

*MAFE Working Paper 22*

**Factors of Migration between Africa and  
Europe: Assessing the Role of Resources,  
Networks and Context.  
A Comparative Approach**

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February 2013 – Revised Version



*Funded under the  
Socio-economic  
Sciences & Humanities  
Theme*



The MAFE project is coordinated by INED (C. Beauchemin) and is formed, additionally by the Université catholique de Louvain (B. Schoumaker), Maastricht University (V. Mazzucato), the Université Cheikh Anta Diop (P. Sakho), the Université de Kinshasa (J. Mangalu), the University of Ghana (P. Quartey), the Universitat Pompeu Fabra (P. Baizan), the Consejo Superior de Investigaciones Científicas (A. González-Ferrer), the Forum Internazionale ed Europeo di Ricerche sull'Immigrazione (E. Castagnone), and the University of Sussex (R. Black). The MAFE project received funding from the European Community's Seventh Framework Programme under grant agreement 217206. The MAFE-Senegal survey was conducted with the financial support of INED, the Agence Nationale de la Recherche (France), the Région Ile de France and the FSP programme 'International Migrations, territorial reorganizations and development of the countries of the South'. For more details, see: <http://www.mafeproject.com>

Le projet MAFE est coordonné par l'INED (C. Beauchemin), en partenariat avec l'Université catholique de Louvain (B. Schoumaker), la Maastricht University (V. Mazzucato), l'Université Cheikh Anta Diop (P. Sakho), l'Université de Kinshasa (J. Mangalu), l'University of Ghana (P. Quartey,) l'Universitat Pompeu Fabra (P. Baizan), le Consejo Superior de Investigaciones Científicas (A. González -Ferrer), le Forum Internazionale ed Europeo di Ricerche sull'Immigrazione (E. Castagnone), et l'University of Sussex (R. Black). Le projet MAFE a reçu un financement du Septième Programme-Cadre de la Communauté européenne (subvention 217206). L'enquête MAFE-Sénégal a été réalisée grâce au soutien financier de l'INED, de l'Agence Nationale de la Recherche, de la région Ile de France, et du programme FSP 'Migrations internationales, recompositions territoriales et développement dans les pays du Sud'. Pour plus d'information, voir : <http://www.mafeproject.com>.

# FACTORS OF MIGRATION BETWEEN AFRICA AND EUROPE: ASSESSING THE ROLE OF RESOURCES, NETWORKS AND CONTEXT. A COMPARATIVE APPROACH\*

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**Preliminary Draft. Please do not quote**

\*We use Africa here to avoid repeating DRC/Ghana/Congo for each of the 3 flow-specific papers, and Europe to avoid repeating each of the selected destinations for each African flow in Europe (UK & Belgium for DRC; UK & Netherlands for Ghana; France, Italy & Spain for Senegal).

## INTRODUCTION

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The objective of this working paper is to provide some basic analyses that help us to identify the main factors underlying different propensities to migrate from Africa to Europe (out-migration or departure) and from Europe to Africa (return), across individuals born in different African countries. Namely, we aim at clearly distinguishing the role played by individual, household and contextual factors in increasing (or decreasing) the individual likelihood of African people to migrate between Africa and Europe, rather than the specific migration rates between these two areas and their changes over time (a topic addressed in the working paper on migration patterns).

To achieve this goal we utilize the Biographic Survey carried out by the MAFE team in both origin and destination countries between 2008 and 2009. The MAFE Survey includes information about the individual demographic characteristics, their socio-economic position, the type of households where they lived, their family ties, their legal status and their migration-related behavior since they were born.

## TYPE OF MIGRATION STUDIED AND SAMPLE DESCRIPTION

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Instead of analyzing any type of migration between the selected countries in Africa and Europe, for the sake of simplicity and easier interpretation of the results, we have restricted our analyses to first adult migration from Africa (country of origin) to Europe (selected destinations), and first direct return from Europe (selected destinations) to Africa (country of origin). In addition, short-term migrations (less than one year) and transit migrations were excluded (see Box 1 for more details).

### Box 1. Type of migrations analyzed in this document

**Definition of departure:** our analyses are restricted to first adult migrations out of the country of origin (DR Congo, Ghana or Senegal) whose final destination was one of the selected countries in Europe for each of the African flows. Migrations followed by stays in Europe shorter than 1 year, and migrations that involved intermediate stays of more than 1 year in countries different from the destination in Europe, are excluded from our sample and analyses.

**Definition of return:** our analyses of return are restricted to return from one of our selected destinations in Europe to the country of origin, with no intermediate stay in other countries. Here we include not only the first return of each individual from Europe to the country of origin but also the subsequent ones in cases where the migrant has had more than one stay in one of our selected European destinations. However, the vast majority of returns in our dataset were returns after the migrant's first long stay in Europe, not repeated returns (see sample description).

The size of the analyses samples for each flow is summarized in Table 1 and Table 2. As can be seen, both the number of individuals and the number of events is much larger for the analyses of out-migration (Table 1) than for analyses of return migration, even if we consider second and further returns for those migrants who have had more than one stay in Europe (Table 2).

**Table 1. Sample for the analyses of first adult migration to selected destinations in Europe, by country of origin**

	<b>Ghana</b>	<b>DR Congo</b>	<b>Senegal</b>
<b>Migrants to Europe</b>	372 6%	333 2%	597 14%
<b>Non-migrants</b>	1,288 94%	1,728 98%	1,072 86%
<b>Total</b>	1660 100%	2,061 100%	1,669 100%

Source: MAFE Bio Survey. Weighted percentages

It is important to remind here that our samples are made of individuals who migrated to Europe and, eventually, returned to their countries of origin in Africa at any time between 1965 and 2007/8. Obviously, some important events have modified the pattern of migration between our countries in Africa and Europe over such a long period of time, as it has been shown in Schoumaker et al (2013) (see Schoumaker et al (2013) Synthesis Paper). We will take them into account when interpreting our results, however sample size restrictions prevented us from analyzing in detail these historical variations.

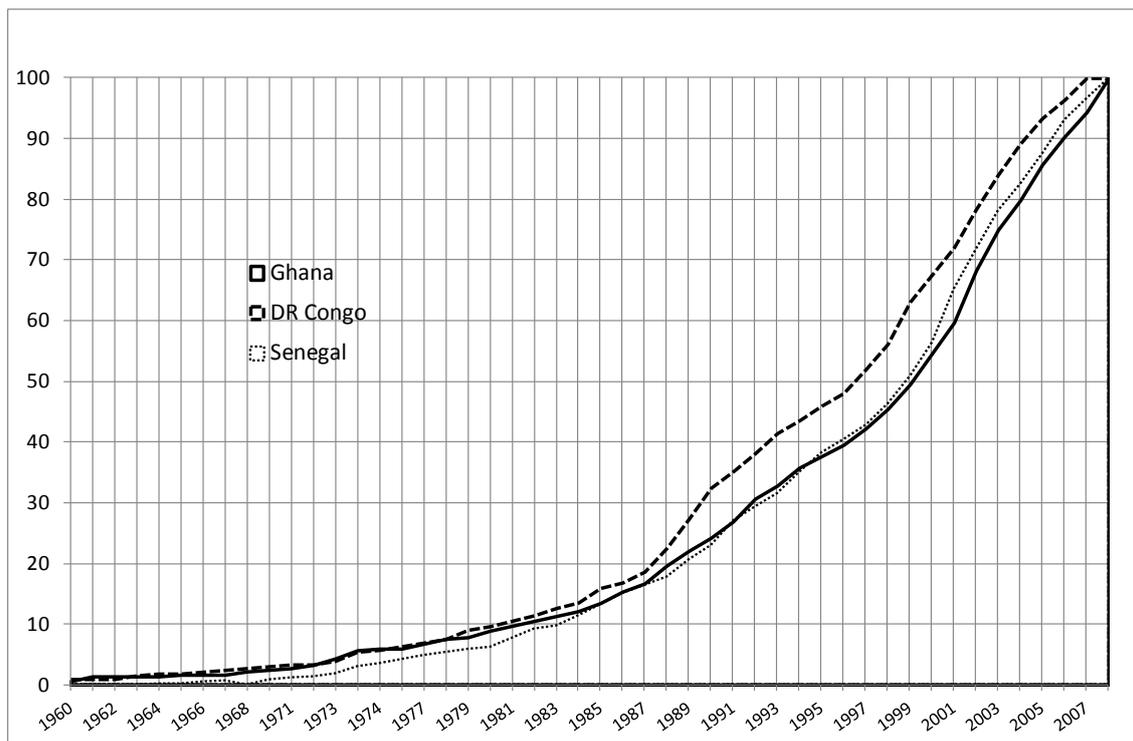
**Table 2. Samples for the analyses of return migration from selected destinations in Europe, by country of origin**

	<b>Ghana</b>	<b>DR Congo</b>	<b>Senegal</b>
<b>Migrants in Europe who ever returned to country of origin (up to 2008/9)</b>	83 37%	50 29%	84 18%
<b>Non-returnees</b>	389 63%	418 71%	578 82%
<b>Total</b>	471 100%	468 100%	662 100%
<b>N° of individuals with more than 1 return</b>	4	4	10
<b>Total n° of returns</b>	87	54	97

Source: MAFE Bio Survey. Weighted percentages

However, in order to provide the reader with a better idea of the type of migrations we are studying in this paper we have graphed the distribution of out-migration events over the time period 1960-2008 in Figure 1. As can be seen, only 10% of the migrations from Senegal to Europe considered in our analyses took place before 1982, while 75% of the migrations occurred after 1990. The distribution of Ghanaians migrations is quite similar to the Senegalese one in our analyses sample, whereas the Congolese one shows a slightly quicker development since the late eighties.

**Figure 1. Distribution of first adult migration from Senegal to Europe in MAFE Bio Survey over the period 1965-2007**



Source: MAFE Bio Survey. Weighted percentages

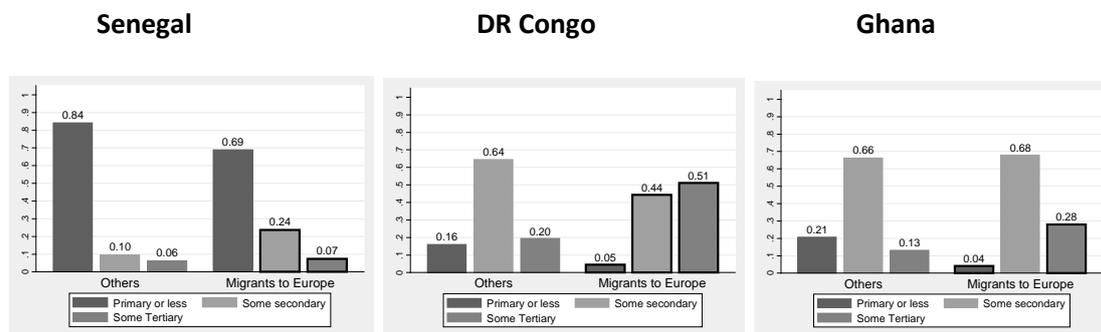
## THEORETICAL EXPECTATIONS AND PREVIOUS EVIDENCE

No matter whether we depart from a rather individualist approach and conceive migrants as income-maximizer individuals that move in reaction to international income differentials (Stajaast 1962, Harris and Todaro 1970); or whether we rather accept the view that (economic) migration should be understood within the broader context of household survival strategies that seek to reduce economic risks and facilitate capital accumulation (Taylor 1986; Stark 1991), economic motivations are of central importance among the micro-determinants of the migration decision.

