Return Migrants in Western Africa: Characteristics and Labour Market Performance

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1. Introduction

While labour migration has attracted a lot of attention among researchers and resulted in a sizeable literature on the welfare implications of migration and on the uses and impact of remittances, the determinants and impacts of return migration have been comparatively under-researched. This is rather surprising since a large proportion of migrants do return home at some point in their life cycle, thus making many migrations temporary. For instance, labour migration from Southern to Central Europe in the 1950s and 1970s were predominantly temporary, as suggested by Böhning (1984) who estimates that "*more than two thirds of the foreign workers admitted in Germany and more than four fifths in the case of Switzerland have returned*" (quoted by Dustmann, 2000). Glytsos (1988) reports that of the one million Greeks who migrated to West Germany between 1960 and 1984, 85% returned home. Dustmann and Weiss (2007) find that only about 68% of female and 60% of male foreign born admitted in Britain between 1992 and 1994 were still in the country five years later. For the United States, Jasso and Rosenzweig (1982) report that over the 15.7 million individuals that immigrated between 1908 and 1957, about 4.8 million chose to re-migrate. Despite a lack of adequate data, migration from West African countries is also known to be essentially

temporary (Adepoju, 2005; Ba, 2006). This is not only true for migration within the sub-region but also for inter-regional migration and for migration from West Africa to Europe, even though tighter immigration policies in Europe have increased migration duration. As a result, significant return migration flows are recorded from Europe to West Africa. According to the surveys on Migration and Urbanization in West Africa (REMUAO, *Réseau Migrations et Urbanisation en Afrique de l'Ouest*) conducted in seven countries in 1993, 111,000 individuals aged 15 or more migrated from REMUAO countries to Europe over the 1988-1992 period while 33,000 return migrations were recorded at the same time.[2] In other terms, 22,200 individuals aged 15 or more migrated each year from REMUAO countries to Europe and 6,600 from Europe to REMUAO countries between 1988 and 1992 (Bocquier,1998).

Empirical evidence concerning the relationship between return migration and development is too fragmentary and contradictory to draw clear conclusions and formulate concrete policy measures. The developmental impact of return migration is in particular likely to vary significantly according to several critical factors including the volume of return migration, the characteristics of return migrants, the degree and direction of selectivity, the reasons for return and the situation prevailing in the home countries.

In what follows, we use recent survey data collected in the capital cities of seven West African countries to examine the impact of return migration at the individual level. Our aim is to shed light on some of the following questions: do financial capital and new skills acquired abroad, if ever, are used productively back home? Are return migrants rather "successes" or "failures"? How do they compare with non-migrants in the home country or with emigrants remaining in the countries of destination? Etc.

This paper is organised as follows. We begin by reviewing the empirical literature on the impact of return migration from sending countries' perspective (Section 2). In Section 3, we describe our data and provide descriptive statistics on the characteristics of return migrants that we compare to those of emigrants and non-migrants. In section 4, we analyze the labour market performance of return migrants either through the estimation of earnings functions or through the estimation of production functions. We then provide concluding remarks and suggest directions for future work.

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[2]These surveys were coordinated by the CERPOD (Centre d'Etudes et de Recherche sur la Population et pour le développement in collaboration with IRD (Institut de Recherche pour le Développement), CEPED (Centre d'Etudes sur la Population et le Développement) and the University of Montreal, Department of Demography. The list of REMUAO countries includes Burkina Faso, Côte d'Ivoire, Guinea, Mali, Mauritania, Niger and Senegal.

2. A Review of the Empirical Literature

While the theoretical literature has mainly focused on the motives for return, the empirical literature has mainly examined the impact of return migration from the sending country perspective. Two issues in particular have received research attention: the labour market performance of return migrants on the one hand, and the characteristics of businesses created by returnees on the other hand.

2.1. Labour Market Performance of Return Migrants

Empirical studies focusing on the labour market performance of return migrants investigate whether returnees are able to apply at home what they learned abroad through a comparison of the wages of return migrants to the wages of those who stayed in the home country (see, *e.g.*, Kiker and Traynham, 1977; Enchautegui, 1993; Co, Gang and Myesong-Su, 2000; de Coulon and Piracha, 2005; Rooth and Saarela, 2007). Contrasting results emerge from this literature. Using data collected in 1980 on a sample of male Puerto Rican migrants who returned from the United States in the 1970s, Enchautegui (1993) finds that experience abroad is neither penalized nor rewarded. The explanation provided by the author is that Puerto Rican migrants in the United States are confined to low-skilled jobs where little human capital investment takes place. By contrast, Co et al. (2000) find that foreign experience matters and that there is a wage premium for having gone abroad using panel data on a large sample of Hungarian households. However, their results also suggest that there are large differences in the returns to foreign experience across gender and among host countries in which the experience occurred. Foreign experience is found to strongly matter for women but not for men. When host countries are differentiated (OECD vs. non OECD countries), women who have been to OECD countries are found to earn a 67% premium over those who have not been abroad, while the premium is found to be insignificant for women who have been to non-OECD countries. To date, no such quantitative analysis has been conducted on African return migrants. However, a study conducted on Ghanaian female migrants argues that most of them did not learn anything new while working abroad because they only got unskilled jobs (Brydon, 1992). In practice, even among those migrants who acquired new skills and experience, few may be able to apply them back home, especially when they originated from rural areas and return to their villages after working abroad (Malian migrants, for example,

generally belong to this category). It is indeed difficult for migrants who have acquired technical or industrial skills to apply them in rural settings, where the infrastructure needed to make an effective use of new skills is lacking. In African urban areas, where access to job is much easier for individuals with dense social and/or family networks (see, *e.g.,* DIAL, 2007), return migrants might find it difficult to get a job if they failed to maintain strong social ties with their family and friends in the home country while working abroad.

Potential selection biases are one of the big methodological issues in this strand of literature. Selection biases arise when observations are selected from a population by rules other than simple random sampling. In the case of out and return migrations, there is a widely agreed position that individuals are self-selected (see, *e.g.*, Nakosteen and Zimmer, 1980; Borjas, 1987; Borjas and Bratsberg, 1996). The selective process is said to be positive if those individuals who choose to leave a country (and to return to their home country in the case of return migrants) are, say, more able and/or more motivated than those who choose to stay in their home country. By symmetry, it is said to be negative if migrants are less able and/or less motivated than non-migrants. Ignoring self-selection in the process of return migration may result in biased estimates of the wage premium related to experience abroad. This selection issue is directly addressed by de Coulon and Piracha (2005) who find evidence that return migrants are negatively self-selected compared to the non-migrants in the case of Albania. In other words, had they chosen not to migrate, the labour market performance of migrants would have been worse than that of the non-migrants. Using Hungarian data, Co et al. (2000) also address the self-selection issue through the estimation of two types of earnings equations. They first estimate an earnings equation using simple OLS in which a dummy variable captures whether an individual has foreign experience or not. They then estimate the same earnings equation using maximum likelihood estimation (MLE) techniques to control for self-selection in the migration decision. For men, the MLE coefficient on foreign experience is smaller than the OLS coefficient. This result means that part of the positive effect of going abroad on earnings in the OLS reflects the effect of self-selection into going abroad. In other words, those men who migrated would have done better (*i.e.* earned higher earnings) regardless of whether or not they had gone abroad. The reverse holds true for women which are found to be negatively selected in the migration process.

