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Going Back Home: Internal Return Migration in Rural Tanzania

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Kalle Hirvonen
University of Sussex and International Food Policy Research Institute, Ethiopia
Email: k.hirvonen@cgiar.org

Helene Bie Lilleør
Rockwool Foundation Research Unit, Denmark
Email: hbl@rff.dk

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Abstract

While reasons for out-migration are relatively well understood, little is known about why people return to their rural origins. We contribute to filling this gap in the literature by using 19-year tracking data from rural Tanzania to estimate the patterns and determinants of return migration, and we find that return is largely associated with unsuccessful migration. For men, return is linked to poor job-market outcomes at the migration destination, and for women, to the ending of marriages. Female migrants who exchange transfers with relatives at home, and men who are financially supported by their families, are more likely to return.

Keywords

Migration, remittances, Tanzania, Africa, panel data

Introduction

Recent years have witnessed a rise in interest in internal migration in sub-Saharan Africa. Indeed, with the emergence of the 'African Growth Miracle' (Radelet 2010; Young 2012; McKay 2013), internal migration has become an important topic for policy-makers in Africa. In order to shed light on this area, economists have attempted to understand the patterns of structural transformation of the African economies and hence the patterns of rural-to-urban migration in sub-Saharan African countries (de Brauw, Mueller and Lee 2013; McMillan and Harttgen 2014; Rodrik 2014).[1] In the literature this type of physical mobility is, often implicitly, linked to the idea that individuals move in order to maximise their expected incomes (Harris and Todaro 1970). Despite this re-emerging interest in rural-to-urban migration, however, most of the internal migration in sub-Saharan Africa remains from rural areas to other rural areas (Lucas 2007; Castaldo, Deshingkar and McKay 2012). This type of movement may be motivated by marriage (Beegle and Poulin 2013), attempts to diversify rural incomes (Christiaensen, De Weerdt and Todo 2013), or both (Rosenzweig and Stark 1989).

While the reasons why people out-migrate internally are relatively well understood, little is known about why people return to their rural origins, especially in sub-Saharan Africa. In the Harris-Todaro framework, a return migrant[2] can be understood as an 'unsuccessful' migrant, someone who did not succeed in finding a formal job in an urban area. The magnitude of return migration then reflects the fluctuating conditions of the urban

[1] This type of structural transformation, where countries move away from agriculture to more productive sectors of the Economy, is typically accompanied by internal migration from rural to urban areas.

[2] It is worth clarifying that return migration is usually understood as occurring after a single long migration spell rather than after a number of repeated moves, each after shorter spells. This is in contrast to seasonal, temporary or circular migration, which are characterised in the literature by systematic and regular movements between the place of origin and the destination (Gmelch 1980; Skeldon 2012). Return migration is usually seen in the literature as a permanent or semi-permanent return to the place of origin (King 1986).

labour market, as well as lack of 'perfect knowledge' of employment opportunities available in urban areas. In a contrasting narrative, return migrants are seen as important change agents bringing new ideas and engaging in entrepreneurial activities after their return (De Vreyer, Gubert and Robilliard 2010; Démurger and Xu 2011; Chen and Hu 2012). Finally, if out-migration was part of household level welfare maximization (Stark and Bloom 1985), return is then '[…] the logical outcome of a "calculated strategy", defined at the level of the migrant's household, and resulting from the successful achievement of goals or target' (Cassarino 2004: 255).

In this paper, we attempt to unpack different patterns of and motives for return migration through an analysis of an extraordinarily long panel survey from Tanzania. We use a unique 19-year panel survey designed to track migration from and within the Kagera region in northern Tanzania. The tracking feature of the survey permits us to follow migrants (including return migrants) through their entire migration cycle, from the origin household to their destination (and back, in the case of return migrants), while at the same time also following the non-migrant family members at the place of origin. With three major rounds of data collection (early 1990s, 2004 and 2010), the dataset offers an unprecedented opportunity to analyse and document the extent, nature and determinants of internal return migration in an African context.[3]

Among migrants who left their baseline villages between 1991-94 and 2004, the rate of return migration found at interview six years later in 2010 was 14 percent. In a sample of prime-age (17-45-year-old) tracked panel respondents selected for the main analyses in this paper, the level of return migration was 17 percent. This corresponds to more than one in six of the original migrants going back home.

We also find that while self-selection into outmigration is linked to positive factors, selection into return migration has negative associations. Future return migrants as well as their parents have lower levels of education and originate from households which prior to the outmigration event had lower consumption levels compared to those of continuing migrants. In addition, for women, returning home is associated with the ending of marriages. The data on remittances suggest that the maintenance of links with the home community through financial interactions is an important factor in the decision to return, though with clear gender differences. Returning men receive considerable assistance from their home communities during their migration spell. For women, mutual exchange of small gifts with the extended family in the home community is a predictor of return. We believe that these transfers proxy for frequency of contact and we therefore interpret this finding to mean that women who maintain close links to their origin family are more likely to return.

[3] Only very few individuals from the original sample migrated outside Tanzania, permitting us to focus exclusively on internal migrants.

Once back home, return migrants do not seem to stand out in any positive way from the non-migrants in the home communities. In contrast to the evidence in the literature on *international* migration, we find that the returnees do not seem to be more entrepreneurial than the non-migrants; if anything, the opposite is true. In addition, despite considerably higher per capita consumption levels during the migration spell, after their return the consumption levels of return migrants are similar to those who never left the home community. Moreover, chronic illness rates are higher among the male returnees compared to the non-migrant and continuing migrant peers. Finally, using subjective questions on well-being, we also find that the returned women are less happy with their lives than both non-migrants and continuing migrants. These findings support the notion that return migrants are largely 'unsuccessful' migrants.

In the next section, we relate this paper to previous literature in the field and highlight the few contributions there have been to internal return migration in less developed countries, LDCs. In the third section, we describe our data and sample selection, while in the subsequent part we examine the migration movements and compare the characteristics of non-migrants, continuing migrants and return migrants. We then discuss our econometric approach. Next follows the regression results of predetermined selection into, and more recent determinants of, return migration. We then study the association between migrants' remittances and the decision to return, followed by an account of how migrants fare in their home communities after return. The conclusion sums up our results and their significance in the ongoing debate on return migration.

Literature review

The empirical analyses of reverse *internal* migration patterns in an African context have focused on macro-level accounts of reverse rural-urban flows.[4] Recent urbanisation studies using, for example, satellite imagery have shown that the high population growth rates in urban areas observed in many sub-Saharan Africa countries have slowed down, or are even stagnating (e.g. Potts 2009; 2012; Beauchemin 2011). This picture is supported by findings from a national household survey in Ghana, where high rates of urban-to-rural migration flow may, at least in part, be explained by return migration flows (Castaldo, Deshingkar and McKay 2012).

[4] Our literature review focuses on *internal* return migration. There is a larger body of work on *international* return migration. One of the earliest contributions in this literature, by King (1978), offers a framework for examining return migration. For a useful overview on various return migration theories in this context, see Cassarino (2004). A part of the empirical literature examines whether international return migrants are 'target savers' or 'life-cycle' migrants (see Borjas and Bratsberg 1996; Dustmann 2003; Yang 2006). Furthermore, several empirical analyses have focused on the labour market performance and entrepreneurial skills of international migrants after their return, and these analyses have generally found that return migrants out-perform non-migrants, either due to selection or to skills acquired during the migration spell (see De Vreyer, Gubert, and Robilliard 2010, and the careful literature review herein). These studies are typically based on survey data among returnees and non-migrants, with comparisons with continuing migrants relying on information from proxy respondents.

Only two papers discuss the actual return decision in an African context, both of them based on data from Kenya. Owuor (2007) examines the importance of a rural connection for urban migrants. Using quantitative and qualitative approaches, the author finds that male migrants who cannot support their families cope by sending their wives and children back to the place of origin. This strategy provides the family with access to self-produced food from rural farming activities. Falkingham, Chepngeno-Langat and Evandrou (2012) study the return migration decision and its determinants for older (50+ years) urban migrants in the slums of Nairobi, using a destination-based panel survey over a three-year period. They find that 13 percent of their sample had left Nairobi (presumably for their original home area); the existence of children living outside the slums was an important pull factor, and age and poverty represented typical push factors.

Other empirical analyses of internal return migration in developing countries originate from Thailand and China. In the Nang Rong district of north-eastern Thailand, 26 percent of migrants returned over a six-year period (Piotrowski and Tong 2010). The cross-sectional return rates in China are slightly higher and are estimated to be between 25 to 38 percent (Zhao 2002; Wang and Fan 2006; Démurger and Xu 2011), although these numbers may also capture circular migration due to institutional barriers to migration (the *hukou* system), as identified by Hare (1999) and Hu, Xu and Chen (2011).