Accordingly, individual-level factors associated with higher returns to migration and lower moving costs increase the probability of migration. As a result, younger people are more likely to move because they can expect a longer period to reap the benefits of migration. But for the same reason, younger people are also expected to return more since they would have still the time and opportunity to invest the savings they acquired during their stay abroad to set up a business back at the home country, to start a life a new adult forming their own household, or to take advantage of their newly acquired skills that may be scarce and in demand in their country of origin. In fact, as McKenzie (2007) shows, a preponderant portion of returning migrants go back home at the early stages of their lifecycle, when they are relatively young and, consequently, not too long since arrival to the destination country (OECD 2008). However, after declining between the five and 15 years since arrival, the probability of leaving the country declines seems to grow again reflecting the lifecycle of the migrants, and in particular a significant propensity to return home upon retirement (Jensen and Petersen, 2007).

Similarly, and for the same reasons, economists have repeatedly argued that not only youth but also those with higher levels of education or other transferable skills are also more likely to move to areas where the returns to their education or skills are higher in relative terms. Borjas (1985, 1987), for instance, argued that the conditions that determine the nature of the self-selection are derived and depend on economic and political characteristics of the sending and receiving countries and, in particular, on relative returns to skills in both locations. If wage dispersion is higher at destination than in the country of origin, there will be positive selection and viceversa. Accordingly, he predicts immigrants from most developing countries being negatively selected from the origin population in their migration to the US or similar developed countries (Borjas 1989). So, if we find positive selection of migrants is because of the costs of migration are very high, especially for the low educated that are probably not able to manage the more and more complex (and expensive) legal and bureaucratic system governing visa allocations, for instance. According to the educational profile of migrants and non-migrants in our three countries, it seems that this might be the reason why the more educated are over-represented and less educated are under-represented among those who migrate to Europe, in comparison to their non-migrants counterparts (see Figure 2). More exactly, individuals with some higher education in all the three countries, but also those with only some secondary in Senegal, are significantly over-represented (as indicated by the thick frame around the bars) among migrants, in comparison to non-migrants.

**Figure 2. Educational level of migrants and non-migrants, by country of origin**



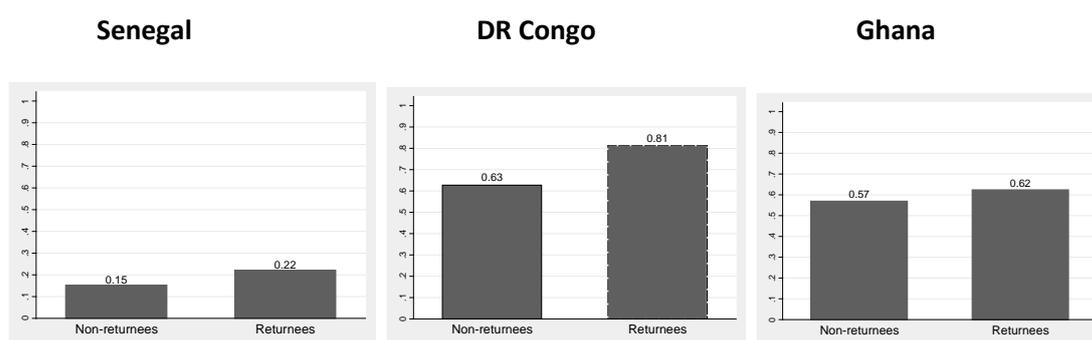
Note: the values for comparison are taken the year before migrating for individuals who migrated, and at age 27, 28 and 30 for Senegalese, Congolese and Ghanaians non-migrants, respectively, since these are the average ages at migration to Europe in these three countries

On this issue of educational selectivity in departure decisions, Shaw (2007) in a review on the main drivers of migration in 10 African countries including Ghana and Senegal, among others, points to “threshold effects” whereby those who lack financial resources assets or education are unable to move at all. However, as Quartey (2009) have emphasized in his analyses of the Ghanaian experience, the limited employment opportunities especially for the well-educated entrants to the labour market are key amongst the determinants of recent Ghanaian skilled migration. In the same line, van Dalen et al (2005) insisted on the importance expectations of achieving a higher standard of living more in line with one’s qualifications to explain migration out of Ghana, rather than on poverty per se.

In fact, the concern about the brain drain derived from migration of highly skilled migrants and their potential (negative) effects on the development prospects of their origin countries has received increasing attention in developmental studies (Docquier and Rapoport 2011 for a review), as some theoretical models show that return migration tend to amplify the original selection process at both tails of the distribution: if migrants are positively selected, return migrants tend to be the worst of the best; if they are negatively selected, returnees are the best of the worst (Borjas & Bratsberg 1994). However, more educated individuals may find important barriers to get jobs in European countries that fit their educational credentials in cases where they got their education in the country of origin, as credentials are often difficult to transfer and most jobs available at destination countries are found in low skilled occupations. These circumstances might lead more skilled migrants to return more to their home countries, where they may have better access to employment than low skilled migrants, and where they enjoy a relatively better social position. In addition, confronted with unemployment or bad working conditions in their immigration countries, better educated migrants also have more resources to come back and find a better job at home.

In fact, in European countries, the re-emigration rate of highly skilled immigrants is above the average (OECD 2008).<sup>1</sup> However, the available evidence remains inconclusive for migration of doctors and medical staff in Sub-Saharan Africa (Clemmens 2007, Bhargava et al. 2011). This is also the case of the three African flows we are analyzing here: as can be seen in Figure 3, non-significant differences emerge between returnees and migrants who had not returned yet after six years after arriving to one of our selected destinations in Europe with regard to the proportion of people with some higher education in each group. Only among the more educated Congolese migrants in Europe are marginally over-represented among those who return to their country of origin (the difference is significant only at 90% level, as indicated by the dotted frame of the bar).

**Figure 3. Educational level of returnees and their (comparable length-of-residence) non-returnees in Europe, by country of origin**



Note: the values for comparison are taken the year before returning home for the individuals who returned at some point during the period of observation, and six years after arrival for the non-returned migrants still in Europe, since the average length of residence for these three flows in their European destinations is 6 years.

<sup>1</sup> In contrast, in the United States, less-qualified immigrants (with less than lower secondary education) and those with higher education have a much higher re-emigration rate than immigrants with an intermediate level of education (OECD 2008).

Apart from education, the socio-economic position of migrants and their households at origin are definitely also an important factor to consider when explaining migration decisions, for at least two reasons. First of all, economic resources help paying for the trip and permit borrowing some money from other household's members to cope with the initial settlement in the destination country, until the migrant gets a job and so on. Secondly, in many cases, international migration responds to the need of diversifying the income sources of the household by allocating different members to different labour markets where outcomes are not correlated (Stark 1991). In these cases, individuals who belong to families with some resources and economic activity (a business or waged employment that provide with some income) are expected to be more likely to migrate than those who live in household where all the members are unemployed and fighting against poverty (Shaw 2007).

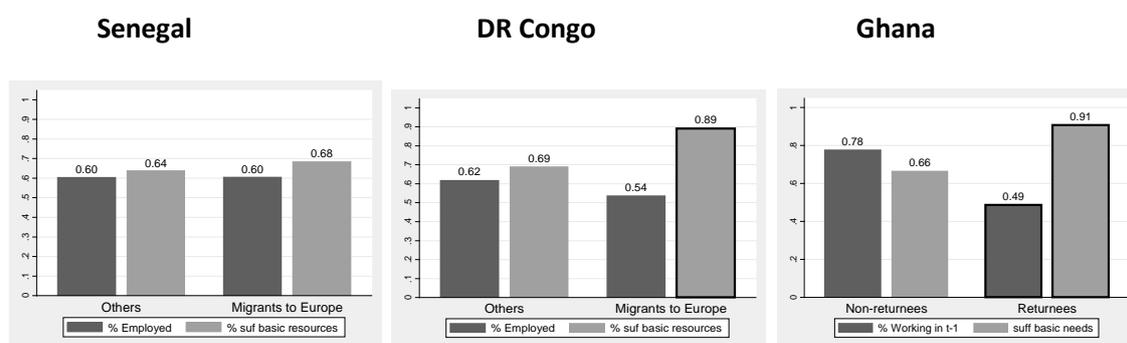
In sum, more educated individuals but also individuals coming from better-off households are more likely to be able to overcome the cost of international migration; since both characteristics are likely to be correlated, multivariate analyses that take both into account simultaneously are required to disentangle the real effect of each on shaping migration and return decisions.

In any case, it seems evident that return is likely to be closely linked to the determinants of the migration decision in the first place, since return becomes an option as soon as the migrant has achieved the aim set at the outset of the migration (Mezger 2012). To the extent they stick to their initial intentions, the individualist income-maximizer migrants conceived by the neoclassical approach are less likely to return soon after arrival since they need time to acquire their skills, find the right job, move up in the economic ladder of the country of destination, by learning the host-country language, making contacts, changing jobs, etc. In contrast, the target earner migrant will invest as little time as possible in acquiring host-country specific human capital in order to maximize her work effort (labour participation and working hours) that will allow her to save as much money as possible in the shortest time, and return. However, the target-earner is likely to send part of her wage as remittances to their relatives left-behind since migration in this case was part of a household strategy. And remittances are likely to lengthen the trip for a double reason: first of all, the larger the share of her income that is sent for daily consumption, the longer will take to achieve the pre-established amount of savings; and secondly, it may favour some sort of dependency on remittances for the relatives left-behind that will 'pressure' the migrant to keep sending for longer (see Lindstrom 1996, Bauer and Gang 1998). In other words, remittances are likely to extend the migrant's stay abroad longer than initial thought but still for shorter time than migrants who migrated with a the idea of settling in the country of destination more permanently (i.e. until retirement).

