

Chapter 11

Returns to Returning in West Africa

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Although labor migration has attracted much attention among researchers and resulted in a sizable body of literature on the welfare implications of migration and the uses and impact of remittances, the determinants and impacts of return migration have been underresearched. This neglect is surprising, because a large proportion of migrants return home at some point in their life cycle, making many migrations temporary.¹

In West Africa, subregional, interregional, and international migration is essentially temporary (although tighter immigration policies in Europe have lengthened the duration of migration there) (Adepoju 2005; Ba 2006). According to surveys conducted in 1993 by the Réseau Migrations et Urbanisation en Afrique de l'Ouest (REMUAO) in seven countries, 111,000 people ages 15 and older migrated from REMUAO countries to Europe between 1988 and 1992, and 33,000 migrants returned (Bocquier 1998).²

Empirical evidence concerning the relationship between return migration and development is too fragmentary and contradictory to be used to draw clear conclusions or formulate concrete policy measures. The developmental impact of return migration is likely to vary significantly depending on several critical factors, including its cost, the characteristics of return migrants, the degree and direction of selectivity, the reasons for return, and the situation prevailing in the home country. For example, even when migrants acquire new skills and experience abroad, they may not be able to apply them back home. Indeed, it is difficult for migrants who have acquired technical or industrial skills to apply them in rural settings, where the infrastructure needed to make effective use of new skills is lacking. In urban areas, where access to jobs is much easier for individuals with dense social or family networks, return migrants may 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.

We estimate the impact of return migration at the individual level. Our aim is to shed light on whether the financial capital and new skills acquired abroad are used productively back home. We examine this issue by investigating whether return migrants' experience abroad provides a positive earnings

premium for wage-earners, a productivity advantage for business owners, or both, upon returning.

The chapter is organized as follows. We begin by reviewing the empirical literature on the impact of return migration from sending countries' perspective. In the second section, we describe the data and provide descriptive statistics on the characteristics of return migrants, which we compare with statistics on migrants and nonmigrants. In the third section, we analyze the labor market performance of return migrants by estimating earnings functions or production functions. In the last section, we provide concluding remarks and suggest directions for future work.

Review of the Empirical Literature

Empirical studies on the labor market performance of return migrants investigate whether returnees are able to apply at home what they learned abroad by comparing the wages of return migrants with the wages of people who stayed in the home country (see, for example, Kiker and Traynham 1977; Enchautegui 1993; Co, Gang, and Yun 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 Puerto Rican men 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.

In contrast, using panel data on a large sample of Hungarian households, Co, Gang, and Yun (2000) find that foreign experience matters and that a wage premium is paid for having gone abroad. Their results also suggest large differences in the returns to foreign experience by gender and host country: foreign experience strongly matters for women but not for men. Women who migrated to countries in the Organisation for Economic Co-operation and Development (OECD) earn a 67 percent premium over women who have not been abroad. In contrast, the premium is insignificant for women who migrated to non-OECD countries.

No such quantitative analysis has been conducted on African return migrants. However, a study of female migrants from Ghana argues that most of them did not learn anything new while working abroad, because they worked only in unskilled jobs (Brydon 1992).

Potential selection biases are an important methodological issue in this strand of literature. In the case of return migration, individuals are self-selected (see, for example, Nakosteen and Zimmer 1980; Borjas 1987; Borjas and Bratsberg 1996). The selective process is said to be positive if individuals

who choose to leave a country (and to return to their home country in the case of return migrants) are more able or more motivated than individuals who choose not to migrate. Ignoring self-selection in the process of return migration may result in biased estimates of the wage premium related to experience abroad.

De Coulon and Piracha (2005) find evidence that return migrants in Albania are negatively self-selected (that is, had they chosen not to migrate, their labor market performance would have been worse than that of nonmigrants). Using Hungarian data, Co, Gang, and Yun (2000) address the self-selection issue by estimating two types of earnings equations. They first estimate an earnings equation using a simple ordinary least squares (OLS) regression 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 on earnings of going abroad in the OLS estimate reflects the effect of self-selection: men who migrated would have earned more whether or not they had gone abroad. The reverse holds true for women, who negatively select migration.

