

# **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 impact 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.<sup>1</sup> 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 skills acquired abroad, if any, 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 both through the estimation of earnings functions and through the estimation of production functions. We then provide concluding remarks and suggest directions for future work.

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## 2 A Review of the Empirical Literature

While the theoretical literature on return migration 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 with 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 our knowledge, 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 when 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 migration, 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 (*op.cit.*) also address the self-selection issue through the estimation of two types of earnings equation. 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.<sup>2</sup> 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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<sup>2</sup> 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 *I-2-3* Surveys conducted in seven major WAEMU cities (Abidjan, Bamako, Cotonou, Dakar, Lomé, Niamey and Ouagadougou) from 2001 to 2002.<sup>3</sup>

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 *I-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 mobilise both data from phase 1 and phase 2 of the surveys.

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 *I-2-3* survey, only those who migrated to one of the cities of our sample can actually be identified.

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<sup>3</sup> 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 *I-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 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 *I-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 emigrate to a developed country, were 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 they have a higher level of education when they come back, 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.<sup>4</sup> 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 come? 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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<sup>4</sup> 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.<sup>5</sup>

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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<sup>5</sup> 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 investigate 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 of our sample 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 choice to live in the urban (capital city or other cities) or in the rural area of migrants returning to 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 mobilise 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 2.

## 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:

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

where  $Y$  is the natural-log of monthly earnings,  $\beta$  and  $\alpha$  are coefficient vectors and  $e$  is the stochastic term; matrix  $X$  includes variables on personal characteristics, and  $D$  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 ( $\alpha$ ), 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 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 hold account of return migrants' self selection.

The proper identification of the full structural model requires valid instruments for the two selection models. However, we were not able so far to come up with convincing instruments for the migration selection model. Thus only the working selection is taken care of in the estimation results we present.

### *Production functions*

Microenterprise production functions are estimated using data from phase 2.

The production technology of a microenterprise is written as:

$$Y = F(K, QL) \tag{2}$$

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

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, we follow Hellerstein and Neumark (2003) and adjust the 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:

$$QL = \sum_{k=0}^K \lambda_k L_k = \lambda_0 L + \sum_{k=1}^K (\lambda_k - \lambda_0) L_k, \quad (3)$$

where  $L$  is the total number of workers in the firm, and  $\lambda_0$ , 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:

$$\log Y = \alpha \log \lambda_0 + \alpha \log L + \alpha \log \left( 1 + \sum_{k=1}^K \left( \frac{\lambda_k}{\lambda_0} - 1 \right) \frac{L_k}{L} \right) + \beta \log K + u \quad (4)$$

where  $\alpha$  and  $\beta$  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.

#### 4.3 Estimation Results

Earnings equations are presented in Table 17. We only consider the specification in which a single dummy variable captures whether an individual has foreign experience or not. The results indicate that the difference in earnings between those individuals who have been abroad and those who have not been abroad is not statistically significant in five countries out of seven. In other terms, return migrants are found to perform on the labour market neither

better nor worse than non-migrants. Even though some robustness tests are needed to either confirm or reject these preliminary results, they bring support to the idea that going abroad can have two opposite effects. On the one hand, it 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. These two opposite effects may have cancelled each other in the case of our samples. In Benin and Togo, however, individuals who have been abroad respectively earn 28% and 21% more than those who have not been abroad, suggesting that the positive effect dominates the negative effect. Interacted terms provide interesting results in the case of Burkina Faso and Niger. In Burkina Faso, the results suggest that going abroad has no effect on earnings on average, but has a significantly negative effect for men.

Regarding the other coefficient estimates, men are found earn more than women in all capital cities except Senegal. Not surprisingly, individuals working in the public sector or in the private formal sector are found to earn significantly more than those individuals working in the informal sector. For individuals working in the public sector, the wage premium ranges from 26% (in Cotonou) to 86% (in Dakar). For those working in the private formal sector, it ranges from 29% (in Lome) to 84% (in Dakar).