Apart from the difficulties in anticipating the duration of the migration and the return behaviour according to the clear-cut distinction between target earners and income-maximizers, such a distinction might result bit restrictive to cover the growing diversity of South-North migration. As shown in Schoumaker et al (2013), the Congolese flow, for instance, includes increasing shares of asylum seekers and international students (Schoonvaere 2010, see Schoumaker et al (2013) Synthesis Paper); doctors and other professionals from the healthcare sector have also increasingly migrated from Ghana to the UK (Anarfi et al. 2010, see Schoumaker et al (2013) Synthesis Paper); and in general, recent inflows from developing

countries to the OECD are increasingly made of marriage migrants and relatives admitted on the basis of family reunification (OECD 2011, Schoonvaere 2010 and Vause 2012 for Congolese in Belgium).<sup>2</sup> Asylum seekers or international students are likely to have quite different settlement/return plans compared to the more traditional economic migrant. As we saw in Schoumaker et al (2013), changing intentions with regard to duration of migration among the Congolese, for instance, are quite likely to be related with the aforementioned upsurge in asylum and the persistent political instability in their country of origin (see Schoumaker et al (2013) Synthesis Paper). On the other hand, international students and professionals that migrate in order to obtain specialist training not available in their countries of origin are more likely to migrate not so much because of lack of basic means for earning a living, but rather because of their frustrated expectations with regard to the kind of employment and wages they expected to obtain, as probably reflected in the lower employment rate of migrants compared to non-migrants in Ghana and DR Congo, the two flows with a higher proportion of highly educated migrants to Europe (see Figure 4, dark bars), although only in the Ghanaian case this difference is statistically significant.

**Figure 4. Employment status of migrants and non-migrants, by country of origin**



Note: the values for comparison are taken the year before migrating for individuals who migrated, and at age 27, 28 and 30 for Senegalese, Congolese and Ghanaians non-migrants, respectively, since these are the average ages at migration to Europe in these three countries

In relation to reasons for migration and visa categories, it is clear that the legal and institutional conditions are an integral part of the issue, even though they are often missing from the analysis of return migration determinants. To what extent do the specific features of migration systems and policies influence return migration, or more generally the length of stay of migrants, remains a crucial question to answer (OECD 2008). A couple of previous studies in some of our selected destinations in Europe and other OECD countries suggest show without ambiguity that conditions of entry are important to understand variations in return rates across individuals. Bijwaard (2007), for instance, found that for migrants who were admitted to the country between 1995 and 2005 for family reunification and family formation purposes, the return rate after five years of residence was 20 to 25%, whereas the corresponding figure for foreign students and labour migrants was 60% and 55%, respectively. In addition, migrants

<sup>2</sup> Note that reasons for migration do not necessarily correspond with visa admission category since migrants utilize the easier door of entry they have at hand, which is more dependent on the immigration policy of the receiving country than their ultimate motive for migrating.. In addition, it is convenient to be aware that reasons for migration are not mutually exclusive, especially family and economic reasons.

admitted as refugees or for humanitarian reasons are generally the least likely to return (OECD 2008: 188). Two caveats are due in this regard. First, it is important to remind here that admission category and reasons for migration do not necessarily match; migrants tend to use the easiest door of entry they have at hand, which does not necessarily reflect their main reason for migrating. In fact, the correspondence between migrants' reasons to migrate and category admission is expected to be weaker in those receiving countries with a higher proportion of bogus tourists like Spain or Italy (González-Ferrer 2011). Secondly, almost nothing is known about differences in the rate of return of migrants in Europe according to their regular or irregular status at entry, in contrast with studies in the US where undocumented Mexican migrants are found to be much more likely to return than legal ones (Reyes 1997), although the reasons seem not to be related to tougher policies (Massey and Espinosa 1997).

As we mentioned, in Europe, the few available studies on this issue either omit migrants who entered the country irregularly, or consider they entered under the admission category for which they were granted their first permit in the country, which is clearly misleading with regard to the reasons for migration of the individual. Our survey, unfortunately, was not able to collect retrospective year to year information on the particular type of permit that migrants hold, but only whether they were provided with a residence permit and a work permit, or refugee status, in case they were required to. Irregular migrants are definitely expected to be the large majority of those who experience forced returns; however, the effect of having a regular status in Europe, or not, on the propensity to voluntarily return to the country of origin is not straightforward. On the one hand, irregular migrants have a more vulnerable position in the host country that make them qualify for programs of assisted voluntary return periodically implemented by European countries with the support of the IOM, for instance; but on the other, irregular migrants know that returning substantially reduces their chances of being admitted in the next future to Europe again. In the context of increasingly restrictive admission policies to Europe, being already there, even if it is without the proper documentation, becomes one of the most valuable assets migrants might dream of, which explains that many migrants managed to stay in Europe for long periods even after losing their papers, especially in countries where the black market is large like most of the Mediterranean ones. These opposing forces render the effect of regular/irregular status unclear and, probably, highly context specific.

Moreover, apart from their initial intentions, in making their decision to return, migrants consider not only their situation on the host country labour market, but also the opportunities open to them in their home country. The macroeconomic and political context in the home country is a major determinant of the decision to return as was proved by differential experience of Turkish, Spanish and Greek guestworkers in Germany in the early eighties, and may alter the initial plans of the migrants with regard to the ideal duration of their stay abroad.

In the case of our three Sub-Saharan Africa countries, all have experienced long periods of economic recessions and crises, especially during most of the 1980s and 1990s. Responses from the national governments and international organizations, such as the IMF, to bad economic performance have included structural adjustment programs and liberalization of the economy. The results of these policies have been relatively diverse (Azam 2004; Thioub et al

1998). In Senegal, they have not prevented the deterioration of living conditions for large fractions of the population and the increase of insecurity and social inequalities (Weissman, 1990). In such context, migration can be interpreted as a survival economic strategy by households (Stark 1991, Barrett et al 2001, Kothari 2002). In contrast, in Ghana liberalization reforms have come along with a considerable improvement in the country's fortunes since the mid 90s (see WP6-Ghana). In the DR Congo the situation has been more complex as economic up and downs have been accompanied by war and political conflict (see WP6-DRC).

The way these changing conditions in the countries of origin may affect the individual decisions to leave and return remain largely unknown, given the difficulty to empirically control for other concurrent factors at the same time (see Schoumaker et al (2013) Synthesis Paper).

Last but not least, the availability and location of migrant social networks is likely to alter the role played by most of the potential determinants of migration reviewed so far. Networks reduce the costs of migration, risks and uncertainty providing potential migrants information about jobs in destination countries and basic assistance upon arrival, which reduces the waiting time until income is earned and some savings can be gathered and sent home (Massey 1987). Many studies have shown how individuals with household or community ties to former or current migrants have a higher likelihood of international migration (Espinosa and Massey 1997, Curran and Rivero-Fuentes 2003, Curran, Garip et al. 2005). Although much of this network effect seems to be related to family reunification decisions (Palloni et al 2001), the increasing probability to leave the country of origin for places where social ties are available has been proved even after controlling for family reunification effects (Liu 2011). However, we know almost nothing on the effect of networks on return.

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## MAIN RESEARCH QUESTIONS

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From the previous review of the literature and previous evidence we can draw the main some key questions that should be addressed in our analyses on the determinants of migration decisions of African migrants.

### Box 2. Research Questions

1. Do our African-European migration flows fit the **negative selection pattern** predicted by some authors on the basis of the large income inequalities between Africa and Europe? In other words, who are the ones leaving their countries: the more educated, the unemployed, the poor? And why?

1.1. What is the **role of education** in explaining variations in the **propensity to migrate to Europe** across African individuals?

1.2. What is the **role of employment and material resources** as drivers of migration from Africa to Europe?

1.3. Is the **same type of selection at work shaping return migration**? Who does return home: **those who succeeded or those who failed at destination**? In sum, does return migration amplify the original selection process at both tails of the distribution?

2. Which **type of resources are the most helpful in realizing people's migration intentions**: skills and education, economic assets and social networks? Do these resources matter in the same way for departure and return?

2.1. What is the actual role of partners, children and wider social networks in promoting both migration to Europe and return?

2.2. Do networks play a similar role in shaping these two migration decisions? If not, how do they differ and why?

3. Once individual and household's characteristics and resources are controlled for, what is the **role left to contextual and institutional factors** in shaping the individuals' migration decisions?

3.1. Are the **changing economic conditions and varying uncertainty** in their countries of origin what prompts people to leave? Or the effect of the country's economic performance at the aggregated level disappears once individual and household's circumstances are accounted for?

3.2. How do **reasons for departure and the legal status at destination** affect the propensity of returning across migrants?

4. To what extent is the transnationalist approach supported by the collected evidence? People that keep strong ties with their countries of origin, are more likely to return? Or do remittances and short visits lengthen trips and stay abroad?

## METHODS AND INTERPRETATION OF THE RESULTS

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In order to identify the main drivers of migration between Africa and Europe we have run two separated regression models for each flow (Senegalese, Congolese and Ghanaian), one for departure and one for return. Since both decisions are likely to be related to each other, we have introduced a set of variables in the two models (sex, educational level, economic resources of the household where the migrant lives, properties in that location, family ties and their location and macroeconomic performance of the origin country in the two previous years) to compare the role played by the same factor in shaping each of these two migration decisions; in addition, in the analysis of the determinants of return we have also included some information related to the conditions in which the migration decision was made in the first place, to test the extent to which the initial plans of migrants when leaving their country of origin act as reliable predictors of their future migratory behavior. Thus, even though we run separated models for the analysis of departure and return, we will be able to examine to what extent these two decisions are linked to each other.

Namely, we have run a series of nested discrete-time logit models that estimate the net effect that each of these covariates have on the probability of experiencing a first adult migration from Africa to Europe (versus staying in Africa), and the probability of returning to Africa (versus staying in Europe) after controlling for some other variables. As can be seen in Annex 2, variables were added in a step-wise manner: socio-demographic controls, labor and economic resources, family status and networks abroad and macro-economic conditions in the country of origin, plus the return-specific variables in the case of return analyses. However, in the rest of the document we will comment only the results of the final model, which includes all the relevant variables and controls to explain the migration decisions.

### **Box 3. How to interpret the results**

#### **Our dependent variables:**

- The migration variable may take value 1 when Ego migrated from his/her country of origin in Africa to one of the selected destination in Europe in that particular year, or value 0 in those years when no migration of this kind happened. If Ego leaves the country of origin to go to a destination different from our selected destinations, the individual is censored (eliminated from the analyses) from then on.