2.2. Return Migration and Small Enterprise Development

A few other empirical studies have examined the impact of return migration on the development of small businesses in the home country (see, *e.g.*, Ilahi, 1999; McCormick and Wahba, 2001; Ammassari, 2003; Black, King and Tiemoko, 2003; Wahba, 2003; Mesnard, 2004; Nicholson, 2004). There are two ways through which experience abroad might enable migrants to contribute to small business development: first, accumulated savings abroad might contribute to alleviate domestic capital market imperfections; secondly, overseas work experience might generate new skills and new ideas. In the case of Egypt, McCormick and Wahba (2001) explore the extent to which returnees to Egypt become entrepreneurs and the influence on this process of overseas savings, overseas work experience, and pre-migration formal education. Using data drawn from the 1988 Labor Force Sample Survey, which included a return migration module, they estimate a simple model of the probability that a return migrant is an entrepreneur. Their findings suggest that total savings accumulated overseas and the length of overseas employment positively and significantly affect the probability of becoming an entrepreneur among literate returnees. By contrast, longer periods overseas have no influence on the likelihood of becoming an entrepreneur among illiterate returnees. Ilahi (1999) examines similar issues for Pakistan and gives some evidence that Pakistani return migrants have invested into self-employment thanks to their savings. In the case of West Africa, a research project carried out by the Centre for Migration Research of the University of Sussex has recently explored the relationship between migration, return and development amongst both "elite" and less-skilled returnees to Ghana and Côte d'Ivoire.[3] Even though the research conducted in this framework is mostly qualitative and the small sample sizes caution about generalizations, the authors give a list of key variables influencing the propensity of returnees to invest in businesses: the skill level of migrants, the length of time they spend abroad, the work experience they gain and working conditions they experience as well as the contacts they have with friends and relatives back home.

In what follows, we mobilise recent household survey data to shed light on the impact of return international migration in seven WAEMU countries (Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Senegal and Togo). Given the data at hand, we focus on the urban labour market performance of return migrants.

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[3] This project, which ended in 2003, is entitled "Transnational Migration, Return and Development in West Africa". Interested readers can refer to the web site of the project:
http://www.sussex.ac.uk/Units/SCMR/research/transrede/

3. Data and Descriptive Statistics

3.1. Data, Definitions and Sample Size

The data is taken from an original series of urban household surveys in West Africa, the *1-2-3* Surveys conducted in seven major WAEMU cities (Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou) from 2001 to 2002.[4]

The surveys cover the economic city, *i.e.* the "administrative city" and all the small towns and villages directly attached to it and with which there are frequent exchanges. As suggested by its name, the *1-2-3* Survey is a three-phase survey. The first phase concerns individuals' socio-demographic characteristics and labour market integration. The second phase covers the informal sector and its main productive characteristics. The third phase focuses on household consumption and living conditions. The same methodology and virtually identical questionnaires were used in each city, making for totally comparable indicators. In what follows, we mobilize phase 1 and phase 2 data.

Using the sample of all individuals aged 15 years and older interviewed in first phase of the survey, our first objective is to compare the characteristics of return migrants relative to native non-migrants. Non-migrants are defined as individuals who never left the country where they were born and interviewed. Return migrants are defined as individuals who were born in the country of current residence (or who are citizens of this country), who lived abroad for some time and then came back. Three types of return migrants can actually be identified in our data: those who came back from a WAEMU country, those who came back from an OECD country and those who came back from another country. As we shall see, these different types of return migrants have somewhat different characteristics. To complete the picture, two other categories of individuals are included in the descriptive tables. The first is the category of "immigrants", *i.e.* non-native residents, defined as individuals who are not citizens of the country they currently reside in. The second is the category of "emigrants", *i.e.* each country's citizens who currently live in another WAEMU country. Given the design of the *1-2-3* survey, only those who migrated to one of the cities of our sample can actually be identified.

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[4] The surveys were carried out by the relevant countries' National Statistics Institutes (NSIs), AFRISTAT and DIAL as part of the PARSTAT Project, a Regional Statistical Assistance Programme for multilateral monitoring sponsored by the WAEMU Commission.

The total sample is made of 58,459 individuals aged 15 years and older (see Table 1). As explained above, we also report the characteristics of each country's emigrants living in a WAEMU city. The sample of return migrants has 3,594 individuals, out of which 390 came back from an OECD country and 2,162 came back from a WAEMU country. As indicated in Table 2, return migrants represent on average a relatively small share of the population of individuals aged 15 years and older living in the seven cities. The average value is 4.8% but the share actually varies significantly between cities, with values ranging from 13.3% in Lomé (Togo) to 1.9% in Dakar (Senegal). In five cities out of seven, the share of return migrants in the population is actually higher than the share of immigrants. The two exceptions are Abidjan (Côte d'Ivoire) where the share of immigrants in the population is very high (15.4%) and the share of return migrants is low (2.1%), and Niamey (Niger) where both the share of immigrants and that of return migrants are relatively small (4.3% and 3.2% respectively). The majority of return migrants are back from a WAEMU country. On average, return migrants from non-OECD countries represent almost 88% of all return migrants. In Niamey (Niger), they represent 94.7%.

Phase 2 of the *1-2-3* Survey is restricted to small informal microenterprises whose owners were surveyed during phase 1. The total sample is made of 6,619 microentreprises (see Table 3). The survey collects detailed information on production and/or sales, expenses, employees' characteristics and physical capital. It also includes some information on the founding of the enterprise, the sources of capital, etc.

3.2. Individual characteristics of return migrants, non-migrants and emigrants

Are return migrants different from non-migrants in terms of their individual characteristics? How do they compare with emigrants? These questions can be partly addressed with the *1-2-3* surveys, as they provide a sample of emigrants living in WAEMU capital cities. As we have seen in the literature review, migration theory suggests that emigrants, immigrants and return migrants are self-selected individuals who choose where to live on the basis of comparisons between the advantages of living in one place relative to another. The utility of living abroad or in the home country can depend upon observed and unobserved characteristics and, if self-selection actually occurs, one can expect emigrants to be different from non-migrants and, among emigrants, return migrants to be also different from those who stayed abroad. As we shall see, observable differences between non-migrants, return migrants and emigrants to

WAEMU capital cities are significant and informative, but the differences between return migrants from OECD countries and return migrants from non OECD countries (both WAEMU and non WAEMU) are also quite important. We first start by examining the distribution of four individual characteristics: age, gender, marital status, and education.

On average, compared to non-migrants, return migrants appear older (Table 4), with a higher share of males (Table 5), more often married than not (Table 6), and more educated (Table 7). More specifically, return migrants are five years older than non-migrants and 50.8% of them are males compared to 48.1% in the non-migrant population. When one looks at the different types of return migrants differentiated by country of origin, differences are also important: return migrants from OECD countries are on average 5 years older than return migrants from non OECD countries, and there is a much higher proportion of men in the first category (62.0% versus 49.3%). The fact that return migrants are on average older than non-migrants is not surprising, since future emigrants and future return migrants are included in the population of non-migrants. The same reason can explain that emigrants to WAEMU are on average a bit older than non-migrants, but are themselves younger than return migrants from WAEMU. Marital status tells a different story: here we observe that emigrants to WAEMU are much more likely to be married than non-migrants, but also than migrants returning from WAEMU. If age were the prime determinant of marriage status, then we would expect that, being older, return migrants from WAEMU are more likely to be married than emigrants. Caution is necessary when interpreting this last result, since return migrants from WAEMU countries do not necessarily come back from capital cities. Hence the difference observed in marital status could result from behavioural difference between emigrants and return migrants, or from the fact that part of the return migrants come back from another part of the host country.