We now turn to discussing the results of the production functions. Table 18 displays estimation results by country using a Cobb-Douglas production function specification as defined in equation (4). 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. Looking first at the return to capital estimates, our results show that these vary from 9.1% in Lome to 24.1% in Ouagadougou. As for labour, return estimates are found to vary between 38.9% in Cotonou and 61.7% in Bamako. Coefficients of the dummy variables indicating whether the firm owner is a return migrant or not are positive and significantly different from 0 in Cotonou, Abidjan, Dakar and Lome. There are however marked differences depending on the last country of residence: by contrast to microentrepreneurs returning from a WAEMU country, those returning from an OECD country appear much more productive on average in Abidjan, Dakar and, to a lesser extent, Lome. These results suggest that at least in these cities, 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 discussed before, however, any causal relationship between migration

status and productivity is risky to ascertain, for migration status may be endogenously determined in this type of model. Due to small sample sizes and a lack of proper instruments, we are unfortunately unable to deal with this endogeneity issue.

To check the robustness of our results, we re-estimate a production function on pooled data. Next to dummy variables capturing the migration status of the firm owner, we introduce three additional dummy variables indicating the presence of a return migrant in the household of the firm owner (columns 2 and 3). These three variables are less likely to be endogenous. Regression results are reported in Table 19. They show that the productive advantage of return migrants remains, especially for those microentrepreneurs returning from an OECD country. The results also suggest that the presence of a migrant returning from a non-OECD non-WAEMU country can provide a comparative advantage to the microenterprises. The small size of the samples we are working on makes it difficult to explain this puzzling result.

## **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. Our results 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 results show that the labour market performance of return migrants differs largely between countries when controlling for observable characteristics. While return migrants are found to perform better on the labour market in two cities (Cotonou and Lome), no significant impact is found on average in the five other cities of the sample.

- Last, using data on a sample of self-employed and firm owners, experience abroad appears to be associated with a significant productive advantage in Abidjan and Dakar.

Given the data at hand, our study does not allow to control for unobserved individual characteristics of return migrants (selection bias). More information is needed, for instance on individual characteristics at the time of migration. Specific panel surveys and matched data, designed to gather information on immigrants in OECD countries and their families in their origin countries, would also be necessary to better identify the precise determinants of emigration and of return migration and to help evaluate the precise impact of return migration on origin countries.

## References

- Adepoju A. (2005), "Migration in West Africa", Paper prepared for the Policy Analysis and Research Programme of the Global Commission on International Migration", Global Commission on International Migration, 23p.
- Ammassari S. (2003), "From nation-building to entrepreneurship: the impact of elite return migrants in Côte d'Ivoire and Ghana", mimeo., Sussex Centre for Migration Research.
- Ba H. (2006), "Les statistiques des travailleurs migrants en Afrique de l'Ouest", Cahier des Migrations Internationales 79F, Bureau International du Travail, Genève, 80p.
- Beine M., F. Docquier et H. Rapoport (2001), "Brain Drain and Economic Growth: Theory and Evidence", *Journal of Development Economics* 64(1), pp.275-89.
- Beine M., F. Docquier et H. Rapoport (2003), "Brain Drain and Growth in LDCs: Winners and Losers", IZA Discussion Paper. Institute for the Study of Labor, Bonn.
- Bhagwat, J.N. et K. Hamada. (1974), "The Brain Drain, International Integration of Markets for Professionals and Unemployment: A Theoretical Analysis", *Journal of Development Economics* 1(1), pp.19-42.
- Bhagwati, Jagdish N. (1972): «The United States in the Nixon Era: The End of Innocence », Daedalus
- Black R., King R. and Tiemoko R. (2003), "Migration, return and small enterprise development in Ghana: a route out of poverty?", Sussex Migration Working Paper n°9, Sussex Centre for Migration Research.
- Blomqvist, AG. (1986): « International migration of educated manpower and social rates of return to education in LDCs », *International Economic Review*, 27(1) : 165 -74.
- Bocquier P. (1998), "L'immigration ouest-africaine en Europe : une dimension politique dans rapport avec son importation démographique", la chronique du CEPED n°30, juillet-septembre 1998.
- Böhning W. (1987), *Studies in International Migration*, New York: St. Martin's Press.
- Borjas G. (1987), "Self-Selection and the Earnings of Immigrants", *American Economic Review*, 77, pp.531-553.