- The migration variable may take value 1 when Ego migrated from his/her country of origin in Africa to one of the selected destination in Europe in that particular year, or value 0 in those years when no migration of this kind happened. If Ego leaves the country of origin to go to a destination different from our selected destinations, the individual is censored (eliminated from the analyses) from then on. In other words, migrants from Senegal to Gabon, for instance, are considered as non-migrants during the years they lived in Senegal before migrating to Gabon, and never after that.

#### **Interpretation of the odd ratios:**

For the sake of clarity, in the Tables of the Appendixes, which summarize the results of time-discrete logistic regression models, we decided to present odd ratios, instead of coefficients. Positive estimates from logistic regressions of migration to Europe indicate that the log-odds of migrating are a positive function of those variables, while negative estimates indicate that the log-odds of migrating are a decreasing function of those other variables. However, we are not used to think in terms of log of the odds ratio. The odd ratios are simply the result of exponentiate the estimated coefficients.

The "Odds Ratio" is the predicted change in odds for a unit increase in the predictor. When the Odds Ratio is less than 1, increasing values of the variable correspond to decreasing odds of the event's occurrence. When the Odds Ratio is greater than 1, increasing values of the variable correspond to increasing odds of the event's occurrence.

In addition, If you subtract 1 from the odds ratio and multiply by 100, you get the percent change in odds of the dependent variable having a value of 1. For example, for the effect of being a Senegalese female on the likelihood of migrating to Europe:  $= 1 - (0.388) = 0.612$ ;

$0.612 * 100 = 61.2\%$ . The odds ratio for 'female' in this model indicates that being female (versus male) is associated with a 61 % decrease in the odds of migrating to Europe from Senegal.

### **Reading the graphs:**

Note that odd ratios for positive and negative effects are not measured on the same range: odd ratios indicating a negative effect vary between 1 and almost 0, and odd ratios indicating a positive effect vary between 1 and infinite. This makes difficult to easily compare the relative size of positive and negative effects. To solve this, we have represented both on a logarithmic scale, instead of a linear one. The length of the bars corresponds to the logarithm of the corresponding odd ratio, which is indicated by the number within the bar. White bars indicate that the effect is not statistically significant, while grey bars indicate the result is significant at level  $p < 0.05$ . Each bar indicates whether the category of interest (e.g. having some tertiary education) has an effect on migration (either departure or return) compared to the reference category (e.g. having less than some tertiary education), after controlling for all the other relevant variables.

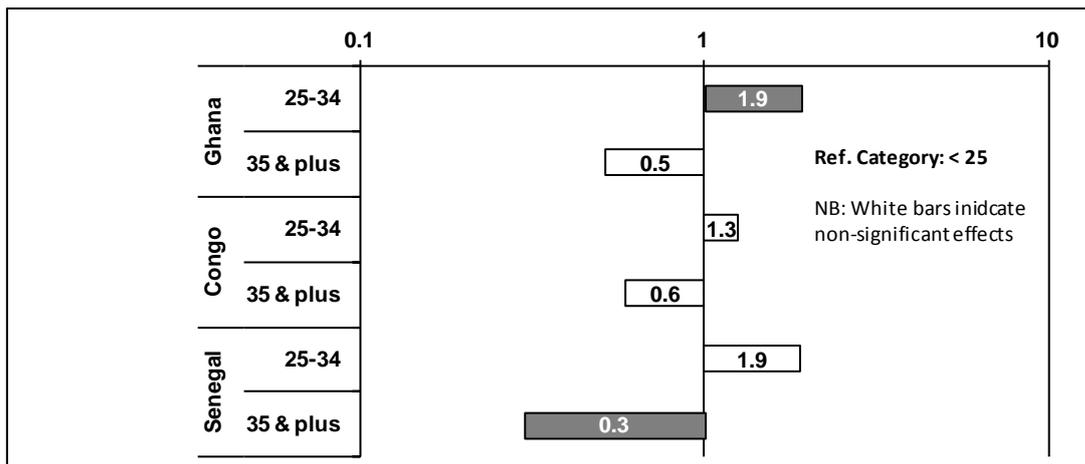
## **PRELIMINARY FINDINGS**

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### *Age and duration of migration:*

Age seems to play no significant role in the Congolese decision to migrate to Europe (see white bars for Congo in Figure 5) once other relevant factors are controlled for; likewise, the duration of their stay there does not seem to affect the decision to return of Congolese migrants in Europe (Figure 6). These two results jointly tend to confirm this African flow is the most diverse in terms of the composition among the three we are analyzing in MAFF, and for that reason their migratory patterns and dynamics are less likely to fit the theoretical expectations typically developed for economically-driven migrants with regard to timing of migration and return.

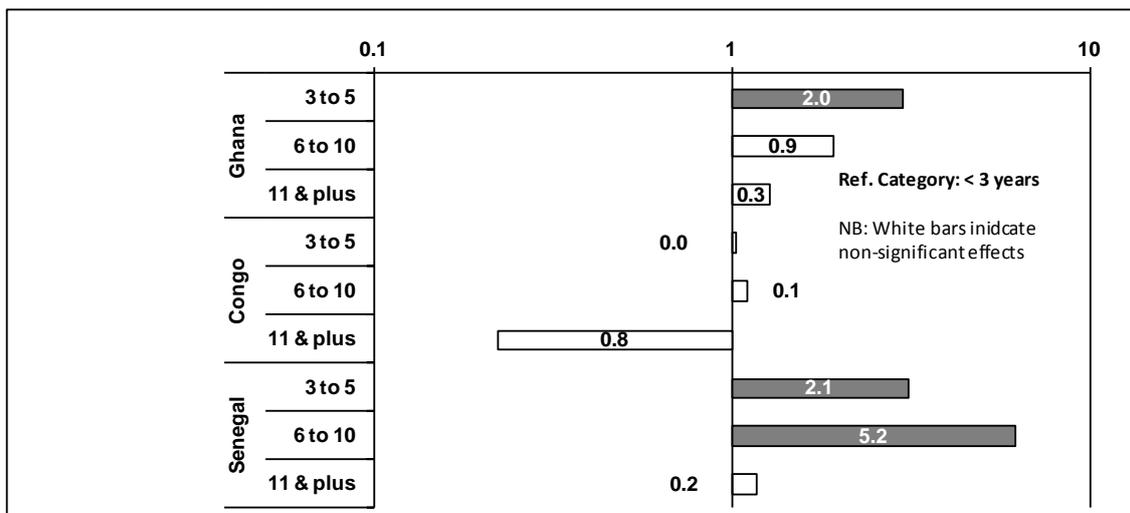
### **Figure 5. Effect of age on departure**



Note: All controls included. Bars represent the logarithmic value of the OR estimated in the full model for each flow. The numbers within the bars correspond to the exact value of the corresponding OR reported in the tables of the Appendix.

In contrast, younger people are effectively found to be more likely to migrate among the Ghanaians (25-35 years old) and the Senegalese (between 18-35) compared to those aged 35 and more, as can be seen in Figure 5. In addition, they are also more likely to return to their home country when they have lived in Europe neither too long, nor too short (between 3 and 10 years, see Figure 6). These two results make the Senegalese and the Ghanaian cases closer to the expectations of temporary (economic) migration. Moreover, Senegalese migrants in Europe seem also more likely to engage in repeated migration as indicated by their larger propensity to return during their second or further stays in Europe, whereas the opposite is true for Congolese migrants (see Tables for Determinants of Return in Appendix 3). All these results seem quite consistent with the findings in Schoumaker et al. (2013), which suggest consistently lower probabilities of returning home for Congolese than for the other two groups, and higher incidence of visits to origin among Senegalese and Ghanaian repeated migrants in Europe than among the Congolese ones (see Figure 6 and Table 2 in Schoumaker et al (2013)).

**Figure 6. Effect of length of residence at destination on return**



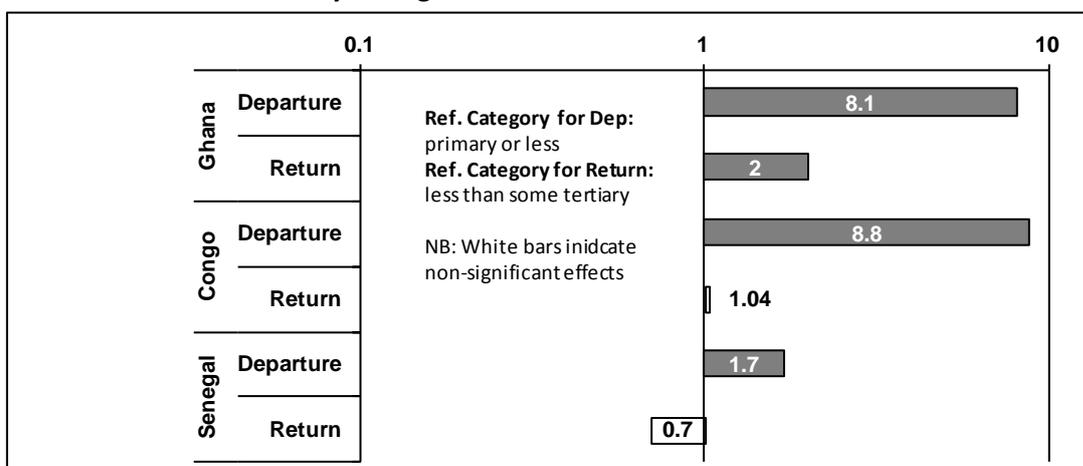
Note: All controls included. Bars represent the logarithmic value of the OR estimated in the full model for each flow. The numbers within the bars correspond to the exact value of the corresponding OR reported in the tables of the Appendix.

*Educational and socio-economic selection:*

With regard to the selection mechanisms that shape the profile of migrants and returnees in terms of education, the obtained results offer only partial support to the idea of “brain drain”: as expected, people with some higher education are in our three cases more likely to migrate to the selected destinations in Europe than people with only primary or less (in the case of Senegal also those with some secondary, see tables in Appendix 3). However, having some higher education does not make a difference in their return propensity. In other words, although the more educated out-migrate more, it is not the case that the more educated return less, which reduces instead of amplifying the out-migration selectivity, against Borjas & Bratsberg (1994). In fact, there are not significant differences by education in return propensities for the Congolese and the Senegalese migrants in Europe, once all other relevant factors shaping the return decision are controlled for. Moreover, in the case of the Ghanaians, the more educated also return more to their country of origin than their less educated counterparts, which seriously challenge the idea of ‘brain drain’ (see Figure 7).