The empirical analyses of Chinese return migration to rural areas referred to above are all based on interviews with households in the origin communities, and collected as cross-sectional data. Common areas of focus in these studies are self-reported reasons for return and the ways in which the economic activities or occupational choices of the returnees differ from those of the non-migrants. Two of the papers characterise return migrants as successful when the migration experience has enhanced their skill to such an extent that they engage in entrepreneurial activities (Chen and Hu 2012), become self-employed or obtain a high-ability job (Démurger and Xu 2011). The success-failure dichotomy is less clear-cut in Zhao (2002), whose analysis highlights the importance of having a non-migrant spouse to whom to return as a central element in the return decision. Family reasons are also important determinants of return in the study by Wang and Fan (2006), who also stress the negative reasons for selection into return migration and thus emphasise the concept of returnees being unsuccessful migrants.

In a study from Thailand, Piotrowski and Tong (2010) use a panel survey from rural origin communities that follows a cohort of young adults during a six-year migration window (1994-2000). These data are rich in that they follow migration from origin households over time, permitting an analysis of factors associated with the returnees. However, as with the studies from China mentioned above, the survey does not track the migrants themselves during the migration spell, and therefore the information on migrants originates from proxy respondents. In consequence, the comparison of the returnees with the ongoing migrants is

likely to suffer from considerable 'noise' due to asymmetric information between the migrants and the origin household.[5] Piotrowski and Tong (2010) find that economic determinants of return point to migration failure, while the non-economic determinants point to the significance of having close family members (spouse, children or mother) in the origin community. These results are thus similar to those of Zhao (2002) and Wang and Fan (2006), as these researchers also highlight the importance of family or of migration failure in the return decision.

Return intentions play a central role in a large body of literature that examines migrants' motives to remit (see the reviews in Adams 2006; Young 2011). In the New Economics of Labour Migration (Stark and Bloom 1985), remittances are viewed as an integral part of the household level diversification strategy (Cassarino 2004). Another hypothesis in this strand of literature is that migrants engage in strategic remittance behaviour in order 'to retain the prospect of ultimately returning home with dignity' (Lucas and Stark 1985: 914). Such transfers can also be understood as self-insurance, where the migrant buys 'a return insurance' so that the origin family does not deprive from him or her the right to return (Hoddinott 1994; Amuedo-Dorantes and Pozo 2006; de Brauw, Mueller and Woldehanna 2013). The empirical literature on this topic usually proxies future return migration with direct questions about the migrant's return intentions (Merkle and Zimmermann 1992; Brown 1997; Ahlburg and Brown 1998) or with income uncertainty in the destination area (Amuedo-Dorantes and Pozo 2006; de Brauw, Mueller and Woldehanna 2013). It is unclear, however, how well these proxies predict the actual return decision. Indeed, Ahlburg and Brown (1998: 128) concede that '[d]ata on individual return migrants are of course preferable to the attitudinal response that we employ'. Having such data at our disposal, and with information about who returns and who stays, we are able to capture the 'realised risk of return', and can therefore explore this question more directly than the earlier literature.

Similar to the current paper, the study by Tong and Piotrowski (2010) on Thailand is an exception in this regard. The authors have panel data based on origin surveys, which they can use to analyse how remittances to the origin community shape the *actual* return decisions. Their findings suggest that migrants planning to return 'use remittances to keep the return option open by maintaining membership in the origin household' (Tong and Piotrowski 2010: 85). However, since only small remittance amounts predict return, the authors argue that their results are indicative of a signalling (rather than a self-insurance) strategy whereby a migrant ensures continuing membership of the origin household.

[5] Recent empirical literature suggests that extended family members may deliberately hide information from others. For example, Baland, Guirkinger and Mali (2011) show how individuals in Cameroon opt for high-interest loans in order to conceal their true income. Similarly, using a lab experiment in Kenya, Jakiela and Ozier (2012) find that women were willing to reduce their income in order to keep it hidden. Finally, de Laat (2014) finds that split-migrant couples in the Nairobi slums devote considerable resources to acquiring information about their spouses.

As the foregoing shows, the evidence on internal return migration in an African context is surprisingly scant. The requirements of quality and quantity of data for a careful analysis of return migration are considerable, and we believe this may partly explain the dearth of research on this topic. Ideally, in order to describe return migrants, comparisons should be made both with the continuing migrants (the return migrants' former peers) and with the non-migrants in the home communities (their peers after return), and these comparisons should be made before, during and after the migration spell. An optimal survey would therefore collect iterative information directly from both migrants and non-migrants in both origin and destination households, with a period of time between the data collection rounds that was long enough for some people to out-migrate, settle and return. Proxy respondents should ideally not be used, as there may be considerable asymmetry in the information held by migrants and by proxy respondents in the origin household. [6]

The existing evidence from other parts of the developing world (mainly Asia) typically relies on cross-sectional data from either the origin or the destination area. These approaches necessitate the use of proxy respondents for either the ongoing migrants, as in Piotrowski and Tong (2010) and Tong and Piotrowski (2010), or for the returnees, as in Falkingham, Chepngeno-Langat and Evandrou (2012), with the risk of introducing considerable bias into the results. The strength of the present paper lies in the fact that we have more reliable data than earlier studies. With our longitudinal tracking survey covering both origin and migrant households, we have the ideal survey design to analyse various aspects of internal return migration in a sub-Saharan African context. The next section describes these data in detail.

Data and sample selection

Kagera is a region in north-western Tanzania. It lies on the shores of Lake Victoria and shares borders with Uganda, Rwanda and Burundi. The 2012 census estimated a population of 2.5 million (URT 2013). The region is predominantly rural, with more than 80 percent of households relying on agricultural production as their main source of income (URT 2012).

Data

The Kagera Health and Development Survey (KHDS) was one of the longest-running African panel surveys, spanning 19 years in total and with three major survey rounds conducted in the early 1990s, in 2004 and in 2010 (De Weerdt et al. 2012). In the first round, members of 915 households were interviewed. These households were situated in 51 villages across Kagera. Households were interviewed up to four times each at six-monthly intervals between 1991

[6] See note 5 above.

1994 (see World Bank 2004).[7] In what follows, we refer to these first survey rounds as the *baseline*.

The first follow-up survey was organised in 2004 with the aim of re-interviewing all the individuals interviewed in the baseline surveys. This involved careful tracking of individuals who had migrated away from their baseline villages to other parts of the region, elsewhere in Tanzania, or to neighbouring Uganda. More than 93 percent of the baseline households were re-contacted after a 10-year period, meaning that at least one panel respondent from each household was interviewed (Beegle, De Weerdt and Dercon 2006).[8] Due to migration and household partition for other reasons (e.g. children leaving parental households), the 2004 sample covered more than 2,700 households.

The second follow-up survey was organised by the present authors in 2010 jointly with researchers from EDI-Tanzania, the University of Oxford and the World Bank. This time the household re-interview rate was 92 percent, yielding a sample of more than 3,300 households (De Weerdt et al. 2012). Compared to other panel surveys, these household-level attrition rates are exceptionally low (Alderman et al. 2001). At the individual level, the re-interview rates among surviving panel respondents were 82 percent in 2004 and 85 percent in 2010.

The tracking feature in the surveys in 2004 and 2010 created a panel of respondents rather than of households. In these survey rounds, individuals were only tracked if they had resided in one of the households interviewed at baseline in 1991-94. We call these individuals *panel respondents*.[9] In all the survey rounds, a household was defined as a group of people who had lived in the same dwelling and shared their meals together for at least three of the twelve months immediately prior to the interview (World Bank 2004). Individuals who had recently joined the household and intended to stay for at least six months were also treated as household members.[10] Since the fieldwork in both of the follow-up surveys started with interviewing households in the baseline villages, this definition of household membership means that we do not capture short-term migration spells. In particular, circular or seasonal migrants who leave the household for less than a six month period would be considered as a part of the origin household.[11] Furthermore, a retrospective migration module administered in

[7] Comparisons of various welfare indicators with the 1991/92 Tanzanian Household Budget Survey suggest that KHDS provides a representative sample for the region during this period (Beegle, De Weerdt and Dercon, 2011).

[8] This excludes 17 households in which all previous household members were deceased.