Looking now at education (Table 7), we observe that, on average, return migrants are a bit more educated than non-migrants, but that large differences exist between the average education of return migrants from OECD countries (with more than 11 years) and from WAEMU (5.6 years) and other developing countries (5.5 years). This does not result from the demographic composition of our samples, as shown in Table 8 where the differences between the average number of years of education according to the migration status is controlled for sex, age and religion. The high average level of education of return migrants from OECD countries can have two explanations, not necessarily exclusive from each other. First, educated individuals can find more profitable to migrate to a developed country, where the returns to their human capital could be higher. Second, people can migrate to get education, in

which case it is not surprising to observe that return migrants have a higher level of education than non-migrants. Naturally, whether the first or the second explanation is the good one will have widely different implications. If educated individuals move to developed countries to benefit from high returns, then one can fear that the migration brain drain reduces the chance of these countries to develop (Bhagwati, 1972; Bhagwati and Hamada, 1974; Usher, 1977; Blomqvist, 1986; Haque and Kim, 1995), unless migrants return in a large enough proportion and with enough experience from abroad to compensate the original loss, or if the possibility to migrate increases the number of individuals who decide to educate, providing that only a smaller number of them succeed in leaving their country (Stark et al., 1997; Beine et al., 2001, 2003). The comparison between the average education levels of migrants returning from WAEMU countries and emigrants to WAEMU capitals is also striking, since return migrants are found to have twice the level of education of emigrants.[5] Once again, this result needs to be interpreted with caution: does it mean that return migrants are the most educated among the migrants to WAEMU capitals? Does it suggest that a large proportion of emigrants moved to get educated? Or does it result from the fact that our sample of emigrants is not representative of the population of migrants from which return migrants are drawn? The *1-2-3* surveys provide information on the immigrants' motives in the WAEMU capitals. On the 2,598 immigrants identified in our samples, only 4.5% indicate that education was their prime motive for migrating. About 50% of the immigrants declare that they moved to look for a job and a bit less than 39% for family reasons. Then the large difference in education levels between emigrants and return migrants in WAEMU capitals has to find another explanation. Whether this results from sampling bias or from significant behavioural differences is unfortunately impossible to tell given the data at hand.

4. The Labour Market Performance of Return Migrants in the WAEMU

4.1. Employment situation of return migrants

Given the individual characteristics of return migrants, particularly with respect to their level of education, one would expect their employment situation to be more favourable than that of non-migrants and of emigrants respectively. In the context of labour markets in developing

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[5] The only exceptions are Dakar and Abidjan where return migrants are less educated than Senegalese and Ivorian emigrants, but it should be mentioned that samples of emigrants are small for these countries.

economies, a favourable situation is that of formal wage workers in the public or private sector, by opposition to the situation of informal workers. Formal wage workers usually enjoy higher wages, more job security and more benefits than informal workers. Descriptive statistics from Tables 9 to 13 indicate that this is the case to some extent and very much so for return migrants from OECD countries.

On average, labour force participation is higher for emigrants than for return migrants and, even more so, than for non-migrants but this is not true in all cities (Table 9). Emigrants are everywhere more likely to be active than return migrants and non-migrants, the only exception being for Ivoirians, but this might result from the small size of the emigrants' sample. This result is coherent with the declaration of the emigrants themselves who mostly said that their migration was job-related. By contrast, return migrants do not systematically appear as more active than non-migrants. However, when one looks more specifically at return migrants from OECD countries, then their higher labour force participation with respect to non-migrants is found systematic and very strong in some cities. The labour force participation of return migrants from countries other than WAEMU and OECD appears also very high.

Concerning sectors of employment the difference does not appear significant on average between active non-migrants and active return migrants but is striking when one looks at those returning from OECD countries: their rate of public employment is 28.4% on average, when that of non-migrants is only 9.4% (Table 10). Among non OECD return migrants, those returning from another WAEMU country have rates of participation in the public sector that are very close to the rates of non-migrants, while those coming back from another country have much lower rates of participation in the public sector (except in Niamey).

In the private formal sector, the difference between non-migrants and return migrants does not appear to be significant in terms of rate of participation, but it appears very high when one looks at return migrants coming back from an OECD country (36.9% versus 14.5% of active non-migrants) (Table 11). Again, return migrants from other WAEMU country resemble non-migrants more than non WAEMU return migrants.

In the informal sector, the situation is different (Tables 12 and 13). We distinguish two categories of workers in this sector: "independent" and "dependent" informal workers. The first category is made of self employed workers – with or without any other employee than themselves – while the second is composed of wage workers, unpaid family members and apprentices. Given the higher rate of participation of return migrants from OECD countries in formal employment, it does not come as a surprise that their participation rate in informal

labour – either dependent or independent – is low compared to other categories. The situation is quite different for (active) return migrants from non OECD countries: 54.7% of them work as independents in the informal sector, compared to 47.8% of active non-migrants. Not surprisingly, their participation rate as "dependents" is lower than that of active non-migrants (20.4% versus 28.2%).

The more active return migrants in terms of participation to the informal sector actually appear to be those coming back from a non WAEMU and non OECD country: 66.0% of them are self-employed in the informal sector (versus 54.1% for WAEMU return migrants and 27.8% for OECD return migrants).

The high participation rate of return migrants from OECD countries in the formal sector (both public and private) can be explained by their high educational level but could also indicate that their education and/or work experience in OECD countries – if any – allowed them to gain some specific knowledge, that is valued in the formal sector such as an ability to deal with formal regulations or a knowledge of foreign regulations that could be valued in export-oriented sectors.[6]

In order to examine more thoroughly the "specific knowledge" argument, we can check whether the higher labour participation of return migrants from OECD in formal sectors holds when one controls for a number of individual characteristics. We do so by running probit regressions of participation in the formal sector (separately for public and private) on a number of individual characteristics on the pooled sample of all active individuals from the seven cities (Table 14). Results indicate that when other individual characteristics are controlled for, the probability of working in the public sector is actually *lower* for all return migrants. Thus, return migrants from OECD appear to be better able to get a job in the public sector because they have, on average, a higher level of education. When one controls for education, however, the relative advantage of return migrants vanishes and turns out as being negative. This could be the result of a relative loss of social capital that migrants incur while they live abroad. In the private formal sector, the probability of participation is marginally significantly higher for return migrants from other WAEMU countries than for non-migrants and significantly lower for return migrants from non WAEMU and non OECD countries, while it is not significant for return migrants from OECD countries, once again in contradiction with what is suggested by the descriptive statistics. These results suggest that

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[6] The small sample size of return migrants from OECD in our data unfortunately makes it difficult to convincingly present and analyse descriptive statistics at a more disaggregated level than that of Tables 8 to 13. We cannot therefore investigates the proportion of return migrants from OECD working in export-oriented sectors.

return migrants from WAEMU countries might be better able to value their education and/or work experience gained during their migration spell in the private formal sector. Why this is the case is difficult to tell. Is this because emigrants to other WAEMU countries are better able to maintain links with their origin country than other emigrants, due to a smaller distance with the host country? Or does this result from migrants' unobservable characteristics? These simple regressions, unfortunately, do not allow us to control for selection bias. More and better information on the migrants' characteristics would be necessary to provide a definite answer to this question.