A few empirical studies examine the impact of return migration on the development of small businesses in the home country (Ilahi 1999; McCormick and Wahba 2001; Ammassari 2003; Black, King, and Tiemoko 2003; Wahba 2004; Mesnard 2004; Nicholson 2004). Experience abroad may enable migrants to contribute to small business development in two ways. First, savings accumulated abroad may help alleviate domestic capital market imperfections. Second, migrants may develop new skills and form new ideas abroad.

McCormick and Wahba (2001) explore the extent to which Egyptian returnees become entrepreneurs and the influence on this process of overseas savings, overseas work experience, and premigration formal education. Using data from the 1988 Labor Force Sample Survey, they estimate a simple model of the probability that a return migrant is an entrepreneur. Their findings suggest that among literate returnees, total savings accumulated overseas and the length of overseas employment positively and significantly affect the probability of becoming an entrepreneur. Longer periods overseas have no influence on this probability among illiterate returnees. Ilahi (1999) examines similar issues for Pakistan, providing some evidence that return migrants use their savings to invest in self-employment.

A project by the Centre for Migration Research of the University of Sussex explores the relationship between migration, return, and development among both "elite" and less-skilled returnees to Ghana and Côte d'Ivoire (Black, King, and Litchfield 2003). Although the research is mostly qualitative and the small sample sizes caution against generalizations, the authors identify 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, and the contacts they have with friends and relatives back home.

Data and Descriptive Statistics

The data are taken from phases 1 and 2 of the 1-2-3 surveys conducted in the seven capital cities of the French-speaking countries of the West African Economic and Monetary Union (WAEMU) (see box O.1 in the overview for a description of these surveys).³ We first use the sample of all individuals 15 and older interviewed in Phase 1 to compare the characteristics of return migrants relative to nonmigrants and immigrants. Nonmigrants are defined as individuals who never left the country in which they were born and interviewed. Immigrants are nonnative residents, defined as individuals who are not citizens of the country they currently reside in. Return migrants are defined as individuals who were born in the country of current residence (or who are citizens of that country) who lived abroad for some time and then came back. Three types of return migrants can be identified: migrants who came back from a WAEMU country, migrants who came back from an OECD country, and migrants who came back from a country outside WAEMU or the OECD. As we show, the three types of return migrants have somewhat different characteristics.

Because the surveys were not designed to investigate migration, they provide very limited information on the migration experience of returnees. The database contains no information on the year of departure; the place of residence at the time of migration; the duration of the stay (that is, whether it was temporary, seasonal, circular, or longer term); family and labor status during migration; or parents' migrant status.

The total sample comprises 58,459 individuals 15 and older (table 11.1). The sample of return migrants includes 3,594 individuals, 88 percent of them returning from non-OECD countries. Return migrants represent a relatively small share of the population living in the seven cities. The average share is 4.8 percent, but it ranges from 1.9 percent in Dakar to 13.3 percent in Lomé.⁴ In five out of seven cities, the share of return migrants in the population is actually higher than the share of immigrants. The exceptions are Abidjan, where the share of immigrants in the population is very high (15.4 percent) and the share of return migrants low (2.1 percent), and Niamey, where the shares of both immigrants (4.3 percent) and return migrants (3.2 percent) are relatively small.

Phase 2 of the 1-2-3 survey is restricted to small informal microenterprises whose owners were surveyed during Phase 1. This sample includes

Table 11.1 Descriptive Statistics of Sample of Seven Cities in West Africa, by Migration Status, 2001/02

Statistic	Nonmigrants	Return migrants from				Immigrants	Total
		WAEMU country	OECD country	Other country	All countries		
Sample size	52,267	2,162	390	1,042	3,594	2,598	58,459
Share of sample (percent)	88.5	2.8	0.6	1.4	4.8	6.7	100.0
Average age (years)	31.0 (13.7)	34.8 (15.1)	40.3 (14.6)	36.1 (15.8)	35.9 (15.3)	34.1 (12.2)	31.4 (13.7)
Men (percent)	48.1	50.3	62.0	47.3	50.8	58.6	49.0
Married (percent)	42.7	54.4	60.9	55.4	55.5	62.4	44.6
Years of education	5.6 (4.9)	5.6 (5.2)	11.1 (6.7)	5.5 (5.0)	6.3 (5.7)	3.0 (4.6)	5.5 (5.0)

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries in the West African Economic and Monetary Union (WAEMU) conducted in 2001/02 by the Observatoire économique et statistique d'Afrique Subsaharienne (AFRISTAT); Développement, Institutions et Mondialisation (DIAL); and national statistics institutes.