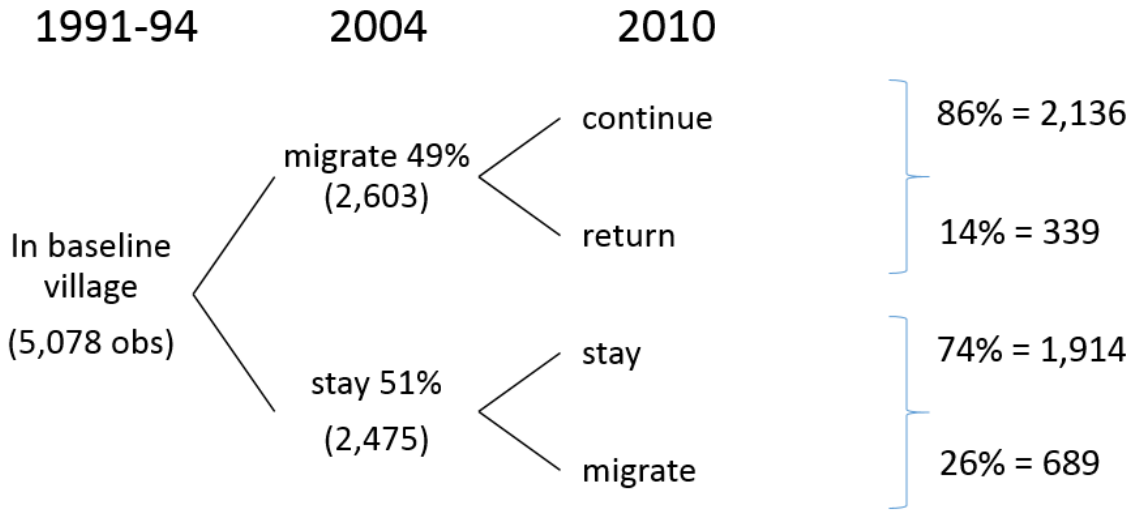
[9] Individuals who joined the household after the first round of data collection in 1991-94 and were living in the household in 2004 are not considered to be panel respondents and therefore not tracked in 2010.

[10] Other exceptions include the head of household (as identified by the household members), who was always considered to be a member. Contract servants, tenants and boarders, and their dependants, were not considered to be household members.

[11] Kagera and large parts of Tanzania have two rainy seasons, in which agricultural production takes place. The long rainy season (*Masika*) in Kagera occurs between March and May, and the short one (*Vuli*) in October-December. This further helps to ensure that seasonal migrants are considered to be household members, and not migrants, in our survey.

the 2010 survey round showed that the average (right-censored) migration spell among the migrants was 8.4 years (with a median of 8 years). These data are therefore ideal for studying long-term migration patterns, as both non-migrants, migrants and return migrants (provided that they returned between the 2004 and 2010 rounds) were observed and interviewed. The data are not suited to the analysis of circular or seasonal migration.[12]

Figure 1: Scope of return migration in Tanzania



Empirically, we follow Beegle, De Weerdt and Dercon (2011) in defining non-migrants as individuals who remain in their original baseline village. Migrants are then individuals found residing outside the baseline village, be it elsewhere in Kagera, in other regions of Tanzania, or in Uganda. Figure 1 provides an overview of the migration flows over the 19-year period. The baseline household survey included 6,353 individuals, all of whom were interviewed at least once in 1991-94. Excluding the 1,275 individuals who had died by 2010, we are left with 5,078 panel respondents. Of these, 51 percent lived in the baseline village in 2004, and the remainder (49 percent) were migrants. In the 2010 survey round, we find that an additional 689 panel respondents had out-migrated between 2004 and 2010, leaving 38 percent (1,914 panel respondents) of the original sample in the baseline villages as non-migrants or 'stayers'.[13] Of the people classed as migrants in 2004, 14 percent (339 panel

[12] Previous work on migration using these data has studied the impact of migration on living standards (Beegle, De Weerdt, and Dercon 2011) and the role of migration in risk sharing (De Weerdt and Hirvonen 2013); other work is in progress.

[13] In both the 2004 and 2010 rounds, the tracking information reveals that only very few people – less than 1 percent - migrated outside East Africa. Among the migrants to other East African countries, about 80 percent migrated to Uganda. Since our survey team tracked migrants to Uganda, we have reliable information about the circumstances of most of the international migrants as well.

respondents) had returned to their baseline villages and 86 percent (2,136 panel respondents) were still migrants in 2010.[14]

Sample selection

In the analysis that follows, we operate with three different categories of panel respondent: *stayers*, *continuing migrants* and *return migrants*. A panel respondent is a *stayer* if she or he was residing in the baseline village throughout the full cycle of the panel (i.e. in 1991-94, 2004 and 2010). *Continuing migrants* are individuals who were found residing outside their baseline villages in both the 2004 and the 2010 rounds. *Return migrants* are panel respondents who were found residing outside their baseline villages in 2004 but were found to have returned to the baseline village in the 2010 round. Our analysis is based on a comparison of the characteristics of these three groups at different points in time. For this reason we exclude from our sample those 689 individuals who out-migrated between 2004 and 2010.

Table 1: Impact of restrictions on sample size

	Total
1. Observations in Figure 1	5,078
2. Out-migrated after 2004	4,389
3. Appeared in all 3 survey rounds	3,282
4. Not polygamists	3,263
5. Aged 17 to 45 years in 2004	2,110
6. Not in school in 2004	2,035

Note: Each row represents the remaining number of individuals after the sample restriction described in the first column.

The final sample consists of panel respondents who were observed in all three survey rounds. In order to achieve a more precise description of the characteristics of the return migrants and for the analysis of the determinants of the return migration decision, we further constrain the sample to individuals who were prime-age adults (17 to 45 years old) in 2004 and thus who were no longer attending school. These restrictions ensure that we do not capture returns caused by leaving secondary school (often a boarding school) or motivated by retirement. Finally, we also exclude polygamists from the analysis, since defining them as stayers or migrants is difficult due to the fact that they appear in multiple households. Starting from the 5,078 panel respondents in Figure 1. Table 1 shows how each of these restrictions

[14] These numbers do not include migration spells that took place between the 2004 and 2010 survey rounds; 14 percent thus represents a lower-bound estimate of the magnitude of return migration.

affected our sample size. The final sample of 2,035 panel respondents used in the empirical analysis is composed of 177 return migrants, 855 continuing migrants and 1,003 stayers. [15]

Movements and characteristics of internal migrants, including return migrants

Table 2 shows how the out-migration from baseline villages that took place between the baseline in 1991-94 and the survey in 2004 was largely rural-to-rural. Nearly half (46 percent) of the migrants moved from rural Kagera to another rural area within Kagera or elsewhere, while 15 percent moved from urban to rural areas. Rural-to-urban migration constitutes about 17 percent of the migration flow in our sample. We also see that women were more likely to move from one rural area to another than men were. More than 53 percent of the migrant women went from rural Kagera to another rural area, whereas the corresponding figure for men is only 40 percent. Finally, 80 percent of the migrants moved within Kagera, while 20 percent moved to another region in Tanzania or to Uganda.

Table 2: Migration flows between 1991-94 and 2004

	All (%)	***% returned***	**Female (%)**	***% returned***	**Male (%)**	***% returned***
From rural Kagera to						
Kagera rural	46	*22*	51	*20*	37	*28*
Other rural	2.4	*20*	2.3	*19*	2.6	*22*
Kagera urban	9.1	*5.3*	7.7	*3.8*	12	*7.3*
Other urban	7.8	*5.0*	5.5	*0.0*	12	*9.5*
Sub-total	**66**	***n/a***	**67**	***n/a***	**64**	***n/a***
From urban Kagera to						
Kagera rural	12	*14*	14	*14*	9.6	*15*
Other rural	2.5	*0.0*	2.0	*0.0*	3.5	*0.0*
Kagera urban	13	*25*	12	*21*	15	*31*
Other urban	7.0	*6.9*	6.1	*4.8*	8.7	*10*
Sub-total	**34**	***n/a***	**33**	***n/a***	**36**	***n/a***
Total	**100**	***n/a***	**100**	***n/a***	**100**	***n/a***
Number of observations	**1,032**	**177**	**687**	**108**	**345**	**69**
Overall return percentage		**17**		**16**		**20**

Note: The "% returned" column shows the percentage of return migrants in the corresponding migration flow category.

The magnitude of return migration in this reduced sub-sample is slightly higher than our previous gross figure of 14 percent, averaging 17 percent among the 1,032 individuals whom we observe as migrants in 2004. Thus, more than one in six of the migrants that we followed had returned by 2010. Although our estimate of the extent of return migration

[15] This is our gross sample. In some of the analyses below, a few variables may contain a small number of missing observations, reducing the sample further.

within the six-year window is somewhat lower than the estimates from China and Thailand described above, the proportion of migrants who return is still sizeable. Understanding what characterises these migrants and why they return home may therefore be important for understanding general migration patterns. Among those who were migrants in 2004, we see from the raw figures that the probability of a migrant returning between 2004 and 2010 was somewhat higher for men than for women, and for the rural-to-rural migrants than for others.