Although return migrants from non OECD and non WAEMU countries have a high probability of being self employed in the informal sector (Table 12), this probability appears to be related to their individual characteristics and not with the fact that they migrated. On the contrary, return migrants from OECD countries actually have a higher probability of being business owners, even once a number of their individual characteristics have been controlled for. This could be explained either by the "specific knowledge" argument or by the fact that their migration spell allowed them to accumulate capital to start up a business.

Since return migrants from OECD countries have more favourable characteristics and positions in the labour market, it does not come as a surprise that their earnings are higher than those of non-migrants (Table 15). Whether this holds true when controlling for individual characteristics and selection biases, will be dealt with together with the "specific knowledge" argument in the remainder of the paper.

Do return migrants access their employment through the same channels as non-migrants? Statistics presented in Table 16 suggest that this not the case. Return migrants appear to rely much less on personal relations than non-migrants do (35.0% versus 42.1% for non-migrants). The difference is higher for those returning from OECD countries. Whether these differences hold when controlling for their individual characteristics (namely, higher level of education) and the type of positions they obtain (more formal sector jobs) remains to be investigated.

The data used in this study is a sample of urban residents living in seven capital cities of the WAEMU. As a result only the migrants returning from abroad to live in these cities areas are observed and our sample is likely not to be representative of the global flow of return migration to the WAEMU countries. In order to identify more precisely the nature of the biases affecting our sample, it would be useful to compare the characteristics of the return migrants we observe in the capital cities to the characteristics of migrants returning to other locations. Unfortunately that information is not available. However, at least two biases are likely. First, one can expect that migrants returning to live in capital cities will be on average

more educated and/or skilled than those returning to live in other cities or rural areas. Second, one can expect that the share of migrants returning from OECD countries will be higher in capital cities than in other locations.

To be sure, the return migrants' choice to live in the urban (capital city or other cities) or in the rural area of their country of origin is likely to be correlated with the residence they left when they chose to migrate. It is therefore informative to compare the destination of migrants originating from different locations. That information is available for Senegal (Ba, 2006). There, migrants originating from Dakar appear to be much more likely to migrate to an OECD country than other migrants: almost 75% of the migrants originating from Dakar migrated to Europe, the USA or Canada versus 55% of the migrants originating from other cities, and only 40% of the migrants originating from rural areas.

In what follows, we mobilize phases 1 and 2 of the *1-2-3* Surveys to examine the labour market performance of return migrants. Using data from phase 1, we first estimate individual earnings functions to measure the impact of return migration on earnings. We then push the analysis further by investigating whether return migrants are more productive microentrepreneurs using data on the sample of self-employed workers and small firm owners surveyed in phase 1. To our knowledge, no paper has ever estimated informal microenterprises' production functions in a Sub-Saharan African context.

4.2. Empirical Strategy

Earnings equations

The labour market performance of return migrants is first analyzed through the estimation of an individual earnings model. More specifically we consider a semi-log specification for the earnings equation:

$$Y_i = X_i \beta + RM_i \alpha + e_i \tag{1}$$

where Y is the natural-log of monthly earnings, β and α are coefficient vectors and e is the stochastic term; matrix X includes variables on personal characteristics, and RM is a dummy variable indicating whether the individual is a return migrant or not.

In order to properly estimate the impact of return migration on earnings (α), one needs to consider two selections: a working selection and a migration selection. The usual strategy to

correct for selection bias is to estimate the econometric model in two steps: the first one being the estimation of the parameters of the selection process in a probit model and the second one being the estimation of the income equation, with a correction for self-selection. However the present case is a bit more complicated, because we have to deal with a double selection process: first, incomes are only observed for individuals participating to the labour market. If we were to estimate the income equation based on positive incomes only, we would then get biased estimates if individuals self-select in the labour force based on unobserved characteristics correlated to explanatory variables of the income equation. Including the zero incomes in the regression would not solve the problem, because if labour force participation and potential incomes have common determinants any change in these can induce some people to change their labour market status, thus resulting in a discrete jump in their income (from zero to a positive value, or the opposite). For these reasons, the common practice is to estimate a tobit model, in which both labour force participation and incomes determinants are simultaneously estimated. However the return migrants' self selection process complicates the case. As we want to estimate the impact of return migration on incomes formation, we need to include a "return migrant" dummy variable in the income equation, which makes necessary to control for return migrants' self-selection.

In the present paper, we adopt the estimation strategy suggested by Co et al. (2000) in their study of the return migration of Hungarian workers. The earnings equation is completed by two equations describing the labor force participation and the probability of being a return migrant:

$$LFP_i^* = Z_i'\gamma + u_i \tag{2}$$

$$RM_i^* = Q_i'\xi + v_i \tag{3}$$

where LFP^* and RM^* are latent unobservable variables measuring the propensity to participate in the labour force and to be a return migrant, respectively. The Z_i and Q_i vectors both include X_i together with instrumental variables specific to each equation. Assuming the stochastic vector $(e_i, u_i, v_i)'$ is normally distributed, the model is estimated by maximum likelihood (MLE) using Gauss. MLE allows to control for the possible correlation of the participation and migration decisions with earnings and with each other. MLE is also more tractable than the extension to the double selection case of the traditional Heckman two-step method, which can become very cumberome unless one assumes that the two selection processes are independent (see Co et al., 2000, for discussion and details).

The proper identification of the full structural model requires valid instruments for the two selection models. The return migration equation is instrumented by the proportion of return migrants in the neighborhood, excluding the worker's household in the computation. Labor force participation is instrumented using father's characteristics when the worker was 15 and religion dummies as instrumental variables. In order to assess the magnitude and size of the biases resulting from the two selection processes, we also report estimates of the earnings equation using OLS.

Production functions

Microenterprise production functions are estimated using data from phase 2.

The production technology of a microenterprise is written as:

$$Y = F(K, QL) \tag{4}$$

where Y is the value added of the firm, K is the capital stock and QL is an aggregate function of different types of labour.

There are two difficulties with estimating consistent production functions, one of them being the correct measurement of inputs. In what follows, we use information provided by firm owners on the replacement cost of the capital equipment used in their business (tools, equipment, vehicles, real estate, and so on) to get a reliable estimate of K. As for labour, following Griliches (1970) and later Hellerstein and Neumark (1995, 1999 and 2004), we adjust labour input in order to account for differences in educational attainment across workers. We distinguish workers based on whether they attended school or not, and among those workers who attended school, whether they at least achieved the primary cycle or not. The aggregate function of labour QL is defined as:

$$QL = \sum_{k=0}^{K} \lambda_k L_k = \lambda_0 L + \sum_{k=1}^{K} (\lambda_k - \lambda_0) L_k, \tag{5}$$

where L is the total number of workers in the firm, and λ_0, the productivity of the reference category of workers (i.e. workers who never attended school).