Note: Figures are for individuals 15 and older. Figures in parentheses are standard deviations. WAEMU = West African Economic and Monetary Union, OECD = Organisation for Economic Co-operation and Development.

6,619 microentreprises. The survey collected detailed information on production and sales, expenses, employee characteristics, and physical capital. It also includes information on the founding of the enterprise and its sources of capital.

Are return migrants different from nonmigrants in terms of their individual characteristics? How do they compare with immigrants? Migration theory suggests that migrants and return migrants choose where to live by comparing the advantages of living in various places. The utility of living abroad or in the home country can depend on observed and unobserved characteristics. If self-selection occurs, one would expect migrants to be different from nonmigrants and, among migrants, return migrants to be different from migrants who stay abroad. In fact, observable differences between nonmigrants, return migrants, and immigrants in the seven cities studied are significant and informative; differences between return migrants from OECD countries and return migrants from non-OECD countries (both WAEMU and non-WAEMU) are also quite important.

We start by examining the distribution of four individual characteristics: age, gender, marital status, and education. Return migrants tend to be older and better educated than nonmigrants, and they are more likely to be men and married (see table 11.1). On average, return migrants are five years older than nonmigrants, and 51 percent are men (compared with 48 percent in the nonmigrant population). Return migrants from OECD countries are on average five years

older than return migrants from non-OECD countries, and the proportion of men is much larger (62 percent versus 49 percent). The fact that return migrants are on average older than nonmigrants is not surprising, as future emigrants and future return migrants are included in the population of nonmigrants. The same reasoning can explain why immigrants in WAEMU are on average older than nonmigrants but younger than return migrants from WAEMU.

On average, return migrants are a bit more educated than nonmigrants. Large differences exist between the average level of education of return migrants from OECD countries (more than 11 years) and return migrants from WAEMU (5.6 years) or other developing countries (5.5 years). These differences do not result from the demographic composition of the samples. As shown in table 11.2, differences in education levels between the three groups of returnees remain after controlling for gender, age, and religion.

Two factors may explain the high average level of education of return migrants from OECD countries. First, educated people may find it more profitable to migrate to a developed country, where the returns to their human capital are likely to be higher. Second, people may migrate to obtain an education, in

Table 11.2 Ordinary Least Squares Regressions of Years of Education on Individual Characteristics in Seven Cities in West Africa, 2001/02

Variable	Coefficient	P > t
<i>Gender and age</i>		
Male	2.242	0.000***
Age	0.085	0.000***
Age squared	-0.002	0.000***
<i>Religion (reference = Muslim)</i>		
Catholic	2.758	0.000***
Protestant	2.977	0.000***
Other religion	1.151	0.000***
<i>Migration status (reference = nonmigrant)</i>		
WAEMU return migrant	0.555	0.000***
OECD return migrant	5.969	0.000***
Other return migrant	0.020	0.890
Immigrant	-1.995	0.000***
Constant	2.621	0.000***
Number of observations	58,058	
R ²	0.1478	

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 11.1 for details).

Note: Figures are for individuals 15 and older. City dummies were included but are now shown.

WAEMU = West African Economic and Monetary Union, OECD = Organisation for Economic Co-operation and Development.

*** significant at the 1 percent level.

which case it is not surprising to observe that return migrants have a higher level of education than nonmigrants.⁵ The policy implications of the two explanations are very different. If educated people move to developed countries to benefit from high returns, brain drain will reduce the chance of the home countries to develop (Bhagwati 1972; Bhagwati and Hamada 1974; Usher 1977; Blomqvist 1986; Haque and Kim 1995), unless a large enough portion of migrants with enough experience from abroad returns to compensate for the original loss, or the possibility to migrate increases the number of individuals who decide to get an education, provided that only a smaller number of them succeed in leaving their country (Stark, Helmenstein, and Prskawetz 1997; Beine, Docquier, and Rapoport 2001, 2003).