Table 3: Reasons for leaving the baseline village

	Total	**Male**	**Female**
Marriage	43	3.7	62
Divorce/widowhood	2.7	0.3	3.9
Work	26	57	11
Education	5.6	8.7	4.1
Family	14	17	13
Parents died/inheritance	6.2	11.8	3.5
Other local responsibilities	0.5	0.6	0.5
Own health	0.7	0.0	1.1
Other	1.0	0.9	1.1
Total	**100**	**100**	**100**
Number of observations	988	323	665

Notes: Sample of 988 migrants in 2004. Information is missing for 22 female and 22 male migrants.

In the 2004 survey, the migrants were asked why they left their baseline village. Table 3 reports the reasons given. More than 25 percent of our sample reported that they had left because they had found work or because they went to look for it. More than 40 percent had left because of marriage. These aggregate statistics, however, mask clear gender differences in migration motives. The majority of men gave a work-related reason for leaving, while most women reported that they had left their baseline village because of marriage. We allow these subjective reports of out-migration motives to guide us in our analyses of return migration determinants below.

We split the individuals in the sample into the three categories of stayers, continuing migrants and return migrants. This permits the comparison of individual characteristics across these groups on a bivariate basis. We first use the baseline data from 1991-94, before any migration had taken place. At this point, the individuals in our sample were between 7 and 35 years old and resided in their baseline villages. In Table 4, we see that women were more likely to migrate than men and, despite the age restriction in selecting the sample, migrants were on average two years younger than those who never migrated. Looking at the differences in 1991 between future stayers and future migrants, and further between future continuing migrants and future return migrants, a few interesting observations emerge.

First, migrants were somewhat less likely to be the children of the head of the household. We also find that migrants were likely to originate from larger and from more

educated families, and that they themselves were more educated on average than their peers.[16] Interestingly, migrants did not seem to originate from the wealthier households: the difference between migrants and stayers' baseline per capita consumption levels was not statistically different from zero. [17]

Table 4: Descriptive statistics in 1991 by future migration status

	Migration status in 2004			Migration status in 2010 of migrants		
	Stayer	**Migrant**	**Difference**	**Continuing migrant**	**Return migrant**	**Difference**
Male	0.605	0.334	0.271***	0.323	0.390	-0.067
	(0.489)	(0.472)		(0.468)	(0.489)	
Age (in 2004)	29.12	26.83	2.26***	26.58	27.93	-1.35***
	(7.412)	(5.780)		(5.622)	(6.333)	
1991 characteristics:						
Household size	7.512	8.014	-0.502***	8.020	7.983	0.037
	(3.531)	(3.749)		(3.737)	(3.818)	
Male head of household	0.805	0.742	0.063***	0.743	0.740	0.003
	(0.397)	(0.438)		(0.437)	(0.440)	
Child of the head	0.572	0.518	0.054**	0.497	0.621	-0.124***
	(0.495)	(0.500)		(0.500)	(0.486)	
Father's education (in years)	4.371	4.966	-0.595***	5.056	4.528	0.528**
	(3.046)	(3.093)		(3.093)	(3.061)	
Mother's education (in years)	2.664	3.383	-0.719***	3.464	2.989	0.475*
	(2.810)	(3.057)		(3.082)	(2.912)	
Number of acres owned	5.186	5.067	0.119	5.136	4.735	0.401
	(5.159)	(5.186)		(5.268)	(4.769)	
Number of years of schooling: Difference from the mean of peer group	-0.102	0.390	-0.492***	0.464	0.0339	0.430**
	(2.305)	(2.077)		(2.057)	(2.142)	
Baseline village was urban	0.310	0.344	-0.034*	0.350	0.316	0.034
	(0.463)	(0.475)		(0.477)	(0.466)	
Annual household per capita consumption, in 2010 Tanzanian shillings	345,070	355,071	-10,001	361,777	322,837	38,940***
	(180,053)	(184,296)		(189,386)	(153,993)	

Notes: Standard deviations in parentheses. Significances of the differences in means are based on a t-test for the continuous variables and on Pearson's $\chi 2$-squared test for binary variables. *** p<0.01, ** p<0.05, * p<0.1.

[16] Given the age restriction, most of our sample respondents had not yet completed their schooling at the time of the baseline survey round. A raw measure of education would consequently be highly correlated with age. To circumvent this problem, we follow Beegle, De Weerdt, and Dercon (2011) in computing the years of schooling relative to peers, and use that figure in our empirical analysis.

[17] The consumption aggregates are temporally and spatially deflated using data from a price questionnaire included in the survey. All consumption values in this paper are expressed in annual per capita terms using 2010 Tanzanian shillings (TZS).

Table 4 also shows differences between the two migrant categories (continuing and return migrants). Those who had returned to their baseline village by 2010 were slightly older than those who were still migrants in that year. Moreover, return migrants were less well educated relative to their peers than continuing migrants, and their parents had lower levels of education than the parents of continuing migrants. They also came from poorer households. Although household consumption levels in 1991-94 do not seem to correlate with out-migration by 2004, they do correlate significantly and negatively with return to the baseline village between 2004 and 2010. This suggests that return migrants originated from baseline households with fewer resources and poorer educational background characteristics than those of the continuing migrants.

We then use the 2004 data to compare the characteristics of stayers and migrants, and to examine the differences observed between the two migrant types at their migrant destinations. In Table 5, this comparison between the migrants reveals that the initial differences in education observed in 1991-94 persisted into 2004. At ages of between 17 and 45 in 2004, more than 11 percent of the future continuing migrants had at least a secondary school education, while this was true for only 4 percent of the future return migrants. Although migrants were significantly less engaged in agriculture than stayers, future return migrants resembled stayers in the level of reliance on casual labour as their main income source. About 10 percent of the future return migrants and 6 percent of the continuing migrants reported that the less attractive and stable casual farm work was their main income-generating activity. This suggests that future return migrants were not faring as well as the continuing migrants in their 2004 locations, even though, on average, their consumption levels were the same.

Being less settled in the migration destination may partly explain future return. In 2004, future return migrants were more likely to be single, divorced or widowed than continuing migrants, and at that time they had had a shorter migration spell on average than the continuing migrants. Future return migrants also seem to have maintained closer links with the relatives in the baseline origin village, in that they were more likely to both send and receive transfers from the extended family in the baseline village. [18] However, the continuing migrants sent significantly larger transfers. About 45 percent of the migrants did not send any transfers to or receive any from their extended family members at home.

[18] The 2004 survey collected information about cash and in-kind transfers in the previous 12 months between extended family members. By extended family we refer to household members who used to live together at the baseline in 1991-94.

Table 5: Descriptive statistics in 2004 by current and future migration status

	Migration status in 2004			Migration status in 2010		
	Stayer	**Migrant**	**Difference**	**Continuing migrant**	**Return migrant**	**Difference**
Lives in an urban area	0.239	0.365	-0.13***	0.386	0.266	0.120***
	(0.427)	(0.482)		(0.487)	(0.443)	
Has completed primary schooling	0.730	0.759	-0.029	0.767	0.718	0.049
	(0.444)	(0.428)		(0.423)	(0.451)	
Has completed secondary schooling	0.0269	0.0979	-0.071***	0.110	0.0395	0.071***
	(0.162)	(0.297)		(0.313)	(0.195)	
Jobless	0.0419	0.109	0.111***	0.117	0.0678	0.049**
	(0.200)	(0.311)		(0.322)	(0.252)	
Non-farm worker	0.209	0.294	0.049***	0.305	0.237	0.068*
	(0.407)	(0.456)		(0.461)	(0.427)	
Works on own farm	0.645	0.534	0.111***	0.523	0.588	-0.065
	(0.479)	(0.499)		(0.500)	(0.494)	
Works on someone else's farm	0.104	0.064	0.040***	0.055	0.107	-0.052**
	(0.305)	(0.245)		(0.228)	(0.310)	
Living with a child	0.642	0.646	-0.004	0.650	0.627	0.023
	(0.480)	(0.478)		(0.477)	(0.485)	
Living with spouse	0.603	0.673	-0.070***	0.678	0.650	0.028
	(0.489)	(0.469)		(0.467)	(0.478)	
Married	0.632	0.699	-0.023***	0.702	0.684	0.018***
	(0.482)	(0.459)		(0.458)	(0.466)	
Divorced or widowed	0.0877	0.0930	0.008	0.0854	0.130	-0.045*
	(0.283)	(0.291)		(0.280)	(0.337)	
Migration spell (in years)	n/a	6.474	n/a	6.587	5.883	0.704**
		(3.489)		(3.480)	(3.484)	
Has relatives in baseline village	n/a	0.832	n/a	0.828	0.853	-0.025
		(0.374)		(0.378)	(0.355)	
Land owned in acres	3.318	1.964	1.35***	1.908	2.236	-0.328
	(4.291)	(3.858)		(3.958)	(3.329)	
Household per capita annual consumption in 2010 Tanzanian shillings	394,482	576,592	-18,211***	582,712	547,033	35,678.9
	(243,700)	(569,562)		(557,316)	(626,215)	
Consumption data missing	0.0199	0.0291	0.028	0.0257	0.0452	-0.020
	(0.140)	(0.168)		(0.158)	(0.208)	
Transfers to relatives in baseline village	n/a	11,140.5	n/a	11,917.3	7,388.1	4,529.2**
		(40,177)		(43266.6)	(18854.5)	
Transfers from relatives in baseline village	n/a	6,009.6	n/a	5,410.9	8,901.6	-3,490.7
		(25,874)		(20,754.0)	(42,679.4)	
=1 if transfers to relatives in baseline village	n/a	0.494	n/a	0.475	0.588	-0.113***
		(0.500)		(0.500)	(0.494)	
=1 if transfers from relatives in baseline vill.	n/a	0.412	n/a	0.389	0.520	-0.131***
		(0.492)		(0.488)	(0.501)	
=1 if did not send or receive any transfers	n/a	0.459	n/a	0.478	0.367	0.111***
		(0.499)		(0.499)	(0.483)	

Notes: Standard deviations in parentheses. Significance of the difference in means based on a t-test for continuous variables and Pearson's $\chi 2$-squared test for binary variables. *** p<0.01, ** p<0.05, * p<0.1. .