- Borjas G. and Bratsberg B. (1996), "Who leaves? The out-Migration of the Foreign-Born", *The Review of Economics and Statistics*, 78(1), pp.165-176.
- Brydon L. (1992), "Ghanaian women in the process of migration", in S. Chant (ed.) *Gender and Migration in Developing countries*. London and New York, Belhaven Press, pp.73-90
- Co C.Y., Gang I.N. and Myeong-Su Y. (2000), "Returns to returning", *Journal of Population Economics*, 13, pp.57-79.
- de Coulon A. and Piracha M. (2005), "Self-Selection and the Performance of Return Migrants : the Source Country perspective", *Journal of Population Economics*, 18(4), pp.779-807.
- DIAL (2007) "Youth and labor market in Africa: a literature review", DIAL Working Paper no. DT/2007/02.
- Dustmann C. (2000), "Why Go Back ? Return Motives of Migrant Workers", mimeo, University College of London.
- Dustmann C. and Kirchkamp O. (2002), "The optimal migration duration and activity choice after re-migration", *Journal of Development Economics*, 67, pp. 351-372.
- Dustmann C. and Weiss Y. (2007), "Return Migration: Theory and Empirical Evidence", CREAM discussion paper n°02/07.
- Enchautegui M.E. (1993), "The value of U.S. Labor Market Experience in the Home Country: The case of Puerto Rican Return Migrants", *Economic Development and Cultural Change*, 42(1), pp.169-191
- Glytsos N.P. (1988), "Remittances and Temporary Migration: A Theoretical Model and its Testing ith the Greek-German Experience", *Weltwirtschaftliches Archiv*, 124, pp. 524-549.
- Haque, N.U. et S.J. Kim (1995), "Human capital flight' : impact of migration on income and growth", *IMF Staff Papers* 3(2), pp.170-86.
- Hellerstein J. and Neumark D. (2003) "Production Function and Wage Equation Estimation with Heterogeneous Labor: Evidence from a New Matched Employer-Employee Data Set", NBER.
- Ilahi N. (1999), "Return migration and occupational change", *Review of Development Economics*, 3, 170-186.

- Jasso G. and Rosenzweig M.R. (1982), "Estimating the Emigration Rates of Legal Immigrants using Administrative and Survey Data: The 1971 Cohort of Immigrants to the United States", *Demography*, 19, pp. 279-290.
- Kiker B.F. and Traynham E.C. (1977), "Earnings Differentials among Nonmigrants, Return Migrants, and Nonreturn Migrants", *Growth and Change*, 8(2), pp.2-7
- McCormick B. and Wahba J. (2001), "Overseas Work Experience, Savings and Entrepreneurship Amongst Return Migrants to LDCs", *Scottish Journal of Political Economy*, 48(2), pp.164-178.
- Mesnard A. (2004), "Temporary migration and capital market imperfections", *Oxford Economic Papers* 56, pp.242-262.
- Nakosteen R. and Zimmer M. (1980), "Migration and Income: The Question of Self-Selection", *Southern Economic Journal*, 46, pp.840-851.
- Nicholson B. (2004), "Migrants as Agents of Development: Albanian return migrants and micro-enterprise" in D. Pop (Ed.), *New Patterns of Labour Migration in Central and Eastern Europe* / Cluj Napoca, Romania: AMM Editura, pp.94-110.
- Rooth D. and Saarela J. (2007), "Selection in migration and return migration: Evidence from micro data", *Economics Letters*, 94, pp.90-95.
- Stark O., C. Helmenstein et A. Prskawetz (1997), "A brain gain with a brain drain", *Economics Letters*, 55, pp.227-34.
- Usher, D. (1977), "Public property and the effect of migration upon other residents of the migrants' countries of origin and destination", *Journal of Political Economy*, 85(5), pp.1001-20.
- Wahba J. (2003), "Does International Migration Matter? A Study of Egyptian Return Migrants", mimeo.