Labor Market Performance of Return Migrants

The labor market performances of return migrants can be assessed in various ways. In what follows, we start by examining the labor market participation, sectoral allocation, and earnings of return migrants. We then investigate whether return migrants' experience abroad provides an earnings premium for wage-earners, a productivity advantage for business owners, or both.

Employment Situation of Return Migrants

In developing economies, wage-earners in the public or formal private sector and entrepreneurs or business owners in both the formal and informal sectors are considered "favored" over workers in the informal sector.⁶ Given the individual characteristics of return migrants, particularly with respect to their level of education, one would expect their employment situation to be more favorable than that of nonmigrants. Descriptive statistics from table 11.3 indicate that this is the case to some extent for all migrants and very much the case for return migrants from OECD countries.

On average, labor force participation is higher for return migrants than for nonmigrants, with large differences across cities. The labor force participation of returnees is much higher than that of nonmigrants in Abidjan, Dakar, and Niamey. It is lower than that of nonmigrants in Ouagadougou and comparable to that of nonmigrants in Bamako, Cotonou, and Lomé. In contrast, among return migrants from OECD countries, labor force participation with respect to nonmigrants is higher in all cities (substantially so in some cities). Labor force participation of return migrants from countries outside WAEMU and OECD is also very high.

Sectoral differences are not significant on average for active nonmigrants and active return migrants. They are striking, however, among migrants returning from OECD countries. For example, the proportion of the labor force working

Table 11.3 Labor Force Participation of Nonmigrants, Return Migrants, and Immigrants in Seven Cities in West Africa, 2001/02
(percent, except where otherwise indicated)

Variable	Nonmigrants	Return migrants from				Immigrants	All
		WAEMU country	OECD country	Other country	All countries		
Labor force participation	57.2	59.3	63.8	68.2	62.4	74.5	58.6
Public sector wage workers	5.4	5.3	18.1	3.4	6.3	0.9	5.1
Private formal sector wage workers	7.8	6.6	16.9	5.1	7.4	8.5	7.8
Business owners	3.1	4.0	11.2	5.7	5.4	8.3	3.6
Informal sector workers	83.7	84.1	53.8	85.8	80.9	82.3	83.5
Earnings of active individuals (1,000 CFAF purchasing power parity)	55.9	54.7	227.1	46.0	73.4	57.6	56.9

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 11.1 for details).

Note: Figures are for individuals 15 and older. WAEMU = West African Economic and Monetary Union, OECD = Organisation for Economic Co-operation and Development.

as wage-earners in the public sector is 18.1 percent among migrants returning from OECD countries, 5.4 percent among nonmigrants, and 5.3 percent among migrants returning from WAEMU countries. Similar differences can be observed with regard to the percentage of individuals working as wage-earners in the formal private sector (16.9 percent among migrants returning from OECD countries versus 7.8 percent among nonmigrants) and as entrepreneurs (11.2 percent among migrants returning from OECD countries versus 3.1 percent among nonmigrants). Overall, these figures suggest that individuals returning from OECD countries gain access to more protected jobs and that the labor status of return migrants from other countries resembles that of nonmigrants.

The share of return migrants from OECD countries with formal sector and management jobs is relatively high (and share of informal sector jobs relatively low). The sectoral distribution of returnees from non-OECD countries is similar to that of nonmigrants.

The high participation rate of return migrants from OECD countries in the formal sector can be explained by their high educational level. But it could also indicate that their education, work experience, or both in OECD countries—if any—allowed them to gain specific knowledge that is valued in the formal

sector, such as an ability to deal with or knowledge of foreign regulations, which could be valued in export-oriented sectors.

In order to examine more thoroughly this “specific knowledge” argument, we check whether the higher labor participation of return migrants from OECD countries in formal private, public, or management jobs holds after controlling for a number of individual characteristics. We do so by running a multinomial logit regression of labor status on a number of individual characteristics on the pooled sample of all active individuals in the seven cities (table 11.4). The results indicate that when other individual characteristics are controlled for, the probability of working as a wage-earner in the public sector is actually lower for all return migrants. Thus, return migrants from OECD countries appear better able to secure jobs in the public sector because they have, on average,

Table 11.4 Multinomial Logit Regressions of Alternative Labor Statuses in Seven Cities in West Africa (Marginal Effects), 2001/02

