human Development Index in 2014 (United Nations Development Programme, 2015). Gross national income per capita was just USD 270 in 2014, well below the average for sub-Saharan Africa (UDS 1,699). The country is densely populated and while close to 90% of the population depends on subsistence agriculture, cultivable land is relatively scarce (World Bank, 2015).

The country is divided along ethnic lines between Hutus and Tutsis. Hutus represent the majority of the population (about 85%), but Tutsis have historically maintained control of the key Government positions (Krueger and Krueger, 2007). The first democratic elections of Burundi were held in 1993. The winner of the election, Melchior Ndadaye, was the first Hutu president of the country. Ndadaye was assassinated a few months after the election. This assassination and the political events that followed led to a long civil war in which an estimated 300,000 people were killed (Ngaruko and Nkurunziza, 2000).[5]

Hundreds of thousands of people fled their homes in search of refuge during the conflict period. In this study we are interested in those who left the country, most of whom were international refugees in neighboring countries. As shown in Figure 1, Burundi shares borders with the Democratic Republic of Congo (DRC, 236 kilometers), Rwanda (315 kilometers) and

[5] There are several sources for understanding the origins and development of the conflict and war in Burundi. Of particular interest was the escalation of conflict leading to "untargeted and random attacks" to the overall population. Refer to Bundervoet et al (2009), Uvin (1999), Voors et al (2012) for more information.

Tanzania (586 kilometers). From these neighboring countries, Tanzania has been historically perceived as the stable "safe haven" for refugees (Kamanga, 2005). In the early 1990s the DRC and Rwanda were also immersed in conflict (Ongpin, 2008). Therefore, it is not surprising that the Burundian conflict resulted in a large scale forced displacement to Tanzania (Ruiz et al., 2015). Official estimates from United Nations High Commission for Refugees (UNHCR) suggest that at the peak of the refugee crisis there were nearly half a million registered Burundian refugees in Tanzania (UNHCR, 2008).

[Figure 1]

Figure 2 reports the UNHCR estimates of the number of Burundian refugees in Tanzania in mid-2000 per province of origin in Burundi (in brackets). The second number in each province is the number of refugees from that province as a share of the entire population of the province as recorded in the 1990 Census (in parenthesis). As evidenced by Figure 2, most of the refugees came from provinces which border Tanzania. This is expected as a large portion of the refugee migration took place by foot.

[Figure 2]

Burundian refugees in Tanzania were placed in refugee camps in the north-western part of the country (Maystadt and Verwimp, 2014). Unlike the previous cohorts (i.e. 1972 refugees), Burundian refugees fleeing to Tanzania from 1993 onwards were not given land for agricultural activities (Harild et al., 2015). Still, many did engage in casual agricultural employment in neighboring villages shortly after arrival (Ruiz and Vargas-Silva, 2015b). Whitaker (2002) explains that in some areas close to the camps the wage rate for casual work initially decreased by 50%. However, over time the Tanzanian Government restricted the movement of refugees to four kilometers from the camps and imposed limitations on the types of economic activities that refugees could engage in (Millner, 2013). Refugees could not legally work outside camps or own farms in the camp areas. As a result many of these refugees were fully dependent on international aid support for the entire duration of their stay in Tanzania (Harild et al., 2015).

The Arusha Peace and Reconciliation Agreement was signed in 2000, putting an official end to the conflict. A large wave of return migration from Tanzania to Burundi started in 2001. As shown in Figure 3, around 560,000 refugees returned to Burundi from Tanzania during the 2001 – 2013 period. This number includes children of Burundian refugees who were born in Tanzania (Fransen, 2015). The peaks in 2008 and 2012 respond to the closing of refugee camps

by Tanzanian authorities, as residents of these camps were required to return to Burundi (i.e. Lukole refugee camp in 2008 and Mtabila refugee camp in 2012).

[Figure 3]

Over 200,000 were displaced from Burundi to neighboring countries in 2015, with over 100,000 going to Tanzania (UNHCR, 2015b, 2015c). This is the first episode of large forced displacement in the country in over a decade. The displacement is the result of increasing tensions and violence in response to the announcement in April 2015 that the President was running for a third term in office. Many interpreted a third term in office as a violation of the Arusha peace agreements. The data collection for this paper finalized about six weeks before the announcement of the President and before this new wave of displacement (more details below).

3. Theoretical background

Consider a two period problem, with the first being the period of (possible) migration and the second being the period of (possible) return. Income at home (Y_H) and abroad (Y_A) depends on the skills set of the individual. In the first period the individual has a skill set which is based on home country experiences (SK_H) and, if migration takes place, in the second period the individual has a set of skills transformed by the international experience (SK_A). The changes in skills could include positive aspects such as learning a new language or production technique. While the expected home-host country earnings gap may be positive in the first period, this may reverse in the second period as the individual accumulates skills abroad that are rewarded more back home. This in turn may prompt the decision to return (Dustmann and Görlach, 2015). However, there could also be a loss, deterioration or downgrading of skills because of a mismatch between skills and activities or, particularly in the refugee context, long periods of inactivity. Below we present evidence of high levels of inactivity while abroad for the returnees in our sample.

While economic considerations are important, the difference in expected security levels at home (SE_H) and abroad (SE_A) also has a major effect on the individual's decision to migrate and return in the conflict context (Ibañez and Velez, 2008). Finally, there are costs associated with migration (C_M) and return (C_R).

As explained above, in many cases, including Burundi, return is involuntary for a large share of the refugees. For simplicity let us assume that there is no possibility of being a permanent migrant (i.e. everyone is back in the home country in the second period). The main

point that we make below is not affected by this assumption, but it is easier to show.[3] Using a simple linear model, the individual would like to move abroad in the first period if:

$$([Y_A^1(SK_H) + Y_H^2(SK_A)] + [\theta^1 SE_A^1 + \theta^2 SE_H^2] - [C_M + C_R]) > \quad (1)$$
$$([Y_H^1(SK_H) + Y_H^2(SK_H)] + [\theta^1 SE_H^1 + \theta^2 SE_H^2])$$

Where the θ^i represent the relative weights of security during both periods, the superscripts denote the periods (i.e. first period = 1, second period = 2) and the subscripts denote the location (i.e. home = H, abroad = A).

It is possible to re-write (1) as:

$$Y_H^2(SK_H) - Y_H^2(SK_A) < [Y_A^1(SK_H) - Y_H^1(SK_H)] - [C_M + C_R] + \theta^1[SE_A^1 - SE_H^1] \quad (2)$$

Note that a high security gap in the first period (i.e. $SE_A^1 - SE_H^1$) could lead to migration (and return) taking place even if it is not economically beneficial (i.e. $Y_H^1(SK_H) > Y_A^1(SK_H)$ and $Y_H^2(SK_H) > Y_H^2(SK_A)$). For instance, the individual could be aware of the practical and legal limitations to economic activities abroad and the possible loss/deterioration of skills for the future, but the difference in expected security levels could be large enough to still encourage migration. This differs from the purely "economic" migration context in which security does not play a major role.