Although the final results regarding the effect of education on migration are similar for both Congolese and Senegalese individuals, the selection dynamics appears a bit more complex among migrants from DR Congo: initially we observed a clear positive selection on return (more educated people returned more), but it disappears once reasons for migration are controlled for (see stepwise results in tables in Appendix 3). This is mainly related to the fact that migrants who left DR Congo for study reasons are substantially more likely to return than the rest of Congolese migrants in Europe. This is also the case among the Ghanaians but in their case reasons for migration do not absorb the effect of education on return propensity, which was already non-significant before adding the reasons’ covariate to the model specification. This might be related to policy changes in study visa conditions attached to scholarships requirements, for instance, as suggested in Schoumaker et al (2013) when talking about Congolese migration to Belgium.

**Figure 7. Effect of having some tertiary education on the probability to migrate to Europe and to return to the country of origin**



Note: All controls included. Bars represent the logarithmic value of the OR estimated in the full model for each flow. The numbers within the bars correspond to the exact value of the corresponding OR reported in the tables of the Appendix.

Obviously, migration selectivity is expected to operate not only with regard to educational background but also socio-economic status more widely defined. Knowledge and skills acquired with formal education definitely helps in successfully navigating the legal and bureaucratic system to obtain a visa. However, even if a visa for work is granted, paying for the trip and the initial settling down in a new place requires some extra-money, which many among the poorest lack of. This is the reason why, along with the effect of education on mobility between Africa and Europe, we have analyzed also the potential effect of different indicators that proxy the economic resources of potential migrants and migrants: their employment status (employed versus unemployed, ownership of assets in the country of origin and whether the household where they live had enough resources to cover basic needs, or not, all of them year by year).

Quite unexpectedly, none of these three indicators utilized to measure the individuals' economic capacity appeared to significantly affect the migration probability of the Ghanaians, for whom education seems to be the only valuable/critical resource to mobilize –apart from networks- in order to go to Europe. In contrast, owning some property (land, house, business, etc.) in Senegal or living in a household in DR Congo with enough resources to cover basic needs clearly help Senegalese and Congolese, respectively, to leave for Europe (see tables in Appendix 3).

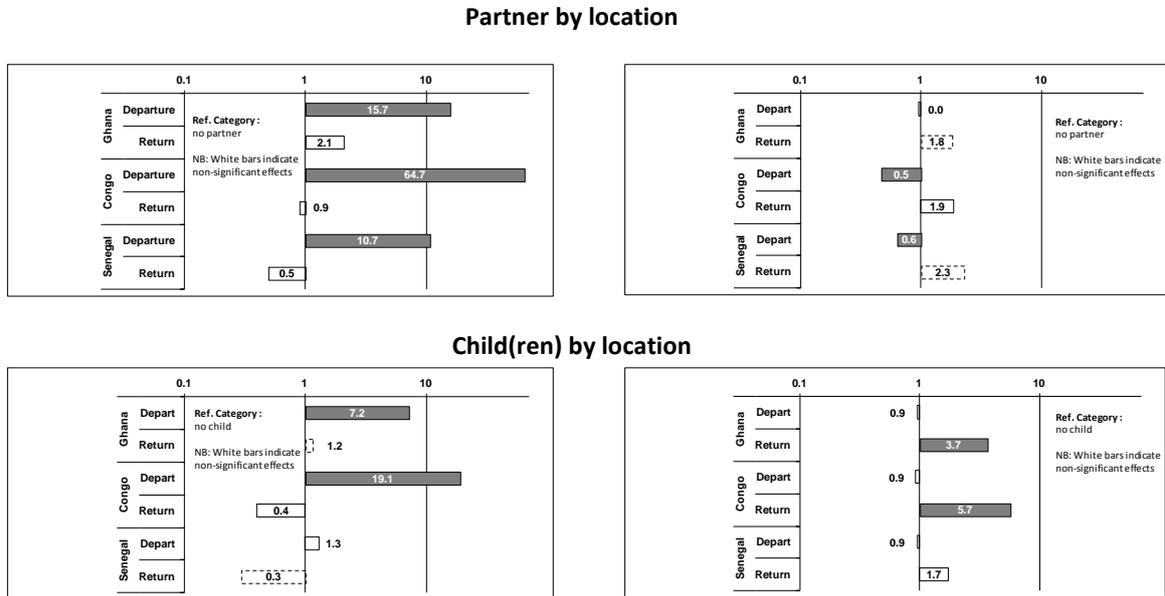
The role of the economic resources seems to be quite different in the return decision-making. In this case, money is probably less needed to cope with initial re-settlement but rather to set up a business if this was the initial migration goal or, at least, to avoid the image of a failed migration experience. Ghanaian and Congolese migrants are more likely to return when their household in Europe had sufficient resources for basic needs during the past year, which seems more consistent with the idea of returnees who have achieved their (savings) goals rather than with the idea of failure and vulnerability. In contrast, for Senegalese, neither having a job in Europe, or not, nor the economic situation of their households appear to be particularly important in shaping their return decisions once other factors are controlled for, which suggests the economic situation of the migrant during the previous year is not a crucial determinant for their return behaviour as it is often assumed (see tables in Appendix 4).

#### *Role of family and social networks:*

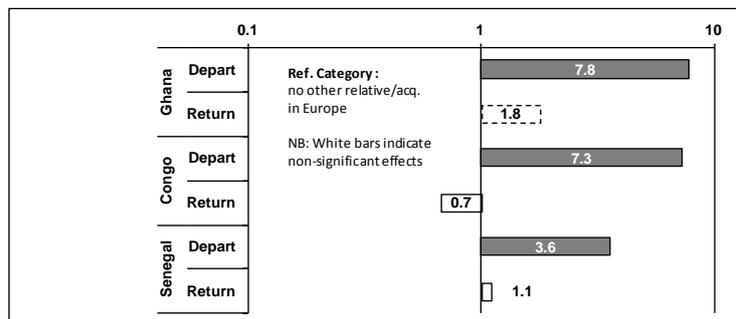
The strong effect of networks in explaining the decision to leave the country of origin is clearly confirmed by our results, especially regarding the effect of having connections in Europe. Not matter whether the link is with a partner, a child or just another more distant relative or acquaintance, having someone in Europe to rely on (not just knowing someone who lives there) increases in a substantial manner the probability to migrate to the country where that relative lives, in comparison to those who lack of these network connections in Europe. As indicated by the grey bars in the left-hand side of Figure 9 and the grey bars in Figure 10. The effect is particular strong when the network link is a partner (compare the length of the grey bars across the 3 left-hand side graphs). Across the three flows the Congolese migration decisions seem to be most strongly determined by the role of networks, which probably

related to the larger proportion of asylum seekers and refugees among them (although the smaller sample size in this case might also be part of the explanation).

**Figure 8. Effect of partners and children’s location on the migration decisions: relatives in EU in the left-hand side graphs, relatives in country of origin in right-hand side.**



**Figure 10. Other relatives, friends and acquaintances in Europe**



Note: All controls included. Bars represent the logarithmic value of the OR estimated in the full model for each flow. The numbers within the bars correspond to the exact value of the corresponding OR reported in the tables of the Appendix.

In contrast to their effect on the migration decisions, family and other social links in Europe seem to hardly affect the probability of return: note that all the bars for Return in left-hand side figures are white, which indicates non-significant effects. In other words, African migrants in Europe with partners or children in Europe, do not differ significantly in their return decisions from partner-less and childless conational migrants (ref. category).

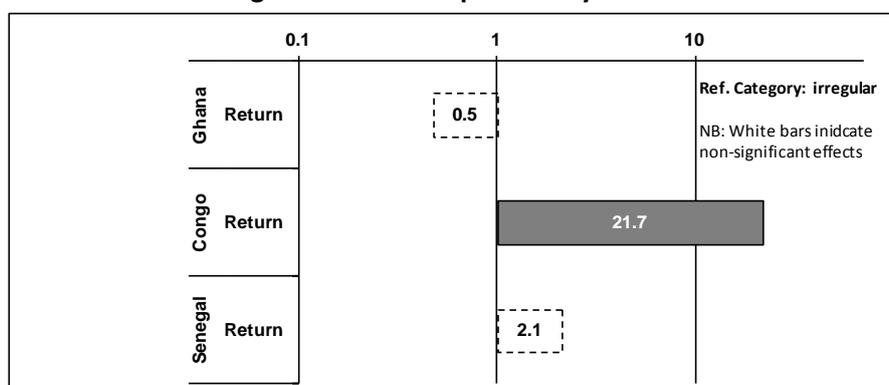
In contrast to what we have described for the effect of having family ties in Europe, having close family ties at origin (right-hand side figures) seems to be more relevant for the return decision than for migration out of Africa, especially in the case of children: having a child (or more) back in the origin country multiplies the odds of returning by almost four and six times for Ghanaians and Congolese, respectively (see grey bars in right-hand side of Figure 10). Moreover, having other relatives or friends apart from the nuclear family in Europe appears as completely irrelevant in shaping the return decision (see Figure 10), which seriously contrasts with the role of these weaker ties in helping out-migration.

The complexity and variety of family arrangements in the context of migration renders quite difficult to draw clear policy implications with regard to the effect of family links on the migration and return decisions for these three flows (see more in Mazzucato et al. 2013). In spite of the strong and positive effect that having a partner already in Europe reveals on the migration decisions of would-be migrants at origin, it is important to remind that many migrants migrate single or before having a partner at destination and, thus, family reunification policies are not the only policies to reform if destination countries want to affect the selection mechanisms defining the profile of migrants they receive, and probably not either the most effective ones to achieve this goal. In addition, gender differences are likely to be large with regard to the role played by family links both at origin and in destination, and in many cases the partner and children's location decisions are not separated decisions but simultaneous ones. Thus, the process of family separation and reunification requires from further and detailed analyses, separating by gender, in order to better understand how receiving countries might influence these processes in a consistent way with their control and integration goals, but without neglecting their implications for development in the home countries and human rights considerations.