**Table 1: Sample size**

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

Source: *I-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			
<b>Cotonou</b>	89.0	4.7	0.6	2.3	7.5	3.5	100.0	n.a.
<b>Ouagadougou</b>	89.4	9.1	0.3	0.6	9.9	0.7	100.0	n.a.
<b>Abidjan</b>	82.5	1.1	0.6	0.4	2.1	15.4	100.0	n.a.
<b>Bamako</b>	91.9	4.3	1.5	0.9	6.7	1.4	100.0	n.a.
<b>Niamey</b>	92.5	1.9	0.2	1.2	3.2	4.3	100.0	n.a.
<b>Dakar</b>	96.8	0.7	0.3	0.9	1.9	1.3	100.0	n.a.
<b>Lomé</b>	82.4	5.4	0.8	7.1	13.3	4.3	100.0	n.a.
<b>Total</b>	<b>88.5</b>	<b>2.8</b>	<b>0.6</b>	<b>1.4</b>	<b>4.8</b>	<b>6.7</b>	<b>100.0</b>	n.a.

Source: *I-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 *I-2-3* Surveys**

	Cotonou (Benin)	Ouagadougou (Burkina Faso)	Abidjan (Cote d’Ivoire)	Bamako (Mali)	Niamey (Niger)	Dakar (Senegal)	Lome (Togo)	All
Nb. of surveyed microenterprises	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			
<b>Cotonou</b>	31.3	36.1	42.9	37.6	37.0	30.2	31.7	32.9
<b>Ouagadougou</b>	31.4	32.3	45.7	35.6	32.8	32.4	31.5	35.6
<b>Abidjan</b>	29.4	32.3	39.7	32.1	34.3	34.6	30.3	29.4
<b>Bamako</b>	32.0	36.3	36.1	36.7	36.3	31.9	32.2	35.9
<b>Niamey</b>	31.6	37.6	38.7	39.5	38.4	34.6	32.0	31.9
<b>Dakar</b>	32.4	42.7	45.5	37.8	40.9	33.0	32.5	37.8
<b>Lomé</b>	30.7	35.6	42.9	35.6	36.0	31.9	31.4	30.9
<b>Total</b>	<b>31.0</b>	<b>34.8</b>	<b>40.3</b>	<b>36.1</b>	<b>35.9</b>	<b>34.1</b>	<b>31.4</b>	<b>34.1</b>

Source: *I-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			
<b>Cotonou</b>	47.7	46.1	59.4	49.7	48.1	48.7	47.8	44.4
<b>Ouagadougou</b>	50.3	54.4	75.9	40.0	54.0	53.9	50.7	58.5
<b>Abidjan</b>	47.7	63.7	59.8	45.4	59.0	60.4	49.9	51.2
<b>Bamako</b>	49.7	44.3	61.5	42.6	48.0	48.7	49.5	58.0
<b>Niamey</b>	48.5	52.8	76.5	64.8	58.5	47.7	48.8	69.0
<b>Dakar</b>	47.2	37.8	65.0	54.4	50.4	55.0	47.4	68.8
<b>Lomé</b>	47.7	45.2	60.9	44.0	45.5	56.1	47.8	39.3
<b>Total</b>	<b>48.1</b>	<b>50.3</b>	<b>62.0</b>	<b>47.3</b>	<b>50.8</b>	<b>58.6</b>	<b>49.0</b>	<b>55.0</b>

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

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			
<b>Cotonou</b>	6.4	6.9	13.5	6.3	7.2	5.4	6.4	5.2
<b>Ouagadougou</b>	4.8	5.2	16.8	4.0	5.4	6.3	4.9	1.8
<b>Abidjan</b>	6.3	6.2	13.5	6.3	8.2	2.6	5.8	6.8
<b>Bamako</b>	4.6	4.0	6.4	3.6	4.5	5.5	4.6	1.1
<b>Niamey</b>	4.8	5.8	16.1	6.0	6.4	2.9	4.8	2.6
<b>Dakar</b>	5.0	4.1	10.3	3.8	5.1	4.3	5.0	4.1
<b>Lomé</b>	6.5	7.0	12.1	5.9	6.7	5.4	6.4	4.2
<b>Total</b>	<b>5.6</b>	<b>5.6</b>	<b>11.1</b>	<b>5.5</b>	<b>6.3</b>	<b>3.0</b>	<b>5.5</b>	<b>2.8</b>