In the empirical section we explore current differences in livestock levels between returnee and stayee households. This relates strongly to the left-hand side factors in (2). The first term on the right-hand side of (2) is the cost of migration and return, which relates strongly to pre-migration distance from the border, information that we have in our dataset. The second term on the right-hand side of (2) is the earnings gap during the first period (at home and abroad). We have some related information on this in the survey (i.e. pre/during migration activities and pre-war livestock levels). The last term in (2) reflects the security levels at home and abroad. For the most part security levels in Tanzania where relatively high. Most of the variation in security

[3] It is also possible to include other factors in the discussion such bias for home consumption or accumulation of savings abroad without changing the main idea.

relates to security levels at home. We have information on conflict intensity at the community of origin level, which should serve as a good proxy for security levels.

4. Methodology

4.1 Data

The data collection for this study took place between January and early March of 2011 and 2015 in all 17 provinces of Burundi. For the 2011 survey the primary sampling unit in Burundi was the *colline*. One hundred *collines* were selected distributed over the provinces according to the demographic weight of these provinces in the 2008 Burundi Census. Within each *colline* a *sous-colline* was randomly chosen to conduct interviews. Within each *sous-colline* 15 interviews were conducted with randomly selected households (total 1,500 households) and one community representative. The 2015 survey was a follow up with the same households and, if possible, community leaders. Figure 4 shows the distribution of the communities across Burundi. The number of households interviewed by province ranged from 45 to 135.

[Figure 4]

In this study we use the community, household and individual components of the survey. We exclude the households from Bujumbura, the capital, due to the fact that these households are in an urban environment with very different economic dynamics from those in rural Burundi. Also, the conflict and displacement dynamics were different (Verwimp and Van Bavel, 2014). The re-interview rate of households in rural Burundi was over 90%. After excluding households in Bujumbura we are left with a total of 904 households living in 87 communities for which we have complete data in 2011 and 2015.

We start the analysis by looking at the implications of household returnee status on livestock levels. In order to standardize the livestock across individuals we use Tropical Livestock Units (TLUs). Following Bundervoet (2009, 2010), we use the following units as weights: 1 cow/ox = 1 TLU, 1 sheep = 0.17 TLU, 1 goat = 0.17 TLU, 1 pig = 0.25 TLU and 1 fowl = 0.01 TLU. After standardizing the livestock in TLUs we divide the standardized number by the number of adult members of the household. As such, our dependent variable is livestock in TLUs per adult household member (defined as those who are 14 years of age or older).

Table 1 reports the mean value of livestock for stayee and returnee households. In the table returnee households are defined as households with at least one member who is a returnee. In the regressions below we also show results with alternative definitions of a returnee

household. Returnee households have a lower average livestock than stayee households. The gap is equal to 0.06 TLUs per adult member in 2011 and 0.08 TLUs per adult member in 2015.

In order to put these numbers in context it is possible to compare with previous studies on Burundi. For instance, using data from Burundi's 1998 Priority Survey, Bundervoet (2010) finds that the average household livestock in provinces strongly affected by war was 0.68 TLUs, while in other provinces it was 0.62.[4] He does not provide details about the average number of adults per household in the sample, but if we divide his reported average household livestock by the average number in our sample (i.e. 3.3) we would get a TLU per adult of between 0.19 and 0.21 for his sample. This number similar to the average for stayees in our sample across periods and suggest that, based on the limited information available, there has not been much growth in livestock levels in Burundi over time.

In Table 1 we also show mean differences in other related variables that confirm the gap in economic conditions between stayee and returnee households. The first variable is a dummy indicating that the respondent believes that the household is in a relative worse economic situation than other households in the community. Close to 53% of the respondents in returnee households indicated that this was the case (both rounds) compared to 42% of the stayee households. The second variable is a dummy indicating that the household typically has difficulty meeting its food needs at least once a month. This is the case for 62% of the returnee households versus 52% of the stayee households.

4.2 Instrumental variable estimation

The main estimations are a series of regressions along the following lines:

$$Y_i = \delta_i + \beta R_i + \theta X_i + \varepsilon_i \qquad (3)$$

Where Y_i is the outcome of interest for household (or individual) i, δ_i is the province dummy, X_i are a series of individual, household and community level controls and ε_i is the random error. We present results using each round of the survey separately and together. In estimations in which we pool both rounds of the survey we add a time dummy and all estimations include robust standard errors.

[4] Provinces strongly affected by the conflict at the time were Bubanza, Bujumbura rural, and Cibitoke.

The coefficient of interest for the analysis is β. The variable R_i indicates a returnee individual or household. We explore results using different specifications of R_i at the household level. First, we use the share of household members who are returnees. Second, we use a dummy indicating that at least one member of the household is a returnee. We tried other variations such as a dummy variable indicating that the head of the household is a returnee and results are robust to these variations in definition. Table 2 provides descriptive statistics for the control variables included in X_i and Appendix 1 includes the definition and source of all the variables included in the estimations.

[Table 2]

As explained above, the Tanzanian Government closed the refugee camps and demanded the return of the refugees displaced by the 1993-2000 conflict to Burundi. The large majority of these refugees returned to Burundi (Harild et al., 2015; Ruiz and Vargas-Silva, 2015b). Hence, selection in terms of return migration (i.e. returning or staying) is unlikely. Moreover, the large majority of returnees returned to their region of birth. In the estimation using individual data to explore the role of economic activities (see Section 6) we limit the analysis to those adults who either reside in the community where they were born, or who reside in a neighboring community. This is true for 82% of the adults in the dataset and over 90% reside in their province of birth. The estimates are very similar for return migrants and for those who never left the country. Previous explanations for the high share of returnees settling in their communities of origin include that land is inherited and difficulty to access in other ways (Fransen, 2015) and that there is strong emotional attachment to family land (Hovil, 2009).

There is also substantial evidence that exposure to conflict in Burundi was random (Voors et al., 2012; Uvin, 1999). That is, exposure to conflict was largely exogenous to household characteristics and it did not relate to factors such as wealth and education. We use information from the community survey to control for conflict exposure. However, even if exposed to the same level of conflict, some individuals might be more likely than others to move abroad in order to scape conflict. As such, one possibility of bias in our case relates to the likelihood of being an international migrant in the first place.

The literature on forced migration suggests that even if random conflict is the main driver of emigration, those individuals from better off families can travel further and select better locations (Van Hear, 2006). Therefore, the returnees in our sample could have come from better

off households in the pre-conflict period. We explore the role of pre-war livestock further in this section and in the robustness section. Yet, there could be other related unobserved factors that affect the likelihood of being a returnee or having a returnee as a member of the household. In order to control for this possibility we need an exogenous factor that affects the likelihood of being an international migrant.

One key observable aspect which is likely to affect the likelihood of being a migrant/returnee is the difficulty of travelling to Tanzania. Geographical features play a key role in this regard, particularly in Burundi where a substantial portion of the displacement occurred by foot. One obvious factor that should make it more difficult to get to Tanzania is proximity to the border. In the estimation we use the logarithm of the inverse of distance to the border as an instrument for the likelihood of being a refugee/returnee. We use the logarithm of proximity to account for the fact that some of the communities are very close to the border.