*Legal status, reasons for migration and the return decision:*

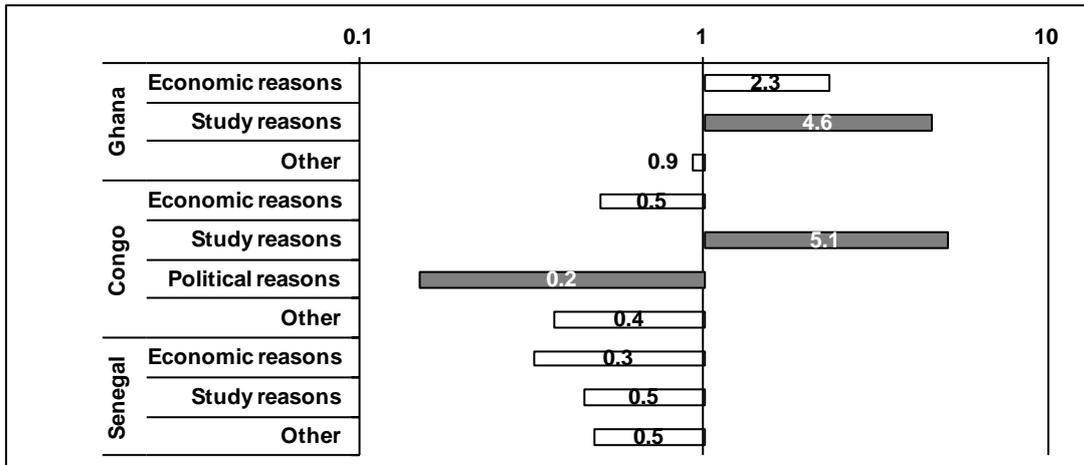
The effect of not having the right papers to live regularly in Europe reveals some contradictory results, which is not completely surprising according to what we discussed in the previous sections. As Figure 11 shows, having a regular status while living in Europe makes Congolese migrants almost 22 times more likely to return than their irregular counterparts, and doubles the return probability of Senegalese migrants living in France, Italy and Spain (although this result is only marginally significant at level 90%). In contrast, for regular Ghanaians in the UK and the Netherlands the probability of returning is half that of their irregular counterparts. Thus, there is not an automatic effect or simple relationship between legal status and return propensity but it rather seems, as we hypothesized above, the relationship is strongly context-dependent.

**Figure 11. The effect of legal status on the probability to return to the home country**



Note: All controls included. Bars represent the logarithmic value of the OR estimated in the full model for each flow. The numbers within the bars correspond to the exact value of the corresponding OR reported in the tables of the Appendix.

**Figure 12. The effect of reasons for migration on the probability to return to the home country**



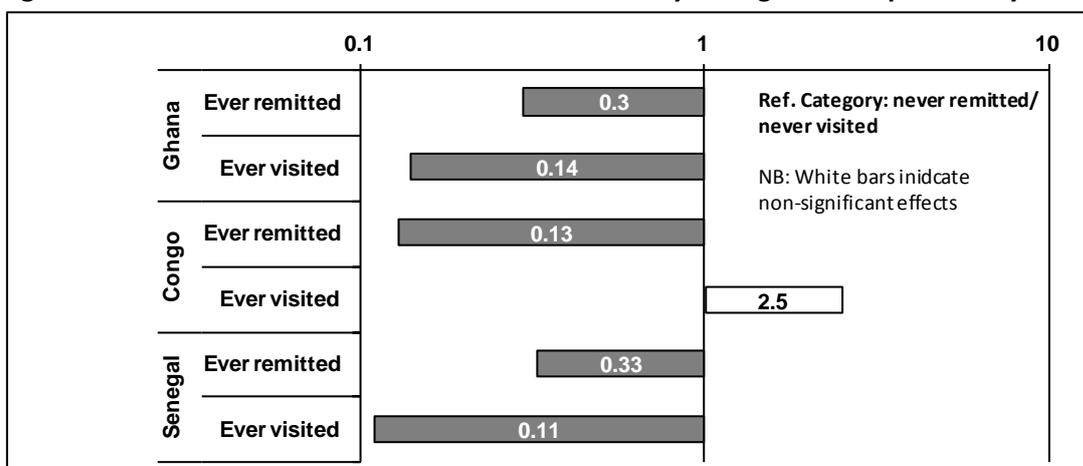
Note: All controls included. Bars represent the logarithmic value of the OR estimated in the full model for each flow. The numbers within the bars correspond to the exact value of the corresponding OR reported in the tables of the Appendix.

Further analyses are required in order to identify more precisely which are those context-specific factors that underlying the opposite results found in the UK and the Netherlands for the Ghanaians, versus the rest. However, it is important to remind that the estimated effect of legal status is net of the effect of reasons for migration, which are also controlled for and generally confirm previous findings that migrants who left their country for political reasons are the least likely to return, whereas migrants who went to Europe to study are more likely to return. As shown in Figure 12, migrants who reported to have left their country of origin to Europe for study reasons are strongly more likely to return to Ghana and Congo than those who said to migrate for family reasons (the reference category). Reasons for migration, however, do not reveal as a significant predictor of return propensity of Senegalese migrants in Europe, which might be related to the higher irregularity and larger heterogeneity of this flow. On the other hand, as expected, Congolese migrants who left their country for political reasons are the least likely to come back. Finally, it seems important to remark that migrants who declared to have migrated to Europe for economic reasons never reveal return propensities different from family-linked migrants, in any of the three flows, and that increasing rates of GDPpc growth in the country of origin does not affect the return propensity for any of the three flows either (although it reduced the emigration rate of Congolese, see Appendix).

Finally, contrary to what might be expected, keeping alive and active the ties with the left-behind relatives through remittances and short visits to the country of origin while being abroad tend to delay the return decision instead of accelerating it for the three flows. As represented in Figure 13, the only case in which the effect is not significant is short visits among the Congolese; however, the rest of the effects are substantial and significant, as indicated by the length of the bars. A caution in interpreting these results is needed: the negative effect of these variables on return does not necessarily imply that people who remit return less but maybe that they take longer to do it. Note that we have not observed our

migrants over their complete life and most of our cases suffered from right censorship, which means that they have not returned yet but might do it in the next future.

**Figure 13. Effect of remittances and visits to the country of origin on the probability to return**



Note: All controls included. Bars represent the logarithmic value of the OR estimated in the full model for each flow. The numbers within the bars correspond to the exact value of the corresponding OR reported in the tables of the Appendix.

In any case, these two findings are not as surprising as they may seem at first glance. Firstly, we have multiple histories of migrants complaining about how dependent and demanding relatives left-behind become with regard to their money periodically remitted (Senegalese in Spain during the crisis often explain that they cannot return since they would appear as ‘losers’ and that their families keep asking for them to send money without understanding the current labour market situation in Europe). Secondly, in this context of migration and remittances as a family survival strategy, the advocates of the transnational approach have repeatedly insisted in the crucial role of periodical (or even sporadic) visits in helping “to oil the functioning of the split families” (Grillo and Mazuccato 2008). Thus, these two results may be taken as indications confirming that migration of some household’s member and living apart across borders for relatively long periods of time can result a stable and functional arrangement to cope with economic difficulties at origin.

## CONCLUSIONS AND DISCUSSION

MAFE data give credence to the view that African migration to Europe is a migration of skills: more educated people systematically are more likely to out-migrate than less educated ones. These results contradict the negative selection of migrants from developing to developed countries predicted by Borjas’ theoretical model. As mentioned before, the explanation could be on the costs side: if migration costs are very high (due for instance to very restrictive policies), the lowest educated are probably not able to manage the system to apply and obtain visas or even to establish effective contacts in order to migrate irregularly. In fact, the positive effect of education on the likelihood of departure remains unchanged for all the three flows even after considering the potential help that other resources such as employment, properties or economic resources of the origin household may entail. In other words, the positive effect of education is net of the potential effect of any other resources’ availability, including

networks effect, which revealed to be the most powerful resource to mobilize in order to migrate to Europe but separated and distinct from education.

In contrast, the effect of education seems to be rather irrelevant in explaining return decisions, especially for the Ghanaians (the most educated flow in MAFE) but also for the Congolese and Senegalese, once that other effects like the higher return likelihood of migrants who went to Europe for study reasons is accounted for. Indeed, the long-lasting effect of the initial reasons to migrate on return decisions deserves to be emphasized since it confirms that migration is a life project and that migrants, at least some times, remains faithful to their initial plan.

As we mentioned above, having connections in European destinations appear as the most powerful resource in helping outmigration from Africa to Europe. A large part of these results reflect the pull effect of partners living abroad; this is strictly not a network effect as conceived in the literature but rather the result of family reunification processes that may respond in many cases to migration plans that were decided much earlier the first-mover left. Moreover, the pulling effect of partners in Europe for the partners left behind might be gender-specific, a possibility that has not been explore in depth in this paper.<sup>3</sup> However, regardless of how we interpret the strong positive effect of having partners at destination, the network hypothesis is largely confirmed in relation to out-migration since our results indicate that having relatives other than partners and children, and acquaintances and friends in Europe increases in a significant and strong manner the likelihood of departing to Europe for the three flows studied in MAFE.

In contrast, the effect of network connections on explaining return decisions revealed much more complex. First of all, having other relatives different from partner and children in Europe, as well as friends or acquaintances, seems to play no relevant role in shaping return decisions of African migrants. Secondly, having a partner in the country of origin only marginally increased the odds of return for both Ghanaians and Senegalese migrants in comparison to those who have no partner at all (ref. category), whereas living with a partner in Europe did not significantly reduce the odds of return for anybody. Moreover, having at least one child in Europe did not affect either the return propensity of any of our three African flows in Europe (only marginally for Senegalese), in opposition to the idea that having children at destination is one the clearest indication of permanent settlement. In fact, there is no clear pattern with regard to the influence of the children's location on migration decisions since having some children in the country of origin did not reveal either any significant effect on return for any of the three flows. Thus, further analyses that distinguish by origin, gender and destination are needed in this regard.

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<sup>3</sup> Controls for ethnic and religious affiliation confirmed some significant heterogeneity with regard to the migration propensity. However, the inclusion of these controls does not substantially alter the role of any of the main determinants we have identified so far, with the only exception of gender among Senegalese migrants: before adding controls for ethnic and religious groups, women appeared marginally more likely to return than their male counterparts but this effect disappears once ethnic and religion controls are added. Further specific analyses of the potential interactions between gender and other determinants in shaping the migration decision of African people is definitely needed in order to fully understand potential differences in the migration dynamics of men and women

With regard to the legal status of migrants, one of the most interesting results of our analyses is its significant bearing on the likelihood of return for Congolese and (to a lesser extent) Senegalese migrants, with those who are undocumented much less likely to return in these migrant populations. In contrast, among the Ghanaians we found the opposite result: migrants in an irregular situation are significantly more likely to return, and this is definitely true for those living in the UK; for those living in the Netherlands we could not either confirm or reject the result due to the small number of migrants who actually returned from there to Ghana in our sample. These results clearly claim for further studies on this issue, which entails quite relevant policy implications. It is not clear from our data whether the opposite results obtained for Congolese and Senegalese on the one hand, and the Ghanaians on the other, are due to significant differences in the way that different receiving countries in Europe deal with irregularity, or rather to differences in migrants' expectations and social meaning of irregular status across different origin groups. In any case, our findings clearly reject an automatic relationship between legal status and return behaviour.

Finally, neither age nor gender display consistent effects across the three flows: women are only less likely to migrate to Europe among the Senegalese but no significant difference emerged among the Ghanaians and the Congolese flows, and younger people are more likely to migrate to Europe, and also to return, among the Ghanaians and the Senegalese, but not for the Congolese. All these results clearly reinforce the image of large internal diversity across the migratory flows between different Sub-Saharan countries and different European destinations.