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)
<b><i>Gender and age</i></b>							
Male	3.104 (0.000)***	1.779 (0.000)***	2.669 (0.000)***	2.236 (0.000)***	1.604 (0.000)***	1.744 (0.000)***	3.192 (0.000)***
Age	0.147 (0.000)***	-0.041 (0.005)***	0.205 (0.000)***	0.049 (0.004)***	0.044 (0.004)***	0.117 (0.000)***	0.118 (0.000)***
Age squared	-0.002 (0.000)***	-0.001 (0.001)***	-0.003 (0.000)***	-0.001 (0.000)***	-0.001 (0.000)***	-0.002 (0.000)***	-0.002 (0.000)***
<b><i>Religion [ref. is Muslim]</i></b>							
Catholic	1.518 (0.000)***	2.462 (0.000)***	3.854 (0.000)***	2.722 (0.000)***	2.966 (0.000)***	2.301 (0.000)***	2.650 (0.000)***
Protestant	1.342 (0.000)***	2.921 (0.000)***	3.710 (0.000)***	1.256 (0.112)	3.594 (0.000)***	3.104 (0.046)**	3.001 (0.000)***
Other religion	-0.685 (0.001)***	1.662 (0.000)***	2.427 (0.000)***	-1.873 (0.027)**	2.524 (0.008)***	2.306 (0.138)	0.943 (0.000)***
<b><i>Migration status [ref. is « Non migrant »]</i></b>							
WAEMU return migrant	1.071 (0.000)***	0.604 (0.000)***	-0.119 (0.804)	-0.097 (0.729)	1.001 (0.009)***	0.158 (0.764)	0.765 (0.000)***
OECD return migrant	7.612 (0.000)***	12.021 (0.000)***	6.119 (0.000)***	2.688 (0.000)***	11.228 (0.000)***	6.617 (0.000)***	5.502 (0.000)***
Other return migrant	0.432 (0.192)	0.199 (0.739)	0.130 (0.858)	-0.216 (0.702)	1.621 (0.001)***	-0.981 (0.024)**	-0.174 (0.368)
Immigrant	-0.510 (0.050)**	0.473 (0.399)	-3.073 (0.000)***	-0.253 (0.579)	-2.609 (0.000)***	-0.929 (0.012)**	-0.501 (0.042)**
Constant	1.834 (0.000)***	4.917 (0.000)***	-0.285 (0.379)	3.466 (0.000)***	4.451 (0.000)***	2.982 (0.000)***	1.786 (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: I-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			
<b>Cotonou</b>	64.5	63.2	69.7	67.2	64.9	68.1	64.7	75.9
<b>Ouagadougou</b>	56.5	52.8	65.5	65.5	53.9	65.6	56.3	74.9
<b>Abidjan</b>	59.9	68.6	79.9	71.0	72.2	76.6	62.7	48.8
<b>Bamako</b>	55.3	53.4	50.8	48.1	52.1	56.2	55.1	68.9
<b>Niamey</b>	46.9	58.0	57.6	68.6	61.9	67.4	48.2	71.4
<b>Dakar</b>	50.7	55.1	53.1	67.2	60.3	61.2	51.0	75.3
<b>Lomé</b>	69.6	67.5	58.1	71.8	69.2	74.2	69.7	78.1
<b>Total</b>	<b>57.2</b>	<b>59.3</b>	<b>63.8</b>	<b>68.2</b>	<b>62.5</b>	<b>74.5</b>	<b>58.6</b>	<b>73.2</b>

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

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

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

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

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

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

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
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

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

Note: Occupied individuals aged 15 years and older.