The 2010 follow-up survey collected retrospective information about various life events experienced by the panel respondents after 2004, such as marriages, divorces, inheritances, or economic shocks (e.g. poor harvest, death of a family member, serious illness or loss of job). In Table 6, we see that return migrants were more likely to have experienced an economic shock between 2004 and 2010 than continuing migrants. Interestingly, economic shocks reported by the extended family in the home village are not correlated with the return event. Finally, return migrants were more likely to have inherited land or to have divorced or been widowed over this period than were continuing migrants. These findings suggest that such life events are likely to be important determinants of future return. We examine these determinants in more detail using multivariate regression techniques in the sections that follow

Table 6: Life events in 2004-2010 by migration status

	Migration status in 2010		
	Continuing migrant	**Return migrant**	**Difference**
Inherited land	0.106	0.186	-0.08***
	(0.309)	(0.391)	
Reported a shock	0.160	0.220	-0.06**
	(0.367)	(0.416)	
Shock in baseline village	0.269	0.299	-0.03
	(0.444)	(0.459)	
Got married	0.139	0.169	-0.03
	(0.346)	(0.376)	
Got divorced/was widowed	0.144	0.249	-0.105***
	(0.351)	(0.433)	

Notes: Standard deviations in parentheses. Significance of the difference in means based on a t-test for continuous variables and Pearson's $\chi 2$-squared test for binary variables. *** p<0.01, ** p<0.05, * p<0.1. 'Shock in the baseline village' refers to economic shocks reported by relatives residing in the baseline village.

Econometric issues

In the main empirical analysis below, we model the probability of a migrant having returned to the baseline village by 2010. The return for an individual $\boldsymbol{i}$ is captured by a binary variable $\boldsymbol{return_i}$ that has a value of 1 if the migrant returned between 2004 and 2010 and a value of 0 otherwise. We are thus only estimating return probabilities within a six-year window. Using a probit model, the latent probability of return is expressed as:

$$\text{prob}(\text{return}_i = 1) = \Phi(\mathrm{x}'\beta) \quad (1)$$

where x is a vector of individual, household and community level characteristics affecting the individual's probability of return and β represents a vector of the estimated coefficients. To avoid reverse causality issues, the individual, household and community level

characteristics are constructed using data from the 1991-94 or 2004 rounds, i.e. data obtained prior to the return event. As is inherent in any analysis on migration, there is likely to be substantial selection based on unobservable characteristics. We therefore caution against interpreting our estimates as identifying a causal relationship. In particular, if these unobserved characteristics are correlated with the observed ones (x in Equation 1), then a causal interpretation of our estimates would certainly not be valid. Our aim is not to provide a complete causal analysis on the basis of the observed determinants of return migration, but rather to provide a careful descriptive analysis in a multivariate setting, which we believe to be of value not only in offering a contribution to the scarce literature on return migration in an African context but also for guiding future research in this field.

The probit model constrains the probability to a [0,1] interval by assuming a cumulative density function (CDF) that follows a normal distribution $\Phi(\cdot)$. The true underlying CDF is, however, unknown to the researcher.[19] Given our sample size (N = 1,032) and the intuitive appeal in assuming a normal distribution, we based our primary analysis on the probit model. However, our results are robust to alternative functional forms, such as logit, complementary log-log and linear probability models.[20]

Determinants of out-migration and return migration

Before turning to our main analysis based on Equation (1), we briefly use our baseline data to predict the selection into migration based on individual and household level characteristics observed in 1991-94 (i.e. before the out-migration event). This analysis is based on a probit model where we model the probability of the individual migrating between the baseline round in 1991-94 and the 2004 round as $\text{prob}(\text{migrate}_i = 1)$. Stayers constitute the reference category.

Column 1 of Table 7 provides the probit estimates with the corresponding marginal effects. We see that, as expected, there is some dominance of positive factors in the decision to migrate both in terms of individual and of household characteristics. On average and *ceteris paribus*, more educated (relative to their peers) and younger individuals migrate, and the migrants come from larger households with higher per capita baseline consumption levels. In line with the findings in the descriptive statistics, women are more likely to migrate than men, consistent with the patrilocal context where women migrate on marriage (see Table 3). Somewhat contrary to the positive selection interpretation, individuals who originate from female (usually widow)-headed households are found in this multivariate setting to be more likely to migrate than others. Living in a female-headed household may be linked to poorer and more uncertain future prospects in the village, particularly with regard to land availability.

[19] A common alternative to the normal distribution is to assume a logistic distribution, known as the logit model. Johnston and DiNardo (1997) provide an accessible introduction to these models.
[20] Results available upon request.

Table 7: Estimating selection into migration (Column 1) and into return migration (Column 2) using individual characteristics at the baseline (1991-94)

	1: Selection into migration		2: Selection into return migration	
	Coeff	**Mfx**	**Coeff**	**Mfx**
Male	-0.733***	-0.260***	0.210**	0.051**
	(0.060)	(0.019)	(0.100)	(0.024)
Age in years	-0.034***	-0.012***	0.018**	0.004**
	(0.005)	(0.002)	(0.008)	(0.002)
Child of the head of the household	-0.182***	-0.064***	0.372***	0.091***
	(0.064)	(0.023)	(0.101)	(0.024)
Household size	0.024**	0.009**	0.003	0.001
	(0.009)	(0.003)	(0.016)	(0.004)
Household had a male head	-0.198***	-0.070***	-0.028	-0.007
	(0.075)	(0.026)	(0.117)	(0.029)
Father's education	0.003	0.001	-0.018	-0.004
	(0.011)	(0.004)	(0.018)	(0.004)
Mother's education	0.011	0.004	-0.001	-0.000
	(0.012)	(0.004)	(0.018)	(0.004)
Land owned in acres	0.001	0.000	-0.014	-0.003
	(0.007)	(0.003)	(0.013)	(0.003)
Number of years of schooling: difference from the mean of peer group	0.039***	0.014***	-0.046**	-0.011**
	(0.014)	(0.005)	(0.023)	(0.006)
Baseline village was urban	-0.032	-0.011	-0.008	-0.002
	(0.096)	(0.034)	(0.160)	(0.039)
Logged household per capita consumption	0.140**	0.050**	-0.278**	-0.068**
	(0.070)	(0.025)	(0.113)	(0.027)
Baseline district dummies	Yes		yes	
Number of observations	2,008		1,017	
Log Pseudo Likelihood Value	-1246.87		-452.358	
Wald χ^2 (df=16)	255.93		38.65	
Prob > χ^2	0.0000		0.0012	
McFadden Pseudo-R^2	0.104		0.046	
McKelvey and Zavoina-R^2	0.204		0.089	

Notes: *** p<0.01, ** p<0.05, * p<0.1. 'Coeff' refers to probit estimate, 'Mfx' to corresponding marginal effect. Robust standard errors in parentheses. The standard errors for the marginal effects are calculated using the Delta Method. In Column 1, 27 panel respondents are dropped due to missing observations in father's height, land area, own schooling and household per capita consumption variables. In Column 2, 15 panel respondents are dropped due to missing observations for father's education, own schooling and household consumption variables.