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## POLICY IMPLICATIONS

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European policies on migration could welcome such migration, but need to pay attention to the consequences for availability of skills in African countries. Moreover, given that those migrating for education were found to be more likely to return to Africa than other migrant groups, policies focused on promoting educational mobility and exchange could be deployed to encourage 'brain circulation'.

As we mentioned, success to family networks in Europe increases the probability of migration across all the three flows studied by the MAFE project – but the importance of family reunification should not be overstated. First of all, as highlighted in MAFE WP8, a quarter of African migrants are single when they migrate to Europe and, secondly, keeping the family apart is far from guarantying the migrants' earlier return, as our results show. Moreover, if European countries wish to tackle with selection mechanisms defining the profile of migrants they receive, family reunification policies are probably not the most effective ones in this regard since a large proportion of migrants had no relatives at destination when they were firstly admitted to their European country of residence.

Policies to promote return migration could also take into account the time period – 3-to-10 years – within which return is more likely to occur. This is a period in which many migrants have often earned sufficient money to use productively back home, without establishing the kinds of ties that in some cases discourage return. European policies on 'temporary' migration need to consider this timeframe, as those migrants who do intend to return are unlikely to do so before they have either succeeded in reaching the ultimate goal of their migration or failed

having exhausted all available avenues. In fact, migrating for family or economic reasons seem quite irrelevant to predict return behaviour for the three groups, while study reasons are definitely associated with higher rates of return for Ghanaians and Congolese but does not for the Senegalese (which is probably related to the much smaller relative size of this group of migrants in Senegal than in the other two countries)

Finally, and somehow counter-intuitively, policies to promote return could start considering the possibility that migrants are reluctant to leave their European countries of residence if they cannot guarantee for their families and themselves the possibility to be (re-)admitted in the next future. Consequently, regularisation measures may increase return and circular mobility and not only family reunification and permanent settlement, as usually assumed.

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## Appendix 1. Variables included in the multivariate analyses of departure

Variable name	Definition	Response categories	Lagged	Comments
<b>Departure</b>	See description in the main text	0=no, 1=yes		
<b>Age</b>	Ego's age	<25, 25-34, 35+		
<b>Female</b>	Ego's sex	0=no, 1=yes		
<b>Educational level</b>	Ego's highest educational level	0=some primary or less, 1=some secondary, 2=some tertiary		
<b>Employed</b>	Ego is employed	0=no, 1=yes	Yes	All Egos included; people inactive counted as non-employed
<b>Suff</b>	Ego's household where Ego lived had enough resources for basic needs	1=More than suff or suff, 0=Just suff or insuff	Yes	Referred to the dwelling where Ego lived the year before
<b>Assets in country of origin</b>	Location of Ego's assets	0=No asset, 1= Yes	Yes	
<b>Partner in Europe</b>	Ego has a partner in selected EU destinations	0=no, 1=yes	Yes	Any kind of partner is included in this variable (not only spouses but also not married partners declared by Ego). Note that Ego may have simultaneously partners in different locations (not only because of legal polygamy since here we do not restrict to spouses)
<b>Partner in Origin</b>	Ego has a partner in country of origin	0=no, 1=yes	Yes	
<b>Partner in Other countries</b>	Ego has a partner in other country	0=no, 1=yes	Yes	
<b>Child(ren) in Europe</b>	Ego has a child in selected EU destinations	0=no, 1=yes	Yes	Children of all ages are included in this variable (not only minors). Note that Ego may have simultaneously children in different locations
<b>Child(ren) in Origin</b>	Ego has a child in country of origin	0=no, 1=yes	Yes	
<b>Children in Other countries</b>	Ego has a child in other country	0=no, 1=yes	Yes	
<b>Other relatives/friends in Europe</b>	Ego has other relatives and/or friends in Europe diff from partners and children	0=No, 1=Yes	Yes	
<b>GDP growth at origin (lagged 2 years)</b>	Average GDP growth rate in 2 previous years in country of origin		Yes	
<b>Devaluation</b>	A devaluation took place in the country of origin	0=other years, 1=year & year after a devaluation took place in the country of origin		

## Appendix 2. Variables included in the multivariate analyses of return

	Variable name	Label	Response categories	Lagged	Comments
	<b>Return</b>	See description in the main text	0=no, 1=yes		Repeated returns by the same individual are included (and models correspondingly clustered on ident)
<b>Controls</b>	<b>Repeat</b>	Ego experienced at least a previous return from selected destination in Europe	0=no, 1=yes		
	<b>Dest</b>	Country of destination in Europe			
	<b>Sequet</b>	Ego's length of residence in selected European countries (number of years)	1-2, 3-5, 6-10, 11+		Time starts at year 1 for every return; for the very few individuals who returned the same year they arrived to Europe (year 1), variables cannot be lagged so they take the value they had that same year. For the rest of individuals (those who did not return the same year of arrival) variables are truly lagged.
<b>Socio-demog. Factors</b>	<b>Agemig</b>	Ego's age at first migration to selected destination in Europe	<25, 25-34, 35+		
	<b>Female</b>	Ego's sex	0=no, 1=yes		
	<b>Univ2</b>	Ego had some tertiary education	0=no, 1=yes		Due to the smaller sample size in the analyses of return behavior, the more complete education variable including 3 responses was omitted. However, previous test showed that results for people having some secondary, or some secondary or more were not significant nor affected the rest of the reported results.
<b>Integration at destination</b>	<b>Employed</b>	Ego is employed	0=no, 1=yes	Yes	All Egos included; people inactive counted as non-employed
	<b>Suff</b>	Ego's household where Ego lived had enough resources for basic needs	1=More than suff or suff, 0=Just suff or insuff		Referred to the dwelling where Ego lived the year before
	<b>Legal status</b>	Ego's legal status in Europe	0=irregular, 1=regular	Yes	
<b>Family status &amp; social network</b>	<b>Partner in Europe</b>	Ego has a partner in selected EU destinations	0=no, 1=yes	Yes	Any kind of partner is included in this variable (not only spouses but also not married partners declared by Ego). Note that Ego may have simultaneously partners in different locations (not only because of legal polygamy since here we do not restrict to spouses)
	<b>Partner in Origin</b>	Ego has a partner in country of origin	0=no, 1=yes	Yes	
	<b>Partner in Other countries</b>	Ego has a partner in other country	0=no, 1=yes	Yes	
	<b>Child(ren) in Europe</b>	Ego has a child in selected EU destinations	0=no, 1=yes	Yes	Children of all ages are included in this variable (not only minors). Note that Ego may have simultaneously children in different locations
	<b>Child(ren) in Origin</b>	Ego has a child in country of origin	0=no, 1=yes	Yes	
	<b>Children in Other countries</b>	Ego has a child in other country	0=no, 1=yes	Yes	
	<b>Other relatives/friends in Europe</b>	Ego has other relatives and/or friends in Europe diff from partners and children	0=No, 1=Yes	Yes	

Contacts with country of origin	<b>Ever Remitted</b>	Ego remits to origin	0=no, 1=yes	Yes	
	<b>Ever Visited country of origin</b>	Ego's visit to his/her country of origin	0=no, 1=yes	Yes	
Char. of migr	<b>Migreason</b>	Reasons for migration to the selected destination in Europe declared by Ego	Family, Economic, Study, Political, Other		In the Ghanaians analyses there were too few people that mentioned Political Reasons so the category was systematically expelled by Stata. To avoid this problem, these cases are merged with the residual category Other reasons
Macro-ec. conditions in country of origin	<b>Devaluation</b>	A devaluation took place in the country of origin	0=other years, 1=year & year after a devaluation occurred		
	<b>GDP growth at origin (lagged 2 years)</b>	Average GDP growth rate in 2 previous years in country of origin			

### Appendix 3. Logit time-discrete models estimating the determinants of migration to Europe

#### 1. GHANA

	Gross Effects	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Ref. &lt;25 years old</b>								
<b>25-35</b>	1.73**	1.552**	1.691**	1.744**	1.901**	1.783**	1.921**	1.916**
<b>35 &amp; plus</b>	0.35***	0.336***	0.373***	0.521**	0.515*	0.533	0.527	0.519
<b>Female (ref. male)</b>	0.57**	0.997	1.030	0.821	0.735	0.830	0.740	0.745
<b>Ref. Primary or less</b>								
<b>Some secondary</b>	4.10***	3.617***	3.721***	2.996**	2.213**	2.947**	2.231**	1.947*
<b>Some tertiary</b>	29.0***	26.13***	27.66***	14.64***	9.419***	14.65***	9.525***	8.123***
<b>Employed (ref. no)</b>	0.68*		0.806	0.908	0.880	0.912	0.879	0.881
<b>Suf resources for basic needs (ref. no)</b>	1.17		0.734	1.086	0.907	1.049	0.914	0.917
<b>Some asset in Ghana(ref. no)</b>	0.69		0.999	0.793	0.629	0.807	0.637	0.639
<b>Ego has a partner in Europe (ref. no)</b>	69.24***			30.56***	16.21***	28.08***	16.24***	15.67***
<b>Ego has a partner in Origin (ref. no)</b>	0.65**			0.880	0.963	0.923	0.960	0.958
<b>Ego has a partner in Other country (ref. no)</b>	4.58***			3.653***	4.467***	3.982***	4.438***	4.574***
<b>Ego has a child in Europe (ref. no)</b>	2.28**				7.418***	4.058**	7.471***	7.187***
<b>Ego has a child in Origin (ref. no)</b>	0.45***				0.973	0.865	0.966	0.964
<b>Ego has a child in Other country (ref. no)</b>	0.50				0.531	0.757	0.533	0.520
<b>Ego has other relatives/friends in Europe (ref. no)</b>	14.61***				7.721***		7.816***	7.827***
<b>Average GDP growth rate in 2 previous years in Ghana</b>	1.02						0.990	0.991
<b>Devaluation year</b>	0.94						1.177	1.165
<b>Muslim (ref. no)</b>	0.13***							0.201**
<b>Person-years</b>	31793	31793	31793	31793	31793	31793	31793	31793
<b>Events</b>	372	372	372	372	372	372	372	372
<b>Egos</b>	1660	1660	1660	1660	1660	1660	1660	1660

Exponentiated coefficients; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.001$