**Table 17: MLE with selection correction for participation**

	Cotonou (Benin)	Ouagadougou (Burkina Faso)	Abidjan (Côte d'Ivoire)	Bamako (Mali)	Niamey (Niger)	Dakar (Senegal)	Lome (Togo)
Sex (1 : Male)	0.466 (0.053)***	0.416 (0.059)***	0.412 (0.053)***	0.263 (0.049)***	0.245 (0.069)***	-0.164 (0.068)**	0.318 (0.057)***
Francophone	0.181 (0.064)***	0.425 (0.073)***	0.033 (0.062)	0.281 (0.063)***	0.236 (0.074)***	0.335 (0.060)***	0.089 (0.068)
Foreign language	0.276 (0.074)***	0.365 (0.086)***	0.232 (0.074)***	0.149 (0.063)**	0.086 (0.078)	0.361 (0.078)***	0.051 (0.070)
Diploma = CEP	0.671 (0.073)***	0.449 (0.084)***	0.599 (0.072)***	0.273 (0.076)***	0.539 (0.089)***	0.365 (0.078)***	0.577 (0.070)***
Diploma = BEPC	1.307 (0.101)***	1.376 (0.112)***	1.285 (0.112)***	0.629 (0.116)***	1.161 (0.146)***	0.628 (0.104)***	1.181 (0.098)***
Diploma = CAP	1.402 (0.175)***	1.264 (0.190)***	1.253 (0.217)***	0.626 (0.123)***	1.496 (0.237)***	0.789 (0.266)***	1.183 (0.227)***
Diploma = Brevet technique	1.247 (0.545)**	1.786 (0.252)***	1.235 (0.211)***	1.157 (0.112)***	1.419 (0.209)***	0.944 (0.281)***	1.452 (0.238)***
Diploma = BAC	1.691 (0.166)***	1.940 (0.199)***	1.795 (0.160)***	0.934 (0.211)***	1.963 (0.197)***	1.085 (0.151)***	1.665 (0.175)***
Diploma = DEUG/DUT/BTS	2.663 (0.234)***	2.279 (0.227)***	2.251 (0.165)***	1.228 (0.164)***	2.000 (0.258)***	1.314 (0.276)***	2.796 (0.274)***
Diploma = BAC+2	2.553 (0.144)***	2.586 (0.164)***	2.461 (0.142)***	1.602 (0.124)***	2.374 (0.146)***	1.581 (0.151)***	2.688 (0.164)***
Diploma = Other	2.114 (0.209)***	1.639 (0.240)***	1.978 (0.230)***	1.298 (0.244)***	2.094 (0.184)***	1.531 (0.194)***	2.273 (0.252)***
Experience	21.965 (0.844)***	16.059 (0.812)***	13.640 (0.884)***	10.310 (0.681)***	15.473 (0.740)***	16.403 (0.852)***	15.832 (0.775)***
Experience <sup>2</sup>	-26.447 (1.413)***	-18.082 (1.284)***	-14.810 (1.515)***	-11.470 (1.077)***	-16.294 (1.056)***	-18.694 (1.405)***	-18.758 (1.345)***
Public sector	0.264 (0.102)***	0.714 (0.090)***	0.735 (0.112)***	0.337 (0.079)***	0.588 (0.088)***	0.860 (0.098)***	0.664 (0.106)***
Private sector	0.369 (0.087)***	0.463 (0.096)***	0.678 (0.067)***	0.226 (0.068)***	0.350 (0.084)***	0.841 (0.069)***	0.291 (0.099)***
<b>Return migrant</b>	<b>0.285</b> <b>(0.137)**</b>	<b>0.150</b> <b>(0.136)</b>	<b>-0.181</b> <b>(0.277)</b>	<b>-0.014</b> <b>(0.127)</b>	<b>0.172</b> <b>(0.244)</b>	<b>-0.278</b> <b>(0.269)</b>	<b>0.206</b> <b>(0.112)*</b>
Return migrant x Male	-0.084 (0.173)	-0.340 (0.166)**	-0.038 (0.311)	0.184 (0.160)	-0.269 (0.270)	0.396 (0.315)	0.037 (0.153)
x Holds a diploma	-0.277 (0.189)	-0.172 (0.182)	0.275 (0.394)	-0.098 (0.176)	0.419 (0.300)	0.441 (0.352)	-0.176 (0.156)
x Public sector	0.063 (0.308)	0.143 (0.266)	-0.172 (0.535)	-0.093 (0.269)	-0.676 (0.389)*	-0.762 (0.612)	-0.011 (0.271)
x Private sector	-0.060 (0.244)	0.568 (0.274)**	0.162 (0.433)	-0.227 (0.238)	-0.198 (0.376)	-0.149 (0.424)	0.267 (0.252)
Constant	0.627 (0.129)***	1.251 (0.167)***	2.447 (0.148)***	3.179 (0.137)***	1.772 (0.194)***	2.198 (0.189)***	1.481 (0.122)***
Observations	7,390	7,939	7,441	7,302	7,935	11,651	6,109

Standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

The set of regressors in the participation equation includes dummies for sex, diploma, spoken languages and religion, experience in years and its squared and dummies for father's occupation and education.