Assuming a Cobb-Douglas production function, the technology of a microenterprise may thus be written as:

$$\log Y = \alpha \log \lambda_0 + \alpha \log L + \alpha \log\left(1 + \sum_{k=1}^{K}(\frac{\lambda_k}{\lambda_0} - 1)\frac{L_k}{L}\right) + \beta \log K + u \qquad (6)$$

where α and β are output elasticities with respect to labour and capital, respectively and u is an error term. This equation can be estimated with standard linear regression using microenterprise data on value-added, capital and the number of workers in each category. In the regression results that follow, dummy variables indicating whether the firm owner is a return migrant or not are included among the regressors to test whether experience abroad makes individuals more productive.

In order to account for the self-selection of return migrants, we simultaneously estimate equation (6) with the return migrant equation (3) by maximum likelihood on the sample of micro enterprises. As for the earnings equation, estimates using OLS are also reported.

4.3. Estimation Results

Earnings equations are presented in Tables 17a and 17b. In table 17a we present the results on the pooled sample, while table 17b present those obtained in a selection of countries. Columns 1 and 2 of Table 17a show parameters of the earnings equation estimated using OLS and MLE, while columns 3 and 4 show coefficients for the labour market participation and migration choice equation respectively. We only consider the specification in which a single dummy variable captures whether an individual has foreign experience or not.

Overall, both OLS and MLE coefficients of human capital variables in the earnings equations are in line with expectations: language skills, education and experience are all found to positively contribute to earnings. Regarding the other coefficient estimates, men are found to earn more than women, and individuals working in the public sector or in the private formal sector are found to earn significantly more (respectively +61% and +52%) than those individuals working in the informal sector. However, contrasted results emerge with regards to the impact of experience abroad. While OLS estimates suggest that experience abroad does not translate into higher earnings, results using MLE provide evidence of a wage premium of 62% for return migrants. This discrepancy can be explained by the negative correlation between unobserved characteristics in the earnings and migration equations (-0.168, significant at the 1% level). In other words, OLS estimates fail to capture the fact that individuals who have been abroad lack some desirable unobserved earnings capabilities.

However, by going abroad, they acquire other characteristics (network, knowledge, skills, etc.) which the labour market rewards in the form of higher earnings. A similar result is found by Co et al. (2000) using data on Hungarian return migrants. Turning to the other correlation terms, we find that unobserved heterogeneity in the participation equation is not correlated to that of the earnings equation ($corr(e_i, u_i) = 0.052$ and insignificant).

Looking now at the migration equation we find that the presence of a migration network proxied by the percentage of households with return migrants in the area of residence is positively correlated with the likelihood of going abroad. Obviously this is the sign that return migrants are not randomly located. Of course, it could be argued that the relative concentration of return migrants in specific neighbourhoods is likely to be correlated with the presence of a social network favourable to economic activity and higher earnings. If this were true, this could invalidate our instrumentation procedure. In order to control for this, we re-run the earnings equation after adding the average earnings in the neighbourhood (excluding earnings of the individual's household) within the set of regressors. Neither the value of the return migrant dummy coefficient nor its standard error were significantly affected. Other results show that increased years of schooling and ability to speak a foreign language significantly increase the probability of going abroad. By contrast, males are not more likely to migrate than females, as suggested by the non-significance of the sex variable. Last, results of the participation equation suggest that being a male strongly increase the likelihood of participating to the labour market. Family background as measured by father's occupation at subject age of 15 and education dummies are also strong predictors of participation. The impact of education is non-linear, though.

We pushed the analysis further and tried to estimate the wage premium for having gone abroad for each capital city in our sample. Unfortunately, the proportion of return migrants being very small in Abidjan, Dakar and Niamey, our maximum likelihood estimator could not converge using these three samples separately. It could not converge for Ouagadougou either. Coefficient estimates for the foreign experience variable using data on Cotonou, Bamako and Lome are presented in Table 17b. The wage premium is found to be quite high in Cotonou and Lome. In Bamako, however, the difference in earnings between individuals who have been abroad and individuals who have not been abroad is not statistically significant. In this latter case, two opposite effects may be at work: on the one hand, going abroad can provide the migrant with an opportunity to acquire specific skills that will result in a wage premium after re-migration in the home country. On the other hand, having gone abroad may cause

lower wages because migrants have lost their networks of social relationships when returning home.

We now turn to discussing the results of the production function. Table 18 displays estimation results using a Cobb-Douglas production function specification as defined in equation (6) on pooled microenterprise data. The dependent variable is annual value-added defined as the value of production minus the cost of all intermediate inputs including water, electricity, rents, etc. As for the earnings equations, one obvious issue is that individuals who have gone abroad might have unmeasured characteristics which differ from non-migrant individuals. They might be for example on average more entrepreneurial than non-migrants. We address this issue by using a maximum-likelihood procedure to account for the possible correlation of migration decision with production levels, in which migration is instrumented by the percentage of households with return migrants in the area of residence. We also report coefficient estimates using OLS. Coefficient of the dummy variable indicating whether the firm owner is a return migrant or not is positive and significantly different from 0 in both specifications. This result suggests that experience abroad gives a productive advantage to microentrepreneurs. This advantage could stem either from enhanced entrepreneurial skills or from specific knowledge acquired during migration stay. As for the earnings equation, however, the OLS coefficient estimate is strongly downwardly biased because of a negative correlation between unobserved characteristics in the earnings and migration equations. Turning to the other estimates, the elasticity of value-added with respect to capital and labour is 0.17 and 0.47 respectively. The higher the average level of education of employees, the higher the output *all else equal.*

5. Conclusion

What are the consequences of international migration on home countries? This question has attracted much interest in the seventies, when economists, such as Jadish Bhagwati, viewed the out-migration of educated migrants as a loss of human capital for the countries of origin. However the quantitative importance of return migration raises the possibility that even the migration of educated individuals could benefit to the origin country if return migrants are sufficiently numerous and if they bring back enough capital, either physical or human, to irrigate the economy. In this context, the characteristics, motivations and economic impacts of return migrants on their native countries are crucial questions to address.

In this paper, we used a set of urban labour force and microenterprise surveys conducted in the capital cities of seven WAEMU countries to examine the urban labour market performance of return migrants in Western African French speaking countries. From our review of the literature, three effects are expected: first, return migrants may benefit from higher levels of human and/or financial capital; second, their education and/or work experience in destination countries could have allowed them to gain some specific knowledge that is valued in the labour market of their home country; third, on the contrary, return migrants could suffer from a relative loss of social capital incurred while they lived abroad. Results from our statistical and econometric analyses show that:

- Apart from age and gender, return migrants from WAEMU countries have individual and labour participation characteristics that are very similar to those of non-migrants;

- On the other hand, return migrants from OECD countries are significantly better educated, more active and wealthier than non-migrants;

- The participation of return migrants from OECD countries in the formal sector, both public and private, is much higher than that of non-migrants; however, when one controls for education, the relative advantage of return migrants vanishes and turns out as being negative;

- In terms of earnings, our findings suggest that experience abroad results in a substantial wage premium on average, but that the level of the premium varies between countries: it is high in Cotonou and Lome whereas it is low in Bamako;

- Last, using data on a sample of self-employed and firm owners, experience abroad is found to be associated with a productive advantage using pooled data.