The main worry about this instrument is that proximity may relate to unobserved factors that affect household wealth or economic activities. We conduct several analyses to explore this possibility. First, for older households (i.e. those which were established before the start of the conflict in 1993) we collected pre-conflict livestock data. As explained by Bundervoet (2010) there was a significant decrease in the livestock levels in Burundi as a result of the war. However, pre-war livestock levels should provide a good idea of the economic background of the household. As shown in the first column of Table 3 there is no statistically significant relationship between proximity and pre-war livestock. While the measure of pre-conflict livestock is informative, caution should be exercised while interpreting this variable as there could be issues related to the long recollection period as shown by previous studies (e.g. Beegle et al., 2012).

Another possibility is to look at education levels. Primary education in Burundi is compulsory for children between the ages of 7 and 13. However, the war destroyed a quarter of the country's schools, a significant portion of the teaching staff was killed and recruitment of new teachers was interrupted during the conflict (US Department of Labor, 2001). We focus on the years of education of those who were 14 years of age and older at the start of the conflict in 1993. The war should not have affected the educational outcomes (i.e. primary school education) of this group. As shown in Table 3 there is no significant impact of proximity on years of education or the likelihood of finishing primary school.

We can also use the information from the survey on the main economic activities of returnees just before migration. Given that this specific information was only collected for a sub-sample of returnees (i.e. one adult returnee per household) and there is no comparable information for stayees, we can test the relationship of economic activities just before migration and proximity to the border for some returnees only. As shown in columns 3, 4 and 5 of Table 3 there is no significant relationship between proximity to Tanzania and pre-migration economic activities.

Finally, in the last column of Table 3 we show that proximity was not correlated with the likelihood of being an IDP household (i.e. displaced within Burundi). This relates well with accounts of the conflict and displacement, which were widespread. As we show below, proximity to Tanzania only relates to the likelihood of being an international returnee (i.e. those who crossed the border).

[Table 3]

Table 4 reports the results of the first stage estimations. The results suggest that proximity to the border has a strong positive effect on the likelihood of being a refugee. The value of the *F*-test of the excluded instrument test is also very high.

[Table 4]

5. Impacts on livestock

Table 5 reports the impact of being a returnee household on livestock levels. The OLS estimates (columns 1, 5 and 9) suggest that the effect is negative and significant for all periods. However, the effect is not significant for the IV 2SLS estimations in the first period (columns 2 and 3). For comparison purposes we also show the results from an alternative estimation using an endogenous binary-variable model.[5] The size of the coefficient is broadly similar, but the results are highly significant in all periods. The coefficient for the IV estimation using both rounds and controlling for relevant factors (column 11) suggests that, on average, a household with at least one returnee has a livestock per adult which is about 0.16 TLU smaller than the average stayee household, which is broadly the equivalent in TLUs to one goat per household adult member (or an 80% reduction in TLUs compared to the mean of stayees). This result suggests a very large livestock gap between returnee and stayee households in rural Burundi.

[Table 5]

[5] See Chapter 21 of Woodridge (2010) for further details of the estimation.

6. The role of economic activities during and after migration

As we explained in the theoretical section, inactivity while abroad can have implications for income generation upon returning to the home country due deterioration/degradation of skills. In this section we look at information on economic activities to shed some light on this possibility.

One adult returnee per household was randomly selected during the data collection for a separate in-depth interview about experiences before, during and just after migration. This information includes the economic activities of individuals during those periods. The top portion of Table 6 summarizes the main economic activities of returnees while abroad, while the bottom portion provides information on activities just before migration. Column (1) contains information on the main economic activity, while column (2) reports on all economic activities. In column (2) we are also able to separate agricultural employees from non-agricultural employees.

Close to one third of the returnees with available information were inactive while abroad, compared to only 11% just before migration. This high level of inactivity among migrants in the context of forced displacement has also been documented in other contexts (e.g. Lehrer, 2010) and corresponds well with stories about the dependence of refugees on food rations from international agencies and the legal restrictions that refugees faced for working outside the camps (Harild et al., 2015; West and Wambugu, 2003). Also, the share of employees who engaged in agricultural work while abroad is substantially higher that in the pre-migration situation. Finally, while farming for subsistence was very important for returnees in the pre-migration period (main activity of 71% of respondents), this was not the case during migration (main activity of just 23% of respondents). Again, this coincides well with the legal limitations for Burundian refugees to cultivate plots while in Tanzania.

[Table 6]

We cannot test the implications of past labor market experiences on current livestock levels because we only have pre-migration information for a sub-set of returnees and there is no comparable situation for stayees. Also, we do not have good data on current income in the survey. Given the rural nature of the region compensation for work is often provided by payment in kind and there is a strong reliance on farming for subsistence. However, we can still look at current economic activities and see if there are major differences between returnees and stayees in this regard.

In Table 7 we present the impact of returnee status on current main economic activity. In addition to the household controls explained above we add individual controls for marital status, gender, age, education and IDP status of the individual. The results suggest that being a returnee has a negative impact on having self-employment as the main activity. This result contrasts with the evidence from the "economic" migration context in which returnees often have a higher likelihood of being in self-employment (e.g. McCormick and Wahba, 2001). On the other hand, returnees have a significantly higher chance of having farming as their main economic activity (a gap of about 24 percentage points).

[Table 7]

Main economic activity is not the whole story. Given the importance of farming for subsistence in Burundi it is important to look at all economic activities. Table 8 explores activity participation once we allow the individuals to participate in more than one activity. Being a returnee has a strong positive impact on the likelihood of being an agricultural worker and subsistence farming. On the other hand, the coefficients for self-employment and being a non-agricultural employee are negative but not significant.

[Table 8]

Overall the greater tendency of returnees to depend on the agricultural sector (for subsistence in their own plots or as employees) and lower likelihood of self-employment could explain some of the observed livestock difference between returnee and stayee households if agricultural activities result in less income than other economic activities. In order to explore this possibility in Table 9 we provide the average household livestock levels by economic activity for *stayees*. By using stayees we can get a good idea of the overall livestock consequences of choosing certain economic activities without worrying about the possible effects of migration. While we cannot claim any causal effects from the results in Table 9, it is clear that those in self-employment and non-agricultural employment live in households with higher livestock levels per adult. Meanwhile those stayees in agricultural employment and farming, the two activities in which returnees had a higher likelihood of participating, live in households with lower average livestock levels per adult.

[Table 9]

7. The role of household vulnerability

Another possible explanation of the livestock differences between returnee and stayee households is that returnee households are more vulnerable than stayee households. This vulnerability could be reflected in factors such as exposure to crime or health complications. With some family members abroad there could have been less protection of livestock and other assets and greater exposure to theft. As explained by Bundervoet (2009) livestock is a particularly easily lootable form of wealth in Burundi. There is also a substantial literature which documents the adverse effects of forced displacement on health outcomes (e.g. Ortiz Becerra, 2014; Thomas and Thomas, 2014). Returnee households with poorer health may not be able to accumulate livestock as fast as other households.