Variable	Men		Women	
	Coefficient	P > t	Coefficient	P > t
<i>Public sector wage-earner</i>				
Years of education	0.021	0.000***	0.006	0.000***
Potential experience	0.011	0.000***	0.002	0.000***
Potential experience squared	0.000	0.000***	0.000	0.000***
<i>Migration status (reference = nonmigrant)</i>				
WAEMU return migrant	-0.041	0.000***	-0.003	0.032**
OECD return migrant	-0.029	0.004***	-0.004	0.147
Other return migrant	-0.044	0.000***	-0.007	0.000***
Immigrant	-0.075	0.000***	-0.011	0.000***
<i>Private formal sector wage-earner</i>				
Years of education	0.025	0.000***	0.011	0.000***
Potential experience	0.014	0.000***	0.002	0.000***
Potential experience squared	0.000	0.000***	0.000	0.000***
<i>Migration status (reference = nonmigrant)</i>				
WAEMU return migrant	0.005	0.784	0.004	0.507
OECD return migrant	-0.007	0.821	0.021	0.236
Other return migrant	-0.045	0.017**	-0.018	0.002***
Immigrant	-0.055	0.000***	-0.005	0.359
<i>Entrepreneur</i>				
Years of education	0.005	0.000***	0.004	0.000***
Potential experience	0.006	0.000***	0.002	0.000***
Potential experience squared	0.000	0.000***	0.000	0.011**

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Table 11.4 (continued)

Variable	Men		Women	
	Coefficient	P > t	Coefficient	P > t
<i>Migration status (reference = nonmigrant)</i>				
WAEMU return migrant	0.002	0.862	-0.006	0.272
OECD return migrant	0.078	0.010**	0.115	0.007***
Other return migrant	0.009	0.487	0.000	0.977
Immigrant	0.002	0.769	0.016	0.019
Number of observations	18,436		14,806	
Pseudo R ²	0.1823		0.2998	

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 11.1 for details).

Note: Figures are for individuals 15 and older. City dummies are included but not shown. Reference status is informal sector worker. WAEMU = West African Economic and Monetary Union, OECD = Organisation for Economic Co-operation and Development.

* significant at the 10 percent level, ** significant at the 5 percent level, *** significant at the 1 percent level.

more education, not because they migrated. The fact that after controlling for education public sector employment is actually lower for return migrants could reflect the loss in social capital that migrants incur while living abroad.

The probability of working as a wage-earner in the private formal sector is also significantly lower for migrants returning from non-WAEMU and non-OECD countries, but except for them, returnees do not appear more or less able to work in the private sector. The probability of being an entrepreneur in the formal or informal sector is significantly higher for migrants returning from OECD countries, even after controlling for a number of individual characteristics. This result could reflect the acquisition of specific knowledge or the fact that their migration spell allowed them to accumulate capital to start up a business. Experience abroad for returnees from elsewhere does not have a significant impact on entrepreneurship.

Because return migrants from OECD countries have more favorable characteristics and positions in the labor market, it is no surprise that their earnings are higher than those of nonmigrants (see table 11.3). Whether this finding holds true after controlling for individual characteristics and selection biases is examined together with the specific knowledge argument in the rest of the chapter.

Do return migrants access their employment through the same channels as nonmigrants? Statistics presented in table 11.5 suggest that they do not. Return migrants appear to rely less on personal relations than nonmigrants do (35 percent versus 42 percent for nonmigrants). The gap is even larger when the sample of returnees is restricted to migrants returning from OECD countries (23 percent versus 42 percent). Whether these differences hold when controlling for their individual characteristics and the types of positions they obtain remains to be investigated.

Table 11.5 Route of Access to Current Employment by Nonmigrants, Return Migrants, and Immigrants in Seven Cities in West Africa, 2001/02
(percent)

Route	Nonmigrants	Return migrants from				Immigrants	All
		WAEMU country	OECD country	Other country	All countries		
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
National employment agency or announcement	1.3	1.6	6.2	1.4	2.1	0.5	1.3
Competitive examination (<i>concours</i>)	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

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 11.1 for details).

Note: Figures are for individuals 15 and older. WAEMU = West African Economic and Monetary Union, OECD = Organisation for Economic Co-operation and Development.