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Table 1: Sample size

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	6,623	409	84	193	686	330	7,639	266
Ouagadougou	7,653	752	21	56	829	64	8,546	518
Abidjan	6,083	84	44	36	164	1,265	7,512	41
Bamako	6,878	325	127	77	529	122	7,529	421
Niamey	7,675	161	14	98	273	369	8,317	210
Dakar	12,091	79	45	120	244	163	12,498	93
Lomé	5,264	352	55	462	869	285	6,418	270
Total	**52,267**	**2,162**	**390**	**1,042**	**3,594**	**2,598**	**58,459**	**1,819**

Source: *1-2-3* surveys, Phase 1.
Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the WAEMU cities of the PARSTAT sample.

Table 2: Population structure (%)

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	89.0	4.7	0.6	2.3	7.5	3.5	100.0	n.a.
Ouagadougou	89.4	9.1	0.3	0.6	9.9	0.7	100.0	n.a.
Abidjan	82.5	1.1	0.6	0.4	2.1	15.4	100.0	n.a.
Bamako	91.9	4.3	1.5	0.9	6.7	1.4	100.0	n.a.
Niamey	92.5	1.9	0.2	1.2	3.2	4.3	100.0	n.a.
Dakar	96.8	0.7	0.3	0.9	1.9	1.3	100.0	n.a.
Lomé	82.4	5.4	0.8	7.1	13.3	4.3	100.0	n.a.
Total	**88.5**	**2.8**	**0.6**	**1.4**	**4.8**	**6.7**	**100.0**	n.a.

Source: *1-2-3* surveys, Phase 1.
Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities; "n.a." stands for "not applicable".

Table 3: Sample sizes, Phase 2 of the *1-2-3* Surveys

	Cotonou (Benin)	Ouagadougou (Burkina Faso)	Abidjan (Cote d'Ivoire)	Bamako (Mali)	Niamey (Niger)	Dakar (Senegal)	Lome (Togo)	All
Nb. of surveyed microentereprises	938	979	998	986	749	1,011	958	6,619

Table 4: Individual characteristics - Age

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	31.3	36.1	42.9	37.6	37.0	30.2	31.7	32.9
Ouagadougou	31.4	32.3	45.7	35.6	32.8	32.4	31.5	35.6
Abidjan	29.4	32.3	39.7	32.1	34.3	34.6	30.3	29.4
Bamako	32.0	36.3	36.1	36.7	36.3	31.9	32.2	35.9
Niamey	31.6	37.6	38.7	39.5	38.4	34.6	32.0	31.9
Dakar	32.4	42.7	45.5	37.8	40.9	33.0	32.5	37.8
Lomé	30.7	35.6	42.9	35.6	36.0	31.9	31.4	30.9
Total	**31.0**	**34.8**	**40.3**	**36.1**	**35.9**	**34.1**	**31.4**	**34.1**

Source: *1-2-3* surveys, Phase 1.
Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities.

Table 5: Individual characteristics – Gender (% of men)

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	47.7	46.1	59.4	49.7	48.1	48.7	47.8	44.4
Ouagadougou	50.3	54.4	75.9	40.0	54.0	53.9	50.7	58.5
Abidjan	47.7	63.7	59.8	45.4	59.0	60.4	49.9	51.2
Bamako	49.7	44.3	61.5	42.6	48.0	48.7	49.5	58.0
Niamey	48.5	52.8	76.5	64.8	58.5	47.7	48.8	69.0
Dakar	47.2	37.8	65.0	54.4	50.4	55.0	47.4	68.8
Lomé	47.7	45.2	60.9	44.0	45.5	56.1	47.8	39.3
Total	**48.1**	**50.3**	**62.0**	**47.3**	**50.8**	**58.6**	**49.0**	**55.0**

Source: *1-2-3* surveys, Phase 1.
Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities.

Table 6: Individual characteristics – Status (% of married)

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	48.9	56.4	71.1	60.8	58.8	54.9	49.9	60.5
Ouagadougou	48.5	50.4	93.4	59.8	52.1	59.8	49.0	67.4
Abidjan	33.0	50.1	47.0	50.5	49.4	62.3	37.9	51.2
Bamako	54.8	63.1	65.9	62.3	63.6	58.7	55.5	73.4
Niamey	50.9	63.9	60.7	60.1	62.3	72.3	52.2	59.5
Dakar	42.2	60.5	55.6	57.0	58.0	71.8	42.9	51.6
Lomé	44.5	50.4	74.3	52.2	52.8	56.6	46.1	51.9
Total	**42.7**	**54.4**	**60.9**	**55.4**	**55.5**	**62.4**	**44.6**	**63.4**

Source: *1-2-3* surveys, Phase 1.
Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities.

Table 7: Individual characteristics – Years of education

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	6.4	6.9	13.5	6.3	7.2	5.4	6.4	5.2
Ouagadougou	4.8	5.2	16.8	4.0	5.4	6.3	4.9	1.8
Abidjan	6.3	6.2	13.5	6.3	8.2	2.6	5.8	6.8
Bamako	4.6	4.0	6.4	3.6	4.5	5.5	4.6	1.1
Niamey	4.8	5.8	16.1	6.0	6.4	2.9	4.8	2.6
Dakar	5.0	4.1	10.3	3.8	5.1	4.3	5.0	4.1
Lomé	6.5	7.0	12.1	5.9	6.7	5.4	6.4	4.2
Total	**5.6**	**5.6**	**11.1**	**5.5**	**6.3**	**3.0**	**5.5**	**2.8**

Source: *1-2-3* surveys, Phase 1.
Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities.

Table 8: Individual characteristics – OLS regressions of years of education on individual characteristics

	Cotonou (Benin)	Ouagadougou (Burkina)	Abidjan (Cote d'Ivoire)	Bamako (Mali)	Niamey (Niger)	Dakar (Senegal)	Lomé (Togo)
Gender and age							
Male	3.104	1.779	2.669	2.236	1.604	1.744	3.192
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Age	0.147	-0.041	0.205	0.049	0.044	0.117	0.118
	(0.000)***	(0.005)***	(0.000)***	(0.004)***	(0.004)***	(0.000)***	(0.000)***
Age squared	-0.002	-0.001	-0.003	-0.001	-0.001	-0.002	-0.002
	(0.000)***	(0.001)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Religion [ref. is Muslim]							
Catholic	1.518	2.462	3.854	2.722	2.966	2.301	2.650
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Protestant	1.342	2.921	3.710	1.256	3.594	3.104	3.001
	(0.000)***	(0.000)***	(0.000)***	(0.112)	(0.000)***	(0.046)**	(0.000)***
Other religion	-0.685	1.662	2.427	-1.873	2.524	2.306	0.943
	(0.001)***	(0.000)***	(0.000)***	(0.027)**	(0.008)***	(0.138)	(0.000)***
Migration status [ref. is « Non migrant »]							
WAEMU return migrant	1.071	0.604	-0.119	-0.097	1.001	0.158	0.765
	(0.000)***	(0.000)***	(0.804)	(0.729)	(0.009)***	(0.764)	(0.000)***
OECD return migrant	7.612	12.021	6.119	2.688	11.228	6.617	5.502
	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Other return migrant	0.432	0.199	0.130	-0.216	1.621	-0.981	-0.174
	(0.192)	(0.739)	(0.858)	(0.702)	(0.001)***	(0.024)**	(0.368)
Immigrant	-0.510	0.473	-3.073	-0.253	-2.609	-0.929	-0.501
	(0.050)**	(0.399)	(0.000)***	(0.579)	(0.000)***	(0.012)**	(0.042)**
Constant	1.834	4.917	-0.285	3.466	4.451	2.982	1.786
	(0.000)***	(0.000)***	(0.379)	(0.000)***	(0.000)***	(0.000)***	(0.000)***
Observations	7,637	8,524	7,507	7,501	8,265	12,214	6,410
R-squared	0.176	0.179	0.277	0.076	0.098	0.085	0.231

Source: *1-2-3* surveys, Phase 1.