In the survey there are questions about thefts of livestock, cash, agricultural tools and other assets since 2005. As suggested by the results in Table 10, there is not a statistically significant difference between returnee and stayee households in the likelihood of experiencing livestock, tools or other assets thefts. Interestingly, returnee households are less likely to experience cash thefts. Of course, returnee households may be less likely to hold cash in the first place. We also conduct the estimation using a dependent variable which indicates any theft and the results was insignificant (not shown).

There are also questions about any instances of serious illnesses among the adult household members since 2005. The questions are asked separately by gender for adults. As shown in Table 10, returnee households are significantly less likely to have reported having household members who have experienced a serious illness. The results hold separately for adult males and adult females, but there is no statistical difference in the case of children.

Overall, there is no evidence that greater vulnerability of returnee households in terms of criminality or health outcomes helps explains the gap in livestock levels between stayee and returnee households.

[Table 10]

8. Time since return and time abroad

There could also be important differences in economic outcomes between recent returnees and those who returned several years back. As shown in Figure 5 there were two key periods in the return process. First, there are returnees who came back after a brief stay abroad shortly after the conflict ensued. That period goes from 1993 to 1999, with a substantial peak in 1994. The

second period starts after the signature of the peace agreement in 2000 and extends to 2010. The peak for this second period was 2005.

[Figure 5]

The median number of years since return in the 2011 round was 10 years. In order to test the importance of time since return we create two dummy variables. One variable indicates that it is a household with members who returned from abroad less than ten years ago in 2011 (i.e. less than 14 years ago in 2015) and a second one which indicates that it is a household with members who returned ten years or more ago in 2011 (i.e. 14 years or more in 2015). The top portion of Table 11 presents the results when we use these dummy variables in the estimations (separate estimations). The results suggest that the negative effect of the returnee household variable on livestock levels is driven by households with more recent returnees. It could be possible that returnee households are catching up over time with stayee households. However, it is important to keep two factors in mind. First, the Tanzanian Government restricted policies on refugees' economic activities over time. As such, those who returned several years ago could have had a different experience abroad in regards to economic activities. Second, those who returned early were voluntary returnees, while many of those returning later were "push-out" by the Tanzanian Government. In order to explore this further we estimated the regression changing the definition of a long-term returnee by subtracting one year at a time (i.e. from over 10 years to over 9 years, to 8, etc.). The result becomes significant (negative) for the first time for those who have been back for over six years.

[Table 11]

The implication of return migration may also vary depending of the amount of time spent abroad. Some migrants only stay a few months (at least three in our data), while others stay for over a decade. In order to analyze these possibilities we create dummy variables indicating that the members of the household stayed less/more than a decade abroad. In the bottom portion of Table 11 we analyze the impact of time spent abroad on livestock outcomes. The results change less when looking at variation in the length of time abroad.

9. Propensity Score Matching and pre-war livestock

In this section we test the robustness of the results by employing propensity score matching (PSM) techniques in order to match returnee households with a comparable group of non-returnee households. In this case the treatment (T) is being a returnee household. As we

explained above, the large majority of refugees from the 1993-2000 conflict returned home after the end of the war. Hence, the treatment is essentially being a refugee in the first place, a factor that was largely determined by distance to the border of Tanzania.

We start by estimating a probit model to predict the likelihood of being a returnee household based on pre-war characteristics and then we match households based on treatment status. We limit the analysis to households in which the household head was born before the start of the conflict in 1993. The pre-war characteristics include age, gender and province of birth of the household head, education levels of those household members who were adults before 1993 (i.e. 14 years of age or more) and pre-war livestock. These factors should not be affected by the treatment. Once we check for the balancing properties and common support across treatment and comparison group, we proceed to use the nearest neighbor estimation matching procedure. With the matching at hand, the difference in the outcome variable is calculated to estimate the average treatment effect of the treated.

Table 12 shows the results for the estimated effect of displacement and return on household livestock. As with the IV estimations there is evidence that returnee households have lower livestock levels compared to stayee households. However, different from the IV estimations it seems that the difference is greater and statistically significant for the first period only. One possible explanation for this is that the matching is based on pre-war characteristics only, which are likely to become less important over time.

[Table 12]

10. Conclusions

The world is currently experiencing global records of forced migration. Over time many of these forced migrants will return home. Knowledge about the implications of migrant return in the conflict context is essential in order to develop adequate policies in the post-conflict period.

In this paper, we explore differences in economic outcomes between return migrant households and stayee households using panel data from Burundi, a country which experienced large scale conflict-led emigration and massive post-war refugee return. The results indicate that returnee households have significantly lower levels of livestock, the main form of capital accumulation in the country. Our search for explanations supports the idea that returnees are more likely to engage in activities that are correlated with lower levels of livestock. One possible reason relates to the legal and practical restrictions on economic activities while in displacement

which resulted in high levels of inactivity and a potential loss/deterioration of skills. The livestock gap between returnee and stayee households is driven by more recent returnees (i.e. less than ten years since return).

An overall a key result from the paper is that the economic dynamics of returnees in the conflict context are substantially different from the evidence in the "economic" migration context. In the conflict context migration and return could take place even when not economically beneficially, leading to a substantial negative economic gap between migrants and non-migrants. Our results highlight the importance of allowing refugees the opportunity to engage in employment and other economic activities while in displacement and the need for continuous support after returning home.

Finally, it is important to note that the results of this study might not be applicable to other circumstances as we look at migrants who were mostly in a situation of encampment, with legal restrictions on movement and economic activities, who were required to return home by the host country and were returning to one of the poorest countries in the world. The consequences of return could be different in situation in which refugees are integrated into the host economy and have the option of staying permanently.

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Appendix 1

Variable	Definition
Livestock	Livestock index from 0 to 1 based on the following weights: cow/ox = 1, 1 sheep = 0.17, 1 goat = 0.17, 1 pig = 0.25 and 1 fowl = 0.01. It is divided by the number of adult members of the household. Adult = 14 years of age or older.
Employee	Dummy equal to one if the individual worked for someone outside the household as an employee during the last 12 months.
Self-employment	Dummy equal to one if the individual worked as self-employed (not including farming) during the last 12 months.
Farming	Dummy equal to one if the individual worked in farming for subsistence during the last 12 months.
Theft livestock	Dummy equal to one if the household experienced any livestock thefts during 2005-2011.
Theft cash	Dummy equal to one if the household experienced any cash thefts during 2005-2011.
Theft agricultural tools	Dummy equal to one if the household experienced any agricultural tools thefts during 2005-2011.
Theft other assets	Dummy equal to one if the household experienced thefts of any other assets during 2005-2011 (not including housing).