**Table 18: Microenterprises' Production Functions**

	Cotonou (Benin)	Ouagadougou (Burkina Faso)	Abidjan (Cote d'Ivoire)	Bamako (Mali)	Niamey (Niger)	Dakar (Senegal)	Lome (Togo)
Log(Capital+1)	0.176 (0.035)***	0.241 (0.032)***	0.142 (0.031)***	0.180 (0.033)***	0.231 (0.041)***	0.122 (0.027)***	0.091 (0.035)***
Dummy = 1 if no capital	0.700 (0.304)**	0.111 (0.165)	0.207 (0.226)	0.411 (0.144)***	0.043 (0.188)	0.257 (0.158)	0.321 (0.172)*
Log(Total number of hours worked)	0.389 (0.061)***	0.444 (0.070)***	0.428 (0.058)***	0.617 (0.056)***	0.519 (0.068)***	0.481 (0.054)***	0.467 (0.062)***
Share of medium- educated labour	0.187 (0.157)	0.282 (0.118)**	-0.049 (0.118)	0.075 (0.124)	-0.048 (0.128)	0.052 (0.090)	-0.016 (0.133)
Share of highly-educated labour	0.398 (0.178)**	0.419 (0.159)***	0.307 (0.118)***	0.241 (0.115)**	0.066 (0.201)	0.174 (0.124)	0.106 (0.144)
Share of female labour	-0.841 (0.171)***	-0.456 (0.121)***	-0.342 (0.117)***	-0.453 (0.113)***	-0.243 (0.133)*	-0.359 (0.095)***	-0.928 (0.126)***
Firm owner is a return migrant							
...from an OECD country	0.623 (0.659)	-	1.582 (0.605)***	0.498 (0.343)	0.119 (1.416)	1.397 (0.692)**	1.048 (0.573)*
...from a WAEMU country	-0.039 (0.244)	-0.169 (0.171)	0.108 (0.409)	0.183 (0.195)	0.231 (0.382)	-0.618 (0.350)*	0.235 (0.189)
...from another country	0.902 (0.356)**	0.431 (0.465)	-0.094 (0.482)	0.272 (0.555)	0.152 (0.499)	0.200 (0.292)	-0.004 (0.162)
Constant	2.305 (0.434)***	2.692 (0.516)***	4.276 (0.399)***	2.675 (0.398)***	1.302 (0.516)**	3.562 (0.368)***	3.162 (0.424)***
Observations	842	881	957	954	693	993	876
R-squared	0.25	0.35	0.20	0.34	0.28	0.30	0.25

Absolute value of t statistics in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Dependent variable is Log(value-added). Additional control variables include industries (8).

**Table 19: Microenterprises' Production Function - Pooled sample**

	Pooled sample (1)	Pooled sample (2)	Pooled sample (3)
Log(capital stock + 1)	0.166 (0.012)***	0.167 (0.012)***	0.165 (0.012)***
Dummy = 1 if no capital	0.263 (0.067)***	0.267 (0.067)***	0.262 (0.067)***
Log(Total number of hours worked)	0.472 (0.023)***	0.472 (0.023)***	0.473 (0.023)***
Share of medium-educated labour in number of hours worked	0.079 (0.046)*	0.072 (0.046)	0.076 (0.046)*
Share of highly-educated labour in number of hours worked	0.294 (0.052)***	0.298 (0.052)***	0.293 (0.052)***
Share of female labour in number of hours worked	-0.526 (0.044)***	-0.527 (0.044)***	-0.528 (0.044)***
Firm owner is a return migrant			
...from an OECD country	0.761 (0.230)***	-	0.707 (0.244)***
...from a WAEMU country	0.028 (0.088)	-	-0.024 (0.092)
...from another country	0.211 (0.117)*	-	0.129 (0.123)
Presence in the household of a return migrant			
...from an OECD country	-	0.248 (0.183)	0.065 (0.194)
...from a WAEMU country	-	0.117 (0.072)	0.124 (0.075)*
...from another country	-	0.253 (0.097)***	0.214 (0.102)**
Constant	2.474 (0.147)***	2.460 (0.148)***	2.463 (0.148)***
Observations	6,196	6,196	6,196
R-squared	0.31	0.31	0.32

Standard errors in parentheses

\* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

Dependent variable is Log(value-added). Additional control variables include industries (8) and country dummies (6).