Notes: p values in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 9: Employment situation - Labour force participation (%)

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	64.5	63.2	69.7	67.2	64.9	68.1	64.7	75.9
Ouagadougou	56.5	52.8	65.5	65.5	53.9	65.6	56.3	74.9
Abidjan	59.9	68.6	79.9	71.0	72.2	76.6	62.7	48.8
Bamako	55.3	53.4	50.8	48.1	52.1	56.2	55.1	68.9
Niamey	46.9	58.0	57.6	68.6	61.9	67.4	48.2	71.4
Dakar	50.7	55.1	53.1	67.2	60.3	61.2	51.0	75.3
Lomé	69.6	67.5	58.1	71.8	69.2	74.2	69.7	78.1
Total	**57.2**	**59.3**	**63.8**	**68.2**	**62.5**	**74.5**	**58.6**	**73.2**

Source: *1-2-3* surveys, Phase 1.
Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities.

Table 10: Employment situation - Share of active population working in the public sector (%)

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	9.3	4.7	44.5	4.6	7.6	0.3	8.8	1.1
Ouagadougou	13.2	12.9	50.1	4.4	13.3	4.0	13.2	0.4
Abidjan	8.0	8.3	31.9	0.0	13.1	1.0	6.8	2.4
Bamako	10.5	9.0	17.0	3.7	10.1	2.8	10.4	1.2
Niamey	17.0	16.2	50.9	17.1	18.4	1.1	16.1	0.0
Dakar	8.0	6.2	15.1	3.5	6.8	3.1	7.9	2.2
Lomé	8.1	6.8	26.5	5.4	7.3	2.3	7.7	0.4
Total	**9.4**	**9.0**	**28.4**	**5.0**	**10.2**	**1.2**	**8.7**	**0.8**

Source: *1-2-3* surveys, Phase 1.
Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities.

Table 11: Employment situation - Share of active population working in the private formal sector (%)

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	10.1	16.5	30.7	5.9	14.3	10.4	10.5	9.4
Ouagadougou	7.6	11.2	36.2	0.0	11.2	11.7	8.0	12.0
Abidjan	20.6	20.6	47.6	10.1	25.9	13.1	19.4	9.8
Bamako	10.3	8.5	24.5	13.2	12.7	10.8	10.5	5.0
Niamey	12.0	18.0	30.2	15.7	17.8	10.2	12.1	8.1
Dakar	15.8	13.5	39.1	14.4	18.1	19.3	15.9	20.4
Lomé	7.9	9.9	26.8	8.2	10.1	10.0	8.3	8.9
Total	**14.5**	**13.2**	**36.9**	**9.3**	**15.0**	**12.9**	**14.4**	**9.5**

Source: *1-2-3* surveys, Phase 1.
Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities.

Table 12: Employment situation - Share of active population working as independents in the informal sector (%)

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	57.0	59.3	24.8	71.7	60.6	61.5	57.4	47.4
Ouagadougou	49.3	48.1	0.0	67.2	48.0	57.6	49.2	36.9
Abidjan	40.7	32.1	14.8	61.6	33.3	61.7	44.4	26.8
Bamako	60.4	66.0	51.1	70.7	63.3	71.5	60.7	52.3
Niamey	46.0	48.0	11.9	48.1	46.1	64.9	47.1	52.4
Dakar	43.6	67.1	32.1	55.1	55.5	50.9	44.0	46.2
Lomé	57.5	64.9	39.5	69.9	65.9	70.7	59.3	46.3
Total	**47.8**	**54.1**	**27.8**	**66.0**	**54.3**	**62.1**	**49.4**	**45.4**

Source: *1-2-3* surveys, Phase 1.

Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities.

Table 13: Employment situation - % of occupied individuals working as dependents in the informal sector

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	23.6	19.5	0.0	17.9	17.6	27.8	23.3	18.0
Ouagadougou	29.9	27.9	13.8	28.4	27.6	26.8	29.6	25.7
Abidjan	30.7	39.0	5.7	28.3	27.7	24.2	29.4	9.8
Bamako	18.8	16.5	7.3	12.5	13.8	14.9	18.4	10.5
Niamey	25.1	17.7	7.0	19.1	17.7	23.9	24.7	11.0
Dakar	32.6	13.2	13.7	26.9	19.6	26.7	32.2	6.5
Lomé	26.5	18.5	7.2	16.5	16.7	17.0	24.7	22.6
Total	**28.2**	**23.7**	**6.9**	**19.8**	**20.5**	**23.9**	**27.5**	**17.5**

Source: *1-2-3* surveys, Phase 1.

Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities.

Table 14: Probit regressions of participation in the various sectors (marginal effects at mean values)

	Public sector	Private formal sector	Business owner
Gender, education and experience			
Male	0.015	0.087	0.030
	(0.000)***	(0.000)***	(0.000)***
Years of education	0.014	0.013	0.001
	(0.000)***	(0.000)***	(0.000)***
Potential experience	0.007	0.005	0.003
	(0.000)***	(0.000)***	(0.000)***
Potential experience squared	-0.000	-0.000	-0.000
	(0.000)***	(0.000)***	(0.000)***
Migration status [ref. is "Non migrant"]			
WAEMU return migrant	-0.023	0.014	-0.000
	(0.000)***	(0.103)	(0.949)
OECD return migrant	-0.027	0.015	0.056
	(0.000)***	(0.351)	(0.000)***
Other return migrant	-0.028	-0.023	0.007
	(0.000)***	(0.041)**	(0.315)
Immigrant	-0.042	-0.011	0.009
	(0.000)***	(0.111)	(0.049)**
Father education [ref. is none]			
1 to 5 years	-0.003	0.009	0.003
	(0.308)	(0.083)*	(0.397)
6 to 9 years	0.002	0.023	0.008
	(0.667)	(0.000)***	(0.054)*
10 to 13 years	0.003	0.057	0.010
	(0.488)	(0.000)***	(0.040)**
14 to 25 years	-0.001	0.103	0.019
	(0.918)	(0.000)***	(0.010)**
Undeclared	0.001	0.021	0.012
	(0.885)	(0.001)***	(0.009)***
City dummies	*included but not shown*		
Observations	**33,242**	**33,242**	**33,242**

Source: *1-2-3* surveys, Phase 1.
Notes: p values in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%.

Table 15: Employment situation - Individual earning of active individuals (in 1000 FCFA PPP)

	Non-migrants	Return migrants				Immigrants	Total	Emigrants
		WAEMU	OECD	Other	All			
Cotonou	40.3	50.9	197.0	73.4	68.4	38.6	42.4	51.0
Ouagadougou	42.7	44.2	312.5	36.2	50.5	43.5	43.6	43.9
Abidjan	71.6	87.3	311.4	48.7	140.9	58.4	71.0	110.8
Bamako	55.9	49.5	117.9	40.3	63.9	63.3	56.5	46.7
Niamey	50.9	79.0	183.0	79.4	84.7	40.1	51.6	49.4
Dakar	58.6	53.3	187.5	60.4	81.5	90.1	59.5	93.4
Lomé	27.5	45.0	172.6	30.4	45.3	52.7	30.8	35.0
Total	**55.9**	**54.7**	**227.1**	**46.0**	**73.4**	**57.6**	**56.9**	**48.4**

Source: *1-2-3* surveys, Phase 1.
Note: Individuals aged 15 years and older; "Emigrants" are nationals who are currently living in one of the sample cities.