Illness women	Dummy equal to one if any adult female member of the household experienced a serious illness during 2005-2011. Adult = 14 years of age or older.
Illness men	Dummy equal to one if any adult male member of the household experienced a serious illness during 2005-2011. Adult = 14 years of age or older. Source: Burundi data collected by the authors.
Illness children	Dummy equal to one if any child member of the household experienced a serious illness during 2005-2011. Children = less than 14 years of age.
Proximity	Distance from community of birth of the individual to Tanzania in kilometers.
Returnee	Dummy equal to one if the individual was born in Burundi and spent a least three months living abroad.
Share returnees	Share of household members who are returnees.
Returnee household	Dummy equal to one if any of the household members is a returnee.
Female	Dummy equal to one if the person is female.
Age	Age in years.
Primary	Dummy equal to one if the person completed primary schooling.

Secondary	Dummy equal to one if the person completed secondary schooling.
Married	Dummy equal to one if the person is currently married.
Household size	Number of members of the household.
Child to adult ratio	Number of children in the household divided by number of adults in the household. Adult = 14 years of age or older. Children = less than 14 years of age.
IDP household	Dummy equal to one if at least one member of the household was an IDP.
Deaths in conflict	Dummy equal to one if at least 10% of the residents of the community were killed during the conflict.

Figure 1 – Burundi and vicinity

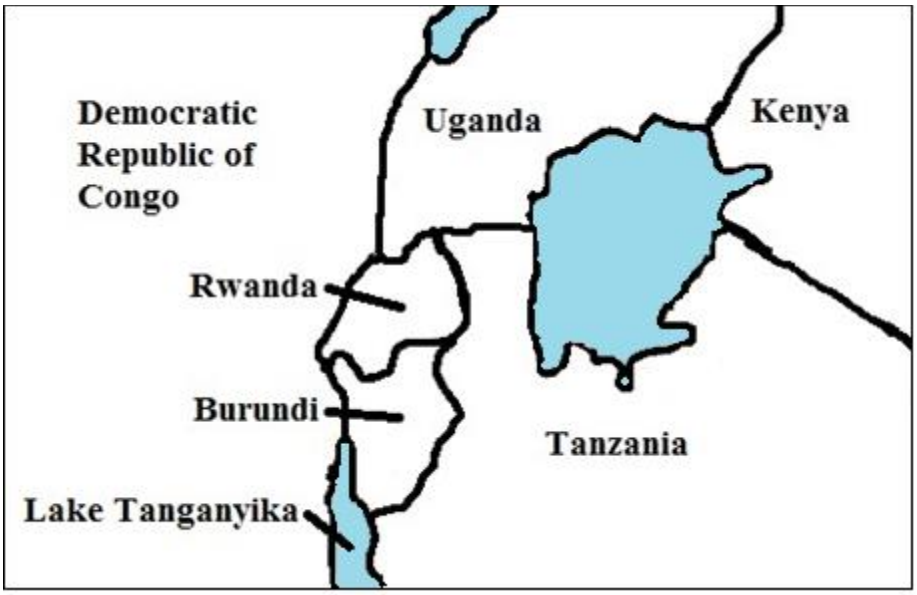
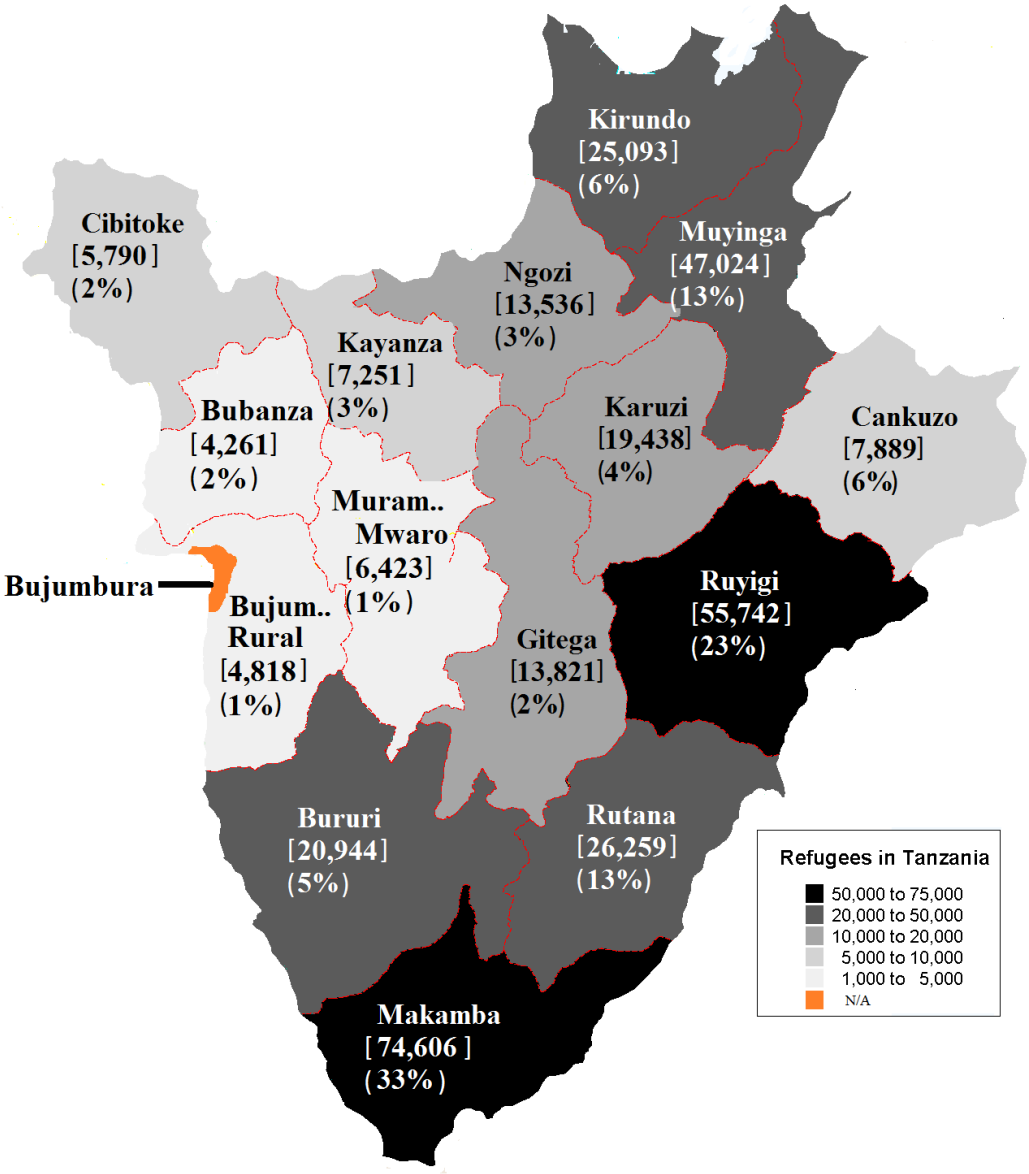
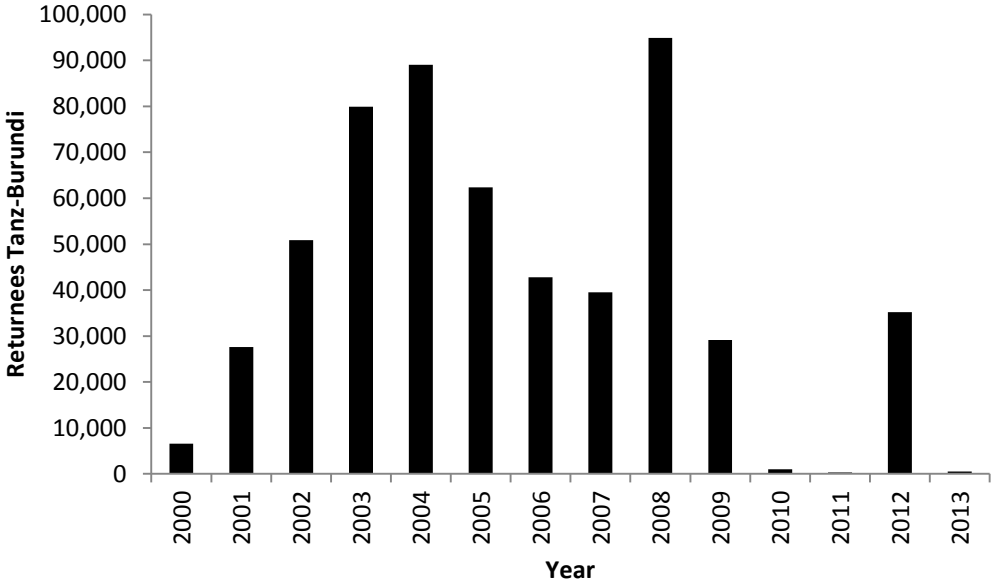