We then drop the stayers from the analytical sample and use the probit model to estimate the probability of return among the 2004 migrants. First, we explore the extent to which the baseline characteristics – observed some 10-15 years before the return migration event – have any predictive power. In other words, we study whether, among the selected group of migrants, there is also selection into return migration based on the same set of predetermined baseline characteristics observed in 1991. Column 2 of Table 7 shows the results. In line with the descriptive analysis above, gender and education are strong predictors

of future return, with the less educated and men being more likely to return. Furthermore, in line with the descriptive statistics, we find that return migrants tend to originate from poorer baseline households. A 10 percent increase in baseline household consumption is associated with a 0.68 percentage-point decrease in the probability of returning. Since the mean return migration rate is 17 percent in the final sample, this corresponds to a four percent decrease in the likelihood of returning.[21] The remaining bivariate associations found above become insignificant in this multivariate set-up, implying, for instance, that parents' education at baseline does not independently predict selection into future return migration once other characteristics are controlled for. Regression diagnostics show that the model based on baseline household and individual level characteristics does not perform particularly well in predicting future return migration. Nevertheless, the null hypothesis that all coefficients are jointly zero is rejected at the 1 percent level: the Wald χ^2 test statistic (with 16 degrees of freedom) is 38.65.

We base our main analysis of the determinants of return migration on the individual and household characteristics among migrants observed in 2004. Table 8 reports the regression results based on Equation (1). As before, the table shows the probit estimates and the marginal effects. The various goodness-of-fit measures reported at the bottom of Table 8 suggest that this model fits the data reasonably well. Because of the considerable gender heterogeneity found in the migration decisions, the overall results are split by gender in Columns 2 and 3.[22] All regressions include baseline district dummies in order to control for the migrants' initial location, and thus we capture the unobserved labour market characteristics of the home district.[23]

The pooled model in Column 1 of Table 8 shows that men are, on average and *ceteris paribus*, 6 percentage points more likely to return than women. Comparing the results from the pooled model with the gender-disaggregated results shows that the correlations between the covariates and the return probability are highly gender-specific. The older male migrants were at the time of the baseline survey, the more likely they are to return, whereas age is not associated with return in the female sample. In the female sample, on the other hand, the length of the migration spell is associated with a decrease in the probability of returning. Since women out-migrate largely because of marriage, the migration-spell variable is likely to be strongly correlated with the length of the marriage, which in turn may proxy for marital success or break up. We also find that lack of secondary schooling is a strong predictor of

[21] We did not find evidence of a non-linear (quadratic) relationship between the baseline consumption and the probability of out-migrating or returning.
[22] This gender separation is also supported by the data. A likelihood ratio test with one degree of freedom yields a $\chi 2$ test statistic of 4.70 ($p = 0.030$).
[23] The 51 baseline villages are in six Kagera districts.

future return for men, whereas it does not exert an independent impact on the return probability of women.[24]

Table 8: Estimated determinants of return migration between 2004 and 2010

	1: Pooled		2: Men		3: Women	
	Coeff	**Mfx**	**Coeff**	**Mfx**	**Coeff**	**Mfx**
Male	0.289**	0.062**				
	(0.134)	(0.029)				
Age in years	0.033***	0.007***	0.063***	0.013***	0.022	0.005
	(0.011)	(0.002)	(0.021)	(0.004)	(0.014)	(0.003)
Migration spell (in years)	-0.045***	-0.010***	-0.032	-0.007	-0.047**	-0.010**
	(0.016)	(0.003)	(0.028)	(0.006)	(0.020)	(0.004)
Has completed primary schooling	0.024	0.005	0.161	0.034	-0.054	-0.011
	(0.126)	(0.027)	(0.256)	(0.054)	(0.152)	(0.031)
Has completed secondary schooling	-0.718***	-0.155***	-1.354***	-0.287***	-0.212	-0.044
	(0.224)	(0.048)	(0.313)	(0.068)	(0.309)	(0.064)
Jobless	0.175	0.038	0.532	0.113	-0.022	-0.004
	(0.209)	(0.045)	(0.364)	(0.076)	(0.280)	(0.058)
Works on own farm	0.186	0.040	0.190	0.040	0.242	0.050
	(0.163)	(0.035)	(0.262)	(0.055)	(0.217)	(0.045)
Works on someone else's farm	0.324	0.070	0.168	0.036	0.461	0.095
	(0.226)	(0.049)	(0.380)	(0.080)	(0.298)	(0.061)
Living with a child	-0.181	-0.039	-0.191	-0.040	-0.206	-0.042
	(0.152)	(0.033)	(0.303)	(0.064)	(0.178)	(0.037)
Married	0.184	0.040	0.271	0.057	0.169	0.035
	(0.226)	(0.048)	(0.387)	(0.082)	(0.332)	(0.068)
Divorced or widowed	-0.059	-0.013	-0.960	-0.204	0.071	0.015
	(0.256)	(0.055)	(0.609)	(0.129)	(0.357)	(0.074)
Has relatives in baseline village	0.290*	0.062*	0.352	0.075	0.389*	0.080*
	(0.150)	(0.032)	(0.237)	(0.050)	(0.206)	(0.042)
Land owned in acres	0.013	0.003	0.015	0.003	0.016	0.003
	(0.013)	(0.003)	(0.025)	(0.005)	(0.015)	(0.003)
Logged per capita consumption	-5.442***	-1.171***	-4.293	-0.911	-5.899**	-1.215**
	(1.978)	(0.421)	(3.433)	(0.725)	(2.639)	(0.533)
--- squared	0.202***	0.043***	0.159	0.034	0.220**	0.045**
	(0.075)	(0.016)	(0.127)	(0.027)	(0.101)	(0.020)
Consumption data missing	0.338	0.073	-0.138	-0.029	0.737	0.152
	(0.297)	(0.064)	(0.367)	(0.078)	(0.519)	(0.107)
Child of the 1991-household head	0.333***	0.072***	0.432**	0.092**	0.265**	0.055**
	(0.109)	(0.023)	(0.204)	(0.042)	(0.134)	(0.027)
Lives in urban Kagera	-0.018	-0.004	-0.107	-0.023	0.044	0.009
	(0.148)	(0.032)	(0.256)	(0.054)	(0.175)	(0.036)
Lives in rural area outside Kagera	-0.213	-0.046	-0.335	-0.071	-0.124	-0.026
	(0.290)	(0.062)	(0.401)	(0.086)	(0.392)	(0.081)
Lives in urban area outside Kagera	-0.633***	-0.136***	-0.677**	-0.144**	-0.820**	-0.169**
	(0.233)	(0.050)	(0.333)	(0.070)	(0.403)	(0.081)

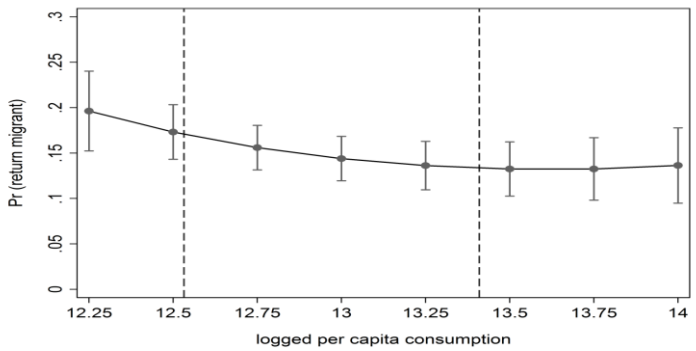
[24] The difference between the coefficients on the primary and secondary schooling dummies is statistically significant at the 1 percent level (p = 0.000) in the pooled and male samples but insignificant in the female sample (p = 0.656).

	1: Pooled		2: Men		3: Women	
	Coeff	**Mfx**	**Coeff**	**Mfx**	**Coeff**	**Mfx**
Life events 2004-2010:						
Inherited land	0.255*	0.055*	0.356	0.076	0.144	0.030
	(0.145)	(0.031)	(0.225)	(0.047)	(0.201)	(0.041)
Reported a shock	0.169	0.036	-0.357	-0.076	0.366**	0.075**
	(0.126)	(0.027)	(0.258)	(0.055)	(0.150)	(0.031)
Shock in baseline village	0.085	0.018	-0.015	-0.003	0.097	0.020
	(0.115)	(0.025)	(0.228)	(0.048)	(0.140)	(0.029)
Got married	0.423**	0.091**	0.750**	0.159**	0.237	0.049
	(0.213)	(0.046)	(0.313)	(0.065)	(0.353)	(0.073)
Got divorced/was widowed	0.604***	0.130***	-0.043	-0.009	0.659***	0.136***
	(0.149)	(0.031)	(0.378)	(0.080)	(0.177)	(0.035)
Baseline district dummies	Yes		Yes		Yes	
Observations	1,014		333		681	
Log Pseudo Likelihood	-393.5		-127.6		-253.2	
Wald χ^2 (df=30|29|29)	89.09		61.12		62.43	
Prob > χ^2	0.000		0.000		0.000	
McFadden Pseudo-R^2	0.117		0.172		0.130	
McKelvey and Zavoina-R^2	0.240		0.361		0.264	

Notes: *** p<0.01, ** p<0.05, * p<0.1. 'Coeff' refers to probit estimate, 'Mfx' to corresponding marginal effect. Robust standard errors in parenthesis. The standard errors for the marginal effects are calculated using the Delta Method. The reference categories are: 'lives in rural Kagera', 'has not completed primary schooling', 'non-farm worker' and 'never married'. 'Shock in the baseline village' refers to an economic shocks reported by relatives residing in the baseline village. In this table, 18 panel respondents are dropped due to missing observations in the migration spell variable. Dropping this variable from the model and estimating the remaining model using the full sample of 1,032 migrants yields nearly identical estimates for all variables.