Table 16: Employment situation - Access to current employment

	Non-migrants	Return migrants				Immigrants	Total
		WAEMU	OECD	Other	All		
Personal relations	42.1	36.2	22.8	37.9	35.0	38.7	41.4
Directly through employer	9.9	9.9	19.0	7.3	10.3	7.2	9.7
NEA or Announcements	1.3	1.6	6.2	1.4	2.1	0.5	1.3
«Concours»	13.5	7.9	16.8	7.5	8.9	2.9	12.3
Personal initiative	31.4	42.3	27.9	44.5	41.2	49.7	33.5
Other	1.9	2.1	7.4	1.5	2.6	1.0	1.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: *1-2-3* surveys, Phase 1.
Note: Occupied individuals aged 15 years and older.

Table 17a: Maximum likelihood estimation (MLE) of the effects of migration on earnings (pooled sample)

	OLS Coef.			Earnings equation Coef.			Participation equation Coef.			Migration equation Coef.		
Sex (1: Male)	0.228	(11.81)	***	0.255	(6.012)	***	0.527	(43.250)	***	-0.014	(-0.706)	
Francophone	0.218	(8.73)	***	0.216	(9.396)	***	0.046	(2.750)	***	0.008	(0.293)	
Foreign language	0.229	(8.12)	***	0.206	(6.481)	***	-0.125	(-6.971)	***	0.203	(7.870)	***
Diploma = CEP	0.531	(18.35)	***	0.520	(17.223)	***	-0.200	(-10.827)	***	0.052	(1.751)	**
Diploma = BEPC	1.156	(28.18)	***	1.138	(23.066)	***	-0.304	(-12.071)	***	0.085	(2.247)	**
Diploma = CAP	1.111	(15.06)	***	1.104	(11.450)	***	-0.103	(-2.195)	**	0.034	(0.461)	
Diploma = Brevet technique	1.313	(16.72)	***	1.316	(13.449)	***	0.145	(2.816)	***	0.076	(0.926)	
Diploma = BAC	1.626	(24.66)	***	1.603	(20.157)	***	-0.304	(-7.760)	***	0.148	(2.538)	***
Diploma = DEUG/DUT/BTS	2.073	(25.02)	***	2.066	(19.644)	***	0.038	(0.745)		0.165	(2.136)	**
Diploma = BAC+2	2.258	(40.53)	***	2.224	(30.563)	***	0.186	(5.197)	***	0.546	(11.585)	***
Diploma = Other	1.892	(23.13)	***	1.874	(16.950)	***	0.142	(2.585)	***	0.385	(5.258)	***
Experience	15.248	(67.44)	***	15.673	(20.414)	***	9.569	(87.433)	***	1.979	(11.012)	***
Experience²	-16.947	(-45.58)	***	-17.732	(-14.261)	***	-15.071	(-96.322)	***	-1.372	(-5.071)	***
Public sector	0.609	(16.74)	***	0.611	(10.858)	***						
Private sector	0.516	(17.17)	***	0.515	(16.334)	***						
Return migrant	**0.072**	**(1.20)**		**0.624**	**(3.081)**	***						
Return migrant x Male	-0.010	(-0.13)		-0.001	(-0.016)							
Return migrant x Holds a diploma	-0.014	(-0.18)		-0.048	(-0.593)							
Return migrant x Public sector	-0.102	(-0.81)		-0.130	(-0.653)							
Return migrant x Private sector	0.032	(0.28)		0.025	(0.204)							
Father in agriculture							0.119	(7.929)	***	-0.100	(-4.262)	***
Father in industry							0.126	(4.924)	***	0.132	(3.286)	***
Father in commerce							0.072	(3.889)	***	0.113	(4.008)	***
Father top-executive							0.037	(1.126)		0.054	(1.187)	
Father middle-executive							0.019	(0.828)		-0.093	(-2.639)	***
Father uneducated							0.154	(11.137)	***	-0.073	(-3.365)	***
Muslim							-0.080	(-3.462)	***	-0.007	(-0.208)	
Catholic							-0.064	(-3.063)	***	-0.085	(-2.989)	***
Proportion of return migrants in neighbourhood										2.257	(16.772)	***
Intercept	1.474	(35.42)	***	1.327	(9.157)	***	-0.628	(-21.323)	***	-1.852	(-38.500)	***
σ_e				1.581	(204.013)	***						
$\rho_{u,e}$				0.052	(0.701)							
$\rho_{v,e}$				-0.168	(-2.776)	***						
$\rho_{u,v}$				-0.102	(-3.827)	***						
Nb. of observations	31,234			55,767								

z-stats in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%
The set of regressors in all equations includes country dummies.

Table 17b: Effects of return migration on earnings for individual countries (dummy variable coefficients)

	Cotonou (Benin)		Bamako (Mali)		Lome (Togo)	
OLS	0.286	(2.080)**	-0.014	(-0.110)	0.206	(1.840)*
MLE	1.117	(3.063)***	0.244	(0.386)	0.876	(2.576)***
Nb. of observations	7,390		7,302		6,109	

z-stats in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 18: Microenterprises' Production Function

	OLS			MLE		
Production Function						
Log(capital stock + 1)	0.168	13.63	***	0.169	13.68	***
Dummy = 1 if no capital	0.267	3.99	***	0.264	3.93	***
Log(Total number of hours worked)	0.471	20.59	***	0.468	20.42	***
Share of medium-educated labour in number of hours worked	0.076	1.67	*	0.076	1.66	*
Share of highly-educated labour in number of hours worked	0.299	5.72	***	0.286	5.44	***
Share of female labour in number of hours worked	-0.525	-11.82	***	-0.529	-11.84	***
Firm owner is a return migrant	**0.149**	**2.15**	**	**0.532**	**3.17**	***
Intercept	2.472	16.76	***	1.967	12.92	***
Migration Equation						
Sex (1: Male)				0.113	2.12	**
Francophone				-0.187	-2.2	**
Foreign language				0.217	2.79	***
Diploma = CEP				0.116	1.38	
Diploma = BEPC				0.334	3.13	***
Diploma = CAP				0.489	3.52	***
Diploma = Brevet technique				0.330	1.46	
Diploma = BAC				0.676	2.35	**
Diploma = DEUG/DUT/BTS				0.732	3.1	***
Diploma = BAC+2				1.173	3.86	***
Diploma = Other				0.955	4.52	***
Experience				2.034	2.65	***
Experience²				-1.688	-1.51	
Proportion of return migrants in neighborhood				2.790	8.51	***
Intercept				-2.641	-14.27	***
/athrho				-0.146	-2.50	**
/lnsigma				0.328	35.18	***
rho				-0.145		
sigma				1.388		
lambda				-0.201		
Number of observations	6,196			6,099		

z-stats in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%
Dependent variable is Log(value-added+1). Additional control variables in production function include industries (8) and country dummies (6). Country dummies are included in migration equation as well.