Figure 2 – Number of refugees in Tanzania per province of origin [brackets] and as a share of the province's 1990 population (parenthesis).



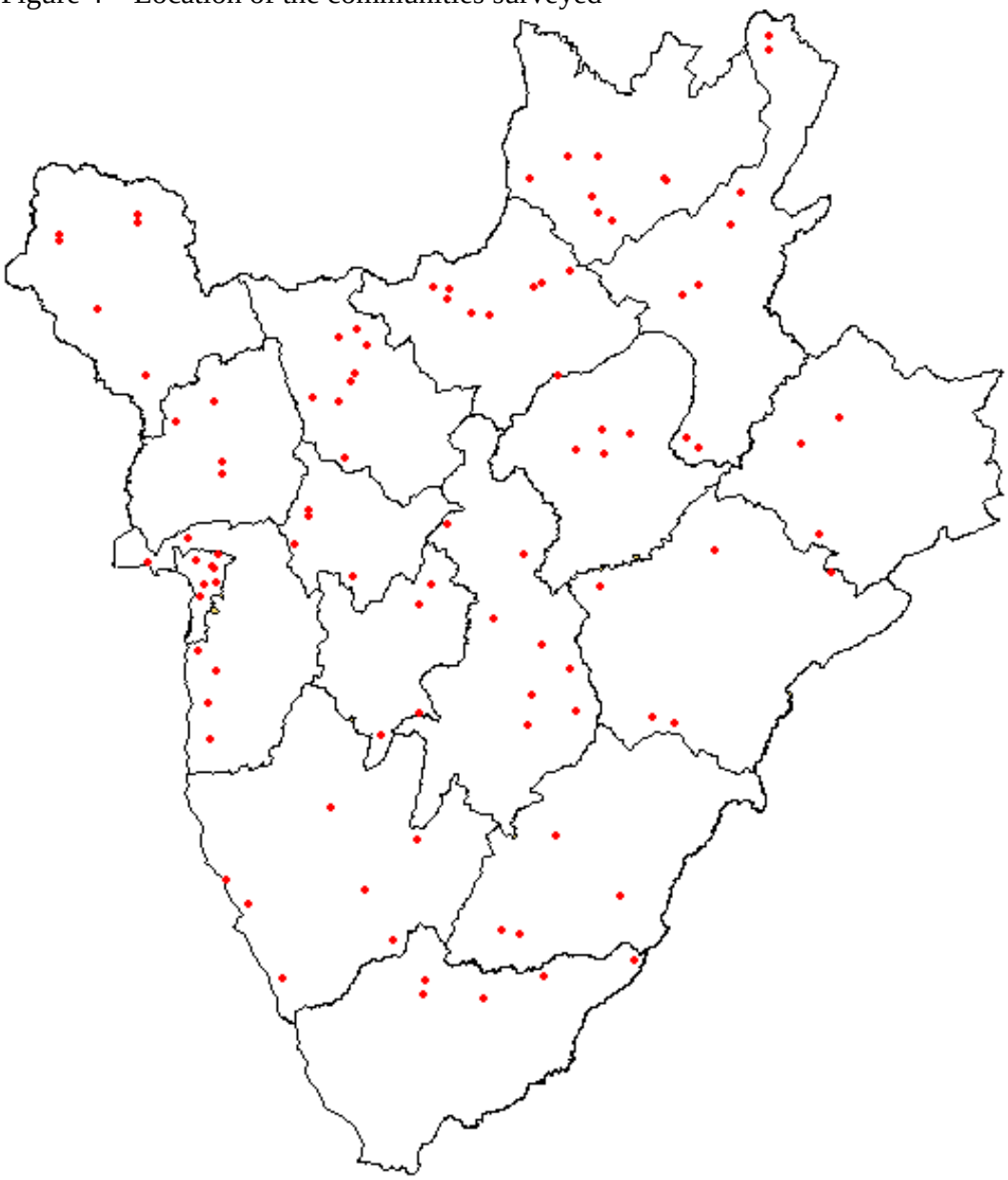
Note: data reflects the situation in mid-2000. Source of information on refugees in Tanzania is UNHCR. Data on share of the province population constructed with information from the 1990 Census. Note that Muramvya and Mwaro were one province during the period of interest.

Figure 3 – Returnees from Tanzania to Burundi.



Note: source of data is UNHCR.

Figure 4 – Location of the communities surveyed



Note: The data collection for this study took place between January and March of 2011 and 2015 in all 17 provinces of Burundi. The communities sampled were selected according to the demographic weight of these provinces in the 2008 Burundi Census. The Figure above shows the distribution of the communities across Burundi.