## 2. DRCONGO

	Gross Effects	(1)	(2)	(3)	(4)	(5)	(6)
<b>Ref. Younger 25</b>							
<b>25-34</b>	1.66**	1.325	1.264	1.419	1.441	1.179	1.264
<b>35 &amp; plus</b>	0.71	0.603	0.602	0.805	0.896	0.553	0.595
<b>Female (ref. male)</b>	0.89	1.481	1.418	1.125	1.182	0.923	0.924
<b>Ref. Primary &amp; less</b>							
<b>Some secondary</b>	2.29***	2.161**	1.875**	1.446	1.391	1.137	1.091
<b>Some tertiary</b>	20.58***	21.70***	18.08***	12.97***	12.73***	8.842***	8.823***
<b>Employed (ref. no)</b>	0.88		1.348	1.542	1.599	1.585	1.537
<b>Suf. for basic needs (ref. no)</b>	3.44***		2.108***	1.999**	2.215**	2.634***	2.650***
<b>Some asset in DRC (ref. no)</b>	0.52***		0.701	0.629	0.638	0.630	0.665
<b>Ego has a partner in Europe (ref. no)</b>	106.76***			60.84***	50.25***	59.54***	64.37***
<b>Ego has a partner in Origin (ref. no)</b>	0.26**			0.420**	0.448**	0.472**	0.472**
<b>Ego has a partner in Other country (ref. no)</b>	8.14**			7.483**	8.900**	9.792**	9.516**
<b>Ego has a child in Europe (ref. no)</b>	14.54***				38.40***	21.19***	19.10***
<b>Ego has a child in Origin (ref. no)</b>	0.49**				0.840	1.005	0.930
<b>Ego has a child in Other country (ref. no)</b>	1.04				0.238**	0.287*	0.305**
<b>Ego has other relatives/friends in Europe (ref.no)</b>	10.8***					7.164***	7.281***
<b>Average GDP growth rate in 2 previous years in DR Congo</b>	0.96						0.948**
<b>Person-year observations</b>	40271	40271	40271	40271	40271	40271	40271
<b>Events</b>	333	333	333	333	333	333	333
<b>Egos</b>	2061	2061	2061	2061	2061	2061	2061

Exponentiated coefficients; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.001$

### 3. SENEGAL

	Gross Effects	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<b>Ref. Younger 25</b>								
<b>25-34</b>	1.06	1.021	0.984	1.099	1.145	0.976	0.947	0.931
<b>35 &amp; plus</b>	0.28***	0.313***	0.264***	0.370***	0.411***	0.370***	0.355***	0.342***
<b>Female (ref. male)</b>	0.34***	0.418***	0.439***	0.344***	0.357***	0.370***	0.367***	0.388***
<b>Ref. Primary &amp; less</b>								
<b>Some secondary</b>	3.78***	2.901***	2.809***	2.509***	2.463***	1.887***	1.892***	1.938***
<b>Some tertiary</b>	2.80***	2.243***	2.146***	2.040**	2.031**	1.782**	1.786**	1.773**
<b>Employed (ref. no)</b>	1.23*		0.985	1.032	1.017	0.951	0.943	0.959
<b>Suf. for basic needs (ref. no)</b>	1.36**		1.198	1.097	1.094	1.046	1.045	1.038
<b>Some asset in Senegal (ref. no)</b>	1.30		1.603**	1.689**	1.725**	1.582**	1.575**	1.679**
<b>Ego has a partner in Europe (ref. no)</b>	10.10***			12.14***	12.43***	10.17***	10.27***	10.77***
<b>Ego has a partner in Origin (ref. no)</b>	0.40***			0.601***	0.636**	0.648**	0.651**	0.637**
<b>Ego has a partner in Other country (ref. no)</b>	1.46			1.757	1.854	1.953	1.957	2.113
<b>Ego has a child in Europe (ref. no)</b>	0.88				1.192	1.307	1.330	1.300
<b>Ego has a child in Origin (ref. no)</b>	0.44***				0.877	0.943	0.958	0.957
<b>Ego has a child in Other country (ref. no)</b>	0.10**				0.201*	0.221	0.222	0.244
<b>Ego has other relatives/friends in Europe (ref.no)</b>	5.24***					3.788***	3.686***	3.567***
<b>Average GDP growth rate in 2 previous years in Senegal</b>	1.09***						1.046	1.049
<b>Devaluation year</b>	0.48**						0.564	0.553*
<b>Ref. Other ethnic groups</b>								
<b>Wolof</b>	1.29**							1.777***
<b>Pular</b>	2.29***							1.754**
<b>Ref. Other religion</b>								
<b>Mouride</b>	1.34**							0.922
<b>Tidiane</b>	0.45***							0.605**
<b>Person-year observations</b>	28877	28877	28877	28877	28766	28877	28877	28877
<b>Events</b>	597	597	597	597	597	597	597	597
<b>Egos</b>	1669	1669	1669	1669	1669	1669	1669	1669

Exponentiated coefficients; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.001$

#### Appendix 4. Logit time-discrete models estimating the determinants of return from Europe to the country of origin

##### 1. GHANA

		1	2	3	4	5	6	7	8
<b>Netherlands (ref. UK)</b>	0.11***	0.117***	0.121***	0.122***	0.0972***	0.128***	0.196***	0.188**	0.191**
<b>More than 1 return (ref.no)</b>	3.66**	2.102**	2.025*	2.012*	1.868*	1.938*	1.518	1.72	1.734
<b>Ref. Length of Stay in Europe &lt; 3 years</b>									
<b>3-5 years</b>	1.2	1.217	1.217	1.34	1.488	2.146*	2.617**	3.050**	2.968**
<b>6-10 years</b>	0.46	0.492	0.485	0.608	0.749	1.128	1.386	2.005	1.92
<b>11 &amp; plus</b>	0.22**	0.246**	0.241**	0.340**	0.439	0.708	1.011	1.298	1.272
<b>Female (ref. male)</b>	0.85	0.886	0.901	0.968	1.191	1.274	0.974	1.141	1.12
<b>Some tertiary (Ref. Less)</b>	1.17		1.145	0.945	1.219	1.361	1.628*	0.987	1.043
<b>Suf income in HH to cover basic needs (ref. No)</b>	4.32***			3.834***	3.879***	3.470**	2.099*	2.454**	2.450**
<b>Employed (ref. no)</b>	0.29**			0.431**	0.324**	0.270**	0.300**	0.308**	0.316**
<b>Legal status (ref. no)</b>	0.26**				0.187***	0.355**	0.67	0.470*	0.477*
<b>Ego has a partner in Europe (ref. no)</b>	0.23***					0.578	1.083	0.943	0.889
<b>Ego has a partner in Origin (ref. no)</b>	3.8***					1.961**	2.278**	1.866*	1.833*
<b>Ego has a partner in Other country (ref. no)</b>	1.14					1.262	0.98	0.775	0.681
<b>Ego has a child in Europe (ref. no)</b>	0.25***					0.812	0.803	1.103	1.158
<b>Ego has a child in Origin (ref. no)</b>	2.65**					2.492**	2.779**	3.628**	3.647**
<b>Ego has a child in Other country (ref. no)</b>	0.43					1.215	1.673	2.462	2.517
<b>Ego has other relatives/friends in Europe (ref.no)</b>	0.40**					0.699	1.39	1.776*	1.787*
<b>Remitted to Ghana (ref. no)</b>	0.38**						0.293***	0.291***	0.306***
<b>Visited Ghana (ref. no)</b>	0.35**						0.186***	0.152***	0.146***
<b>Ref. Migration for Family Reasons</b>									
<b>Economic reasons</b>	1.58							2.282	2.269
<b>Study reasons</b>	5.31***							5.094**	4.683**
<b>Other reasons</b>	2.69**							0.977	0.947
<b>Average GDP growth rate in 2 previous years in Ghana</b>	0.9								0.985
<b>Devaluation</b>	2.82**								1371
<i>N</i>		5367	5367	5367	5367	5367	5367	5367	5367
<i>Events</i>		86	86	86	86	86	86	86	86
<i>Egos</i>		471	471	471	471	471	471	471	471

Exponentiated coefficients; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.001$



### 3. SENEGAL

	Gross Effects	1	2	3	4	5	6	7	8
Italy (ref. France)	<b>0.43**</b>	0.355***	0.377**	0.413**	0.402**	0.297***	0.310**	0.339**	0.370**
Spain	0.53	0.47	0.507	0.568	0.56	0.508	0.793	0.802	0.901
More than 1 return	<b>11.3***</b>	9.055***	9.039***	8.853***	8.919***	11.23***	14.52***	13.17***	13.00***
Ref. Length of Stay in Europe < 3 years									
3-5 years	1.35	1.567	1.528	1.646	1.751	1.793	2.918**	3.053**	3.079**
6-10 years	1.43	1.8	1.696	1.933	2.089	2.584*	5.915**	6.115**	6.159**
11 & plus	<b>0.20***</b>	0.247**	0.239**	0.290**	0.316*	0.481	1.013	1.077	1.171
Female (ref. male)	1.2	0.875	0.905	0.814	0.814	2.192*	1.934	1.566	1.598
Some tertiary (Ref. Less)	1.71		1.445	1.273	1.293	1.902**	1.899*	1.892*	2.014**
Suf income in HH to cover basic needs (ref. No)	1.12			1.076	1.097	0.991	0.919	0.859	0.846
Employed (ref. no)	<b>0.39**</b>			0.6	0.602	0.535*	0.737	0.773	0.749
Legal status (ref. no)	0.8				0.804	1.405	2.122*	2.175*	2.131*
Ego has a partner in Europe (ref. no)						0.393**	0.614	0.461	0.464
Ego has a partner in Origin (ref. no)						2.056**	2.305**	2.408**	2.313*
Ego has a partner in Other country (ref. no)						2.600**	1.471	1.599	1.733
Ego has a child in Europe (ref. no)						0.248**	0.371*	0.301*	0.300*
Ego has a child in Origin (ref. no)						1.686	1.615	1.673	1.726
Ego has a child in Other country (ref. no)						0.589	0.546	0.597	0.532
Ego has other relatives/friends in Europe (ref.no)	1.21					0.744	1.025	1.056	1.104
Remitted to Senegal (ref. no)	<b>0.22**</b>						0.299***	0.322***	0.334***
Visited Senegal (ref. no)	<b>0.28***</b>						0.121***	0.114***	0.113***
Ref. Migration for Family Reasons									
Economic reasons	0.73							0.334*	0.325*
Study reasons	<b>2.70*</b>							0.474	0.459
Other reasons	1.16							0.493	0.485
Average GDP growth rate in 2 previous years in Senegal	<b>0.87**</b>								0.933
Devaluation	2.11								1.694
N	7593	7593	7593	7593	7593	7593	7593	7593	7593
Events	97	97	97	97	97	97	97	97	97
Egos	662	662	662	662	662	662	662	662	662

Exponentiated coefficients; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.001$