Family relations also matter for future return probability. Having relatives (i.e. former household members) in the baseline village is associated with a six-percentage-point increase in the probability of returning, although the effect is statistically different from zero only at the 10 percent level in the female sample and is insignificant in the male sample (p = 0.137). For both men and women, being a child of the household head in 1991 is associated with an increase in the return probability of seven percentage points on average, *ceteris paribus.* The migration destination also seems to play a role. The location dummies show that migrants living in urban areas outside Kagera (mostly in Dar es Salaam and Mwanza) are almost 14 percentage points less likely to return than those who reside in rural parts of Kagera.

Figure 2: Predictive margins for different levels of consumption (column 1 in Table 8)



Note: the dashed lines represent the 25th and 75th consumption percentiles. The solid lines show the 95% confidence intervals for the point estimates. The estimated turning point is 13.5.

We use consumption level in 2004 as a proxy for migrants' income during the migration spell and find that it exerts a non-linear effect on the probability of returning.[25] Figure 2 plots the predictive margins at different points of the logged consumption distributions. We see that the predicted return probabilities are as high as 20 percent at the lower end of the 2004 consumption distribution among migrants and decrease to about 15 percent as we move towards the middle of the distribution. The turning point is calculated to be at a logged consumption level of 13.5 – a point beyond the 75th percentile of the unconditional consumption distribution. After this point the return probability increases slightly. However, since we are now operating at the tail of the distribution, the confidence intervals are also spread out. In themselves, the graphical and numerical analyses do not provide adequate support for the hypothesis that return probabilities increase as migrant consumption increases. This non-linear effect seems to be driven by women, as it is imprecisely estimated for men. However, the difference between the consumption coefficients across the male and female samples is not statistically different from zero.[26]

Finally, when we examine the life-event variables, it is clear that these are also important determinants of future return in the multivariate setting. Land inheritance is associated with an increase in the likelihood of returning. The coefficient is statistically significant at the 10 percent level in the pooled sample but is non-significant in the gender-disaggregated samples. The p-value in the male sample is 0.114, while in the female sample it is 0.474. It seems then that the statistically significant effect in the pooled sample is driven by men. This finding is consistent with the customary law that in this context excludes daughters from inheriting land from their fathers (see e.g. De Weerdt 2010). We also see that getting married is associated with an increase in the likelihood of returning for men, while women whose marriages end (through divorce or being widowed) are more likely to return. In line with the descriptive statistics reported in Table 6, migrants who reported a shock between 2004 and 2010 are more likely to return than those who did not. However, this only holds for the female sample. Finally, it is worth noting that, as in the bivariate setting, shocks in the baseline village are not associated with either an increase or a decrease in the probability of returning.

All in all, we find that that being well-off and well-educated and, for women, in a stable marriage is associated with a lower probability of returning to the baseline village. This suggests that return migration is indeed linked with experiences of failure in migration where lack of education, lower consumption, negative economic shocks and the ending of marriages are strong determinants.

[25] The 2004 consumption variable is missing for 30 migrants. In order to preserve the sample size in the regression we replace these missing observations with the (migrant) sample mean but add a dummy to the regression model to capture these migrants for whom data are missing. Fortunately, the coefficient on this 'consumption missing' dummy appears insignificant in all columns, suggesting that the missing consumption observations are not (independently) correlated with the probability of return.

[26] Results from this gender-interacted model are available upon request.

Does remittance behaviour predict returning?

In this penultimate empirical section, we focus on the question of whether remittance behaviour during the migration spell predicts returning. We depart from the remittance literature by modelling (future) return as a function of remittances. Furthermore, in contrast to the situation with international migration, it is typical for internal migrants to both send and receive transfers from the home community. This is the case in our migrant sample: 35 percent of the migrants both sent money to and received transfers from the origin family. It is therefore important to consider both outgoing and incoming transfers, rather than to focus only on the transfers from the migrant to the home community.

The econometric specification is based on Equation (1). We append the transfer variables described in Table 5 to the right-hand side of the equation. We also add controls for variables that may jointly determine both return intentions and the level of net transfers; that is we control for the average wealth of the migrants' extended families in the baseline villages (proxied by their average consumption level measured in 2004), for migrants' network sizes (proxied by household sizes at baseline), and for the age and gender of the baseline household head. By including the (logged per capita) consumption of the migrant households as well as of the origin households in the baseline villages, we ensure that the estimated coefficients on the transfer variables are not driven by wealth differences among the migrants at their migration destination, or by wealth differences among their origin households.

Table 9 reports the marginal effects found on the basis of a probit model. As before, we show the results for the pooled sample as well as for the male and female sub-samples. Panel A shows the results based on a model where the transferred amounts are modelled using natural logarithmic transformation.[27] Interestingly, the coefficients for the logged transfer variables appear to be insignificant in the pooled model. The results for the male sample show that men who are supported by their relatives in the home village are more likely to return than other male migrants. There is no association between remittances and return probability in the female sample. Taken together, these results do not support the notion of strategic remitting as found in some of the existing empirical literature (Lucas and Stark 1985; Amuedo-Dorantes and Pozo 2006; de Brauw, Mueller and Woldehanna 2013). Furthermore, the return does not seem to be associated with a successful migration experience during which a substantial part of the destination income is transferred back to the origin household. [28]

[27] The natural logarithmic transformation is warranted due to the fact that the distribution of the transfer variable is right-skewed. In addition, the transformation makes the point estimate less sensitive to outliers. We account for zeros using the conventional method by adding 1 to the transferred amount before taking the logs.

[28] We also tried modelling remittances using a net-remittance variable that has a negative value if the migrant received more than sent to his or her relatives at home. We also ran the regressions separately using only incoming and outgoing transfers. Both these approaches yield qualitatively identical findings with those in Panel A of Table 9. These results are available upon request.

Table 9: Do migrants engage in strategic remittance behaviour?

	Sample means (Std. Dev.)	(1) Pooled	(2) Men	(3) Women
PANEL A				
ln (transfers to relatives in BLV +1)	4.403	0.003	-0.005	0.006
	(4.557)	(0.003)	(0.006)	(0.004)
ln (transfers from relatives in BLV +1)	3.537	0.004	0.018***	-0.001
	(4.301)	(0.003)	(0.005)	(0.004)
PANEL B				
=1 if sent transfers to BLV	0.49	0.036	-0.034	0.058*
	(0.50)	(0.030)	(0.052)	(0.035)
=1 if received transfers from BLV	0.41	0.039	0.140***	0.009
	(0.49)	(0.029)	(0.045)	(0.035)
PANEL C				
=1 if did not send anything to BLV	0.51	ref	ref	ref
	(0.50)			
=1 if sent less than TZS 2,000 to BLV	0.11	0.067*	-0.071	0.109***
	(0.31)	(0.037)	(0.078)	(0.040)
=1 if sent more than TZS 2,000 to BLV	0.38	0.027	-0.015	0.044
	(0.49)	(0.032)	(0.056)	(0.036)
=1 if did not receive anything from BLV	0.59	ref	ref	ref
	(0.49)			
=1 if received less than TZS 2,000 from BLV	0.11	0.068*	-0.003	0.079*
	(0.32)	(0.037)	(0.075)	(0.041)
=1 if received more than TZS 2,000 from BLV	0.30	0.029	0.172***	-0.028
	(0.46)	(0.031)	(0.049)	(0.036)
Observations		1,014	333	681

Notes: *** p<0.01 ** p<0.05 * p<0.1. 'Transfers' in Panel A refer to the total amounts of transfers (measured in 2004) to/from the linked households located in the baseline villages (BLV). In addition to the same covariates as in Table 7, the regressions in this Table further control for the average (log) consumption of stayer households in the network (measured in 2004), household size, and head's age and gender (measured in 1991). The standard errors for the marginal effects (Mfx) are calculated using the Delta Method. For other notes, see Table 7.

Although the level of remittances does not seem to predict future return, the act of remitting could in itself be a predictor, in that it ensures a connection to the baseline village. It may be more strategic for a migrant wishing to keep the return option open to send smaller amounts fairly regularly rather than an occasional larger amount. To investigate this, in Panel B of Table 9 we replace the logged variables with simple dummies. As before, migrant men who receive transfers from the baseline village are found to be more likely to return than those who do not. However, we now find that female migrants are six percentage points more likely to return if they have been sending remittances to their former household members in the baseline village prior to the return. This effect is significant at the 10 percent level.