Figure 5 – Year of return of returnees in the sample

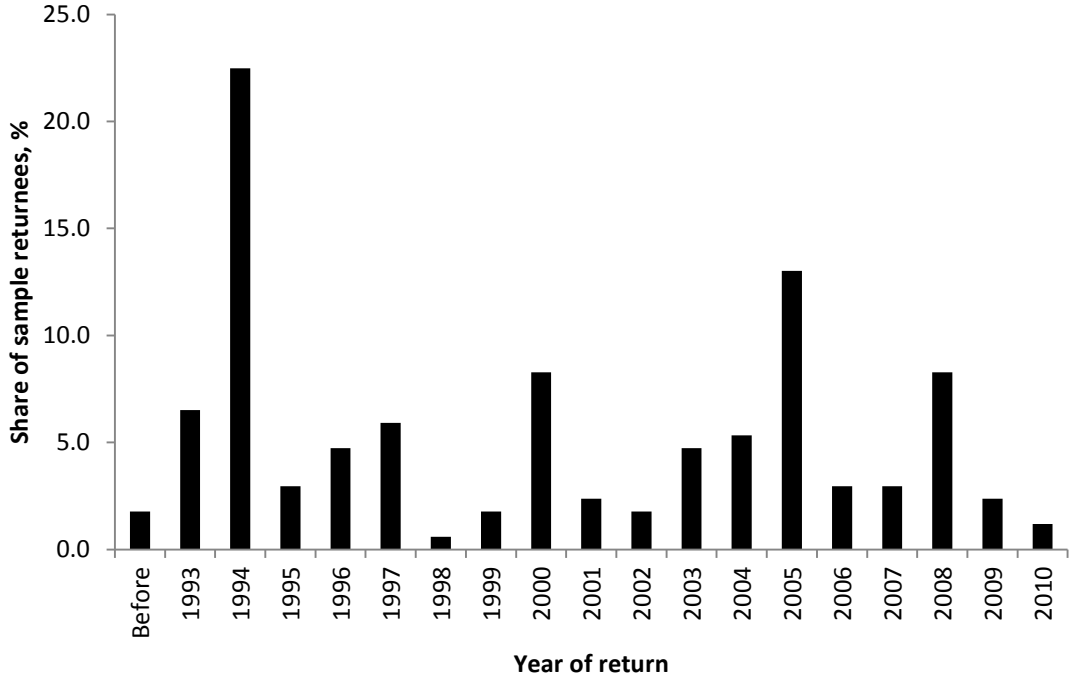


Table 1– Descriptive statistics for current household livestock.

Variable	Returnees			Stayees		
	2011	2015	2011 and 2015	2011	2015	2011 and 2015
	(1)	(2)	(3)	(4)	(5)	(6)
Livestock, TLU	0.10	0.16	0.13	0.16	0.24	0.20
Below average situation	0.51	0.55	0.53	0.40	0.45	0.42
Food insecurity	0.66	0.58	0.62	0.54	0.51	0.52
Households	150	150	300	754	754	1,508

Note: Returnee households are defined as those with at least one member who is a returnee.

Table 2 – Household/community level controls

	Returnees			Stayees		
Variable	2011	2015	2011 and 2015	2011	2015	2011 and 2015
	(1)	(2)	(3)	(4)	(5)	(6)
Age head	44.41	48.03	46.22	43.74	47.76	45.75
Female head	0.18	0.15	0.16	0.16	0.16	0.16
Primary edu head	0.19	0.25	0.22	0.24	0.30	0.27
Secondary edu head	0.01	0.02	0.02	0.03	0.03	0.03
Married head	0.79	0.83	0.81	0.82	0.83	0.82
Household size	5.60	5.90	5.74	5.54	5.70	5.62
Child to adult ratio	0.94	0.92	0.93	0.84	0.86	0.85
IDP household	0.17	0.17	0.17	0.29	0.29	0.29
Deaths in conflict	0.43	0.43	0.43	0.44	0.44	0.44

Note: returnee households are those households with at least one member who is a returnee.

Table 3 – Impact of proximity on pre-war livestock, pre-war education, pre-migration activities and IDP status.

Independent variable	Pre-war livestock	Pre-war years education	Pre-war primary school	Pre-migration employee	Pre migration self-employment	Pre-migration farming	IDP household
Proximity	-0.04	0.008	-0.04	-0.04	-0.01	0.08	-0.02
	(-0.35)	(0.04)	(-1.02)	(-0.56)	(-0.13)	(0.95)	(-0.55)
Household	X	X	X				X
Returnee				X	X	X	
Observations	446	667	690	124	124	124	904

Notes: Pre-war livestock only available for households which were established before the war. Education is for household heads who were 14 years of age or older at the start of the war in 1993. The information on pre-migration activities is only available for one returnee per household. IDP households are those were displaced for three months or more within Burundi. t statistics are included in parenthesis.

Table 4 – First stage results.

Instrument	Instrumented variable: Share of members who are returnees		Instrumented variable: Returnee household	
	(1)	(2)	(3)	(4)
	2011 round			
Proximity	9.13	8.95	0.18	0.16
	(4.72)***	(4.59)***	(5.09)***	(4.83)***
F-test IV	22.27	21.08	25.94	23.79
	2015 round			
Proximity	8.75	8.61	0.18	0.17
	(4.73)***	(4.68)***	(5.09)***	(4.85)***
F-test IV	22.33	21.89	25.95	24.18
	2011 and 2015 rounds			
Proximity	8.94	8.72	0.18	0.17
	(6.71)***	(6.51)***	(7.23)***	(6.89)***
F-test IV	44.99	42.41	52.34	48.66
Household controls		X		X

Notes: *** indicates that the coefficient is significant at the 1% level. Proximity = logarithm of the distance to the border with Tanzania in kilometers.

Table 5 – Impact of being a returnee household on livestock (TLUs).

Independent variable	2011				2015				2011 and 2015			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Share returnees	-0.00	-0.00	-0.08	-	-0.00	-0.00	-0.00	-	-0.00	-0.00	-0.00	-
	(-1.33)	(-0.87)	(-0.87)	-	(-2.04)**	(-1.94)*	(-2.08)**	-	(-2.42)**	(-1.97)**	(-2.09)**	-
Returnee household	-0.03	-0.09	-0.09	-0.14	-0.05	-0.20	-0.23	-0.25	-0.04	-0.15	-0.16	-0.19
	(-1.71)*	(-0.87)	(-0.88)	(-3.03)**	(-2.34)**	(-2.02)**	(-2.20)**	(-5.37)***	(-2.88)***	(-2.01)**	(-2.15)**	(-6.04)***
Household controls	X		X	X	X		X	X	X		X	X
IV		X	X	X		X	X	X		X	X	X
Binary				X				X				X
Observations	904	904	904	904	904	904	904	904	1,808	1,808	1,808	1,808

Notes: table shows results from separate regressions. “Share returnees” = share of household members who are returnees. “Returnee” = at least one household member is a returnee. *** indicates that the coefficient is significant at the 1% level. ** indicates that the coefficient is significant at the 5% level. * indicates that the coefficient is significant at the 10% level. t statistics are included in parenthesis.

Table 6 – Economic activities of returnees during and just before migration

Variable	Main activity	All activities
	During migration	
Employee	0.31	0.50
Agricultural employee		0.38
Non-agricultural employee		0.12
Self-employment	0.08	0.14
Farming	0.23	0.27
Education	0.04	-
Other/inactive	0.34	0.29
	Pre-migration	
Employee	0.09	0.24
Agricultural employee		0.15
Non-agricultural employee		0.09
Self-employment	0.05	0.17
Farming	0.71	0.79
Education	0.04	-
Other/inactive	0.11	0.10
Individuals	124	124

Note: information based on the in-depth interview and collected only for one adult returnee per household.

Table 7 – Impact of being a returnee on economic activities.