In Panel C of Table 9 we further split the remittance amounts into small (TZS 2,000 or less) and larger transfers (more than TZS 2,000).[29] This exercise reveals that female

[29] Spread over a period of 12 months, TZS 2,000 is unlikely to represent a large sacrifice to the sender. This is evident when the sum is compared to the official poverty line figure. The latest official basic needs poverty line

migrants who remit small amounts to their extended family in the baseline village are more likely to return than those who remit larger amounts.[30] However, we also find that female migrants who receive small amounts are again more likely to return than others.[31] Given this observed symmetry in the impact of sending and receiving, we surmise that these trivially small transfers proxy for frequency of contact with the home community.[32] As described in De Weerdt (2001), the exchange of small gifts among women forms an important ritual in local culture. It seems then that women who maintain close links with their extended families are also more likely to return.

Life after return

How do the return migrants fare once they are back in their origin communities? Due to obvious reverse causality concerns, we refrain from studying this question in a multivariate framework, and instead focus on simple descriptive statistics that we believe will shed some light on this issue. From Table 10 we see that after relocating to their baseline villages, most returnees formed their own households. Almost 84 percent of them were either heads of their household or spouses of heads of households in 2010. We also find that male returnees are more likely to report being chronically ill (an illness lasting longer than 6 months) than continuing migrants and stayers.

Compared to the continuing migrants, the returnees seem to engage more in agricultural activities, either on their own farms or as casual labourers on farms of others. Interestingly, they do not seem to be more entrepreneurial than the stayers; if anything the opposite is true. Even without controlling for the positive factors associated with selection into migration compared to stayers, raw average figures suggest that return migrants are less likely to own a non-farm business than stayers. This contrasts with what has been found in other studies, in which return migrants have been found to be important for the promotion of local development. For example, De Vreyer, Gubert and Robilliard (2010) find that international return migrants in West Africa gain a wage premium and that those who become entrepreneurs have a productive advantage. With respect to internal return migrants in China, both Démurger and Xu (2011) and Chen and Hu (2012) find that internal return migrants are more likely to be self-employed entrepreneurs than their counterparts who remained at home.

for rural Tanzania, calculated from the 2007 Household Budget Survey, is TZS 13,114 per 28 days (URT 2009). The previous estimate from 2000/1 sets the same poverty line at TZS 6,996 (URT 2002).

[30] The difference between the estimated coefficients for the out-going transfers is statistically significant at the 10 percent level ($p = 0.084$).

[31] The difference between the estimated coefficients for the incoming transfers is statistically significant at the 1 percent level ($p = 0.009$).

[32] Unfortunately the 2004 survey did not ask about the frequency of contact with former household members.

Table 10: Descriptive statistics in 2010 by migration status

	Migration status in 2010				
	Stayer	**Continuing migrant (CM)**	**Return migrant (RM)**	**Difference CM – RM**	**Difference Stayer – RM**
Household per capita annual consumption in 2010 Tanzanian shillings	474,299.6	652,114	452,694	199,420***	21,606
	(343,231)	(549777)	(315601)		
Head of household	0.606	0.400	0.469	-0.069	0.137***
	(0.489)	(0.490)	(0.500)		
Spouse of head of household	0.238	0.503	0.362	0.141***	-0.124***
	(0.426)	(0.500)	(0.482)		
Son/daughter of head of household	0.107	0.0398	0.102	-0.0622***	0.005
	(0.309)	(0.196)	(0.303)		
Other relation to the head of household	0.0489	0.0573	0.0678	-0.0105	-0.019
	(0.216)	(0.233)	(0.252)		
Chronically ill	0.1426	0.1556	0.1921	-0.0365	-0.0495*
	(0.3498)	(0.3626)	(0.3951)		
-- Chronically ill women only:	0.1490	0.1675	0.1667	0.0009	-0.0177
	(0.3565)	(0.3738)	(0.3744)		
-- Chronically ill men only:	0.1384	0.1304	0.2319	-0.1014**	-0.0935**
	(0.3456)	(0.3374)	(0.4251)		
Jobless	0.0140	0.0339	0.0226	0.0113	-0.009
	(0.117)	(0.181)	(0.149)		
In school	0.00399	0.0175	0.00565	0.01185	-0.002
	(0.0631)	(0.131)	(0.0752)		
Works on own farm	0.635	0.516	0.667	-0.151***	-0.032
	(0.482)	(0.500)	(0.473)		
Works on someone else's farm	0.0439	0.0316	0.0621	-0.031**	-0.0182
	(0.205)	(0.175)	(0.242)		
Non-farm worker	0.303	0.401	0.243	0.158***	0.060
	(0.460)	(0.490)	(0.430)		
Engaged in non-farm business	0.598	0.463	0.475	-0.012	0.123***
	(0.491)	(0.499)	(0.501)		
Life satisfaction ladder score (LSLS)	3.865	3.842	3.542	0.300***	0.323***
	(1.520)	(1.386)	(1.365)		
--- LSLS women only:	3.864	3.864	3.435	0.428***	0.428***
	(1.546)	(1.441)	(1.320)		
--- LSLS men only:	3.867	3.710	3.710	0.087	0.156
	(1.504)	(1.266)	(1.426)		

Notes: Standard deviations in parentheses. Significance of the difference in means based on a t-test for continuous variables and Pearson's $\chi 2$-squared test for binary variables. *** p<0.01, ** p<0.05, * p<0.1.

The comparison of the consumption outcomes during the migration cycle strengthens the view that return migrants have often experienced failure of some kind in their migrations

(see Tables 4, 5 and 10). From 1991-94 to 2004, migrants' consumption increased by 62 percent, while consumption among stayers only increased by 15 percent. Importantly, as documented in Table 5, the comparison between the two migrant groups reveals no statistically significant difference in their 2004 consumption. However, Table 10 shows that once back in their baseline villages, the return migrants have, on average, the same consumption level as the stayers, whereas the consumption of the continuing migrants remains considerably higher. These observations on consumption behaviour hold for both the male and female subsamples.

However, if the migration spell was characterised by lower life satisfaction (Stillman et al. 2013), then the drop in consumption could be offset by improved subjective well-being after return. We investigate this using a Cantril (1965) ladder approach and compare the subjective well-being ladder score across the three groups of panel respondents.[33] We find that female return migrants are less satisfied with their lives than both female stayers and continuing migrants. There are no statistically significant differences among males. The mean ladder value for female return migrants is 3.4, while for both female stayers and continuing migrants the corresponding value is 3.9. The differences with both groups are statistically significant at the 1 percent level and remain significant at least at the 5 percent level if we control for differences in age, years of schooling – and marital status in 2010. As before, we caution against a causal interpretation of this correlation. In particular, we cannot distinguish whether these women return because they were unhappy, whether they become unhappy after return, or whether they are just a group of people who are innately unhappy. A closer examination of this issue would require data on migrants' life satisfaction at the time of migration. Unfortunately these questions were not asked in the 2004 round.

Conclusions

In this paper we have shown that the extent of internal return migration in Kagera in north-western Tanzania between 2004 and 2010 was 14-17 percent, depending on the sample chosen.

Using a unique dataset spanning 19 years and tracing both stayers, return and continuing migrants during three rounds of surveys, we have provided evidence that although there are positive factors associated with selection into migration, selection into return migration is mostly associated with negative factors. A number of observations point to the notion that return is associated with an unsuccessful migration experience. Among the migrants, the returnees are those who have lower levels of schooling and lower levels of

[33] More specifically, we asked each household to place themselves on a nine-step ladder measuring life-satisfaction, as follows: 'Imagine a nine-step ladder, and suppose we say that the top of the ladder, step 9, represents the best possible life for you and the bottom, step 1, represents the worst possible life for you. Where on the ladder do you feel this household stands at the present time?'

consumption during the migration spell. Furthermore, women who divorce or are widowed are more likely to return.

Despite this evidence that return represents a final fall-back option for the migrants in our study, our data do not support the hypothesis that migrants engage in strategic remitting to keep their return options open. When we consider the remittance behaviour during the migration spell, we find that men who are financially supported by their extended family at home in their village of origin are more likely to return than other migrants. For women, we find that return is positively associated with small *mutual* financial transactions between the migrants and their extended families in the baseline village. We interpret this as proxying for closeness with the extended family at home, and women who maintain close links with the home community are more likely to return home. After their return, the female returnees report lower levels of life-satisfaction compared to both stayers and to women who were still migrants in 2010. We also document that the return migrants do not engage more frequently in non-agricultural entrepreneurial activities than do the stayers; if anything the opposite is true.

All things considered, and in contrast to findings on international return migration in West Africa and internal return migration in China, our detailed descriptive analysis suggests that internal return migration in the Tanzanian context is not associated with great welfare gains to the returnees themselves, or to the home community.

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