Independent variable	2011			2015			2011 and 2015		
					Employee				
Returnee	0.05	0.04	0.06	0.00	0.01	-0.05	0.02	0.02	0.00
	(0.53)	(0.52)	(0.68)	(0.04)	(0.04)	(-0.33)	(0.35)	(0.28)	(0.08)
					Self-employment				
Returnee	-0.09	-0.09	-0.11	-0.17	-0.19	-0.18	-0.13	-0.14	-0.15
	(-1.96)**	(-2.08)**	(-2.31)**	(-1.65)*	(-1.86)*	(-1.79)*	(-2.24)**	(-2.48)**	(-2.56)**
					Farming				
Returnee	0.17	0.20	0.18	0.23	0.25	0.28	0.20	0.23	0.24
	(1.48)	(1.86)*	(1.58)	(1.56)	(1.68)*	(1.84)*	(2.05)**	(2.43)**	(2.41)**
Individual controls		X	X		X	X		X	X
Household controls			X			X			X
IV	X	X	X	X	X	X	X	X	X
Observations	1,306	1,306	1,306	1,461	1,458	1,458	2,760	2,760	2,760

Notes: table shows results from separate regressions. “Returnee” indicates that the individual is a return migrant. Those with education as their main activity are excluded from the analysis in this table. *** indicates that the coefficient is significant at the 1% level. ** indicates that the coefficient is significant at the 5% level. * indicates that the coefficient is significant at the 10% level. t statistics are included in parenthesis.

Table 8 – Impact of being a returnee on all economic activities (2015).

Independent variable	(1)	(2)	(3)
	Agricultural employee		
Returnee	0.47	0.51	0.48
	(2.73)***	(2.96)***	(2.71)***
	Non-agricultural employee		
Returnee	-0.02	-0.03	-0.05
	(-0.22)	(-0.32)	(-0.40)
	Self-employment		
Returnee	-0.07	-0.10	-0.11
	(-0.46)	(-0.69)	(-0.75)
	Farming		
Returnee	0.25	0.27	0.25
	(2.25)**	(2.40)**	(2.12)**
Individual controls		X	X
Household controls			X
IV	X	X	X
Observations	1,461	1,461	1,461

Note: table shows results from separate regressions. "Returnee" indicates that the individual is a return migrant. Those with education as their main activity are excluded from the analysis in this table. *** indicates that the coefficient is significant at the 1% level. ** indicates that the coefficient is significant at the 5% level. * indicates that the coefficient is significant at the 10% level. t statistics are included in parenthesis.

Table 9 – Livestock levels in household by economic activity for *stayees*

Variable	Main activity	All activities
Employee	0.21	0.18
Agricultural employee		0.15
Non-agricultural employee		0.24
Self-employment	0.28	0.25
Farming	0.23	0.22

Note: table only includes stayees.

Table 10 – Impact of being a returnee on exposure to crime and health shocks (since 2005)

Independent variable	2011					
	(1)	(2)	(3)	(4)	(5)	(6)
	Theft livestock			Serious illness any member		
Share returnees	0.00	-0.00	-0.00	0.00	-0.00	-0.01
	(0.11)	(-1.24)	(-1.51)	(1.07)	(-1.97)**	(-2.09)**
Returnee household	0.01	-0.08	-0.11	0.04	-0.23	-0.26
	(0.58)	(-1.24)	(-1.52)	(1.33)	(-1.98)**	(-2.07)**
	Theft cash			Serious illness adult women		
Share returnees	0.00	-0.00	-0.00	0.00	-0.00	-0.00
	(0.56)	(-1.65)*	(-1.79)*	(1.00)	(-2.26)**	(-2.33)**
Returnee household	0.03	-0.12	-0.14	0.02	-0.21	-0.23
	(1.47)	(-1.65)*	(-1.79)*	(0.79)	(-2.31)**	(-2.36)**
	Theft agricultural tools			Serious illness adult men		
Share returnees	0.00	-0.00	-0.00	0.00	-0.00	-0.00
	(0.35)	(-0.19)	(-0.00)	(0.07)	(-2.32)**	(-2.34)**
Returnee household	0.02	-0.01	-0.00	0.01	-0.16	-0.17
	(1.17)	(-0.19)	(-0.00)	(0.27)	(-2.37)**	(-2.38)**
	Theft other assets			Serious illness child		
Share returnees	-0.00	0.00	0.00	-0.00	-0.00	-0.00
	(-0.22)	(0.51)	(0.31)	(-0.02)	(-0.88)	(-1.01)
Returnee household	0.01	0.02	0.02	0.01	-0.07	-0.08
	(0.77)	(0.51)	(0.31)	(0.61)	(-0.88)	(-1.00)
Household controls	X		X	X		X
IV		X	X		X	X
Observations	904	904	904	904	904	904

Note: *** indicates that the coefficient is significant at the 1% level. ** indicates that the coefficient is significant at the 5% level. * indicates that the coefficient is significant at the 10% level. t statistics are included in parenthesis.

Table 11 – Time since return and time abroad

Independent variable	2011		2015		2011 and 2015	
	(1)	(2)	(3)	(4)	(5)	(6)
Years since return in 2011						
Over 10 years	0.03	-0.34	-0.04	-0.34	-0.04	-0.34
	(-1.52)	(-1.10)	(-1.55)	(-1.03)	(-2.15)**	(-1.49)
Observations	847	847	847	847	847	847
0 to 10 years	-0.04	-0.09	-0.07	-0.20	-0.05	-0.15
	(-1.42)	(-0.77)	(-2.23)**	(-1.94)*	(-2.63)***	(-1.84)*
Observations	803	803	803	803	803	803
Time spent abroad						
Over 10 years	-0.06	-0.16	-0.05	-0.26	-0.06	-0.21
	(-2.23)**	(-0.98)	(-0.98)	(-1.58)	(-2.00)**	(-1.77)*
Observations	804	804	804	804	804	804
0 to 10 years	-0.01	-0.14	-0.04	-0.30	-0.03	-0.22
	(-0.61)	(-0.74)	(-1.65)*	(-1.62)	(-1.65)*	(-1.64)
Observation	878	878	878	878	878	878
Household controls	X	X	X	X	X	X
IV		X		X		X

Note: table shows results from separate regressions. Returnee households not included in the specific definition of the estimation (e.g. those who spent over ten years abroad when the dummy is for those who spent ten years or less abroad) are dropped from the sample and not included in the comparison group. Note that the same household could be in both categories (e.g. one member spend over ten years abroad and another spent less than ten years abroad). *** indicates that the coefficient is significant at the 1% level. ** indicates that the coefficient is significant at the 5% level. * indicates that the coefficient is significant at the 10% level. t statistics are included in parenthesis.

Table 12 – Average treatment effect of the treated: Livestock outcomes

Treatment	Treated	Control	Difference	t-stat	
				Standard	Bootstrapped
			Nearest Neighbor Estimator		
			2011		
Returnee household	0.09	0.22	-0.13	-2.83***	-2.01**
			2015		
Returnee household	0.15	0.19	-0.05	-1.09	-1.00