The data used in this study are a sample of urban residents living in capital cities of WAEMU. As a result, only migrants returning from abroad to live in the seven cities surveyed are observed; this sample is likely not to be representative of the global flow of return migration, introducing at least two biases. First, on average, one would expect migrants returning to live in capital cities to be more educated/skilled than migrants returning to live in other cities or rural areas. Second, one would expect the share of migrants returning from OECD countries to be larger in capital cities.

To be sure, return migrants' choice to live in an urban or rural area upon returning 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), where migrants originating in Dakar appear to be much more likely to migrate to an OECD country than migrants from elsewhere in Senegal: almost 75 percent of migrants originating from Dakar migrated to Europe, the United States, or Canada versus 55 percent of migrants originating in other cities and only 40 percent of migrants originating in rural areas.

In what follows, we use phases 1 and 2 of the 1-2-3 surveys to examine the labor market performance of return migrants. Using data from Phase 1, we 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 2.⁷

Experience Abroad and Earnings

We consider a semi-log specification for the earnings equation:

$$\ln Y_i = \mathbf{X}_i \boldsymbol{\beta} + RM_i \alpha + e_i \quad (11.1)$$

where $\ln Y$ is the natural-log of monthly earnings, $\boldsymbol{\beta}$ and α are coefficient vectors, and e is the stochastic term. Matrix X includes variables on personal characteristics; RM is a dummy variable indicating whether the individual is a return migrant.

We restrict the estimation of equation (11.1) to the sample of workers who are wage-earners. (The impact of being a return migrant on the remuneration of self-employed individuals and business owners is examined later in the chapter.)

In order to properly estimate the impact of return migration on earnings, one needs to control for the selection of return migrants. A treatment effect model in which return migrants constitute the treated population and non-migrants the untreated (or control) population does so. However, the quality of the treatment depends on the migrants' destination. Return migrants are not a homogeneous population; migrants returning from OECD countries differ significantly from other return migrants. As individuals self-select into the treatment they receive, we run separate regressions for each of the three groups (returnees from a WAEMU country, returnees from an OECD country, and returnees from elsewhere). In each regression, the treated sample includes return migrants and the untreated sample includes nonmigrants. Immigrants are excluded from the regressions.

The self-selection of return migrants is only one potentially endogenous selection. Co, Gang, and Yun (2000) control for a double process of self-selection: labor force participation and return migration. They estimate their model using maximum likelihood, allowing for correlation between the earnings equation error term and the migration and participation equations. We would have liked to control for participation and, among participants, the self-selection of wage workers. However, such a model proved impossible to estimate given the data at hand, forcing us to forgo accounting for individuals' self-selection into wage employment.

The treatment effect model we estimate is given by equation (11.1), to which we add a second equation describing the probability of being a return migrant:

$$RM_i^* = \mathbf{Q}_i \boldsymbol{\xi} + u_i \quad (11.2)$$

where RM^* is a latent unobservable variable measuring the propensity to be a return migrant. Vector \mathbf{Q}_i includes X_i , together with instrumental variables.

Assuming normality of the error terms, the model can be estimated by maximum likelihood (MLE) or in two steps.

Proper identification of the full structural model requires valid instruments for the migration model. Co, Gang, and Yun (2000) use the locality in which an individual was born to instrument the probability of being a return migrant. De Coulon and Piracha (2005) employ the number of dependents in the household, the population of the town of residence, and religion. The number of dependents in the household can be a good instrument if a tighter budget constraint acts as a push factor of migration and has no direct impact on the earnings equation. Religion and the number of dependents in the household could not be used in this survey. In some countries (such as Senegal), religion does not offer enough variation in the sample, weakening its ability to explain migration. As for the number of dependents, it is observed only at the time of the survey; it could be very different when the migrant left or returned.

The locality in which an individual was born is a good instrument if there are spatial variations in the probability to migrate—as a result, for instance, of variations in the geographical environment or in attitudes toward migration. We cannot employ the locality in which an individual was born, however, because it cannot be precisely observed for all individuals. Instead, we use the proportion of return migrants in the neighborhood, excluding the worker's household, in the computation. This variable should capture the same kind of variations as the locality of birth. Our second instrument is the father's occupation when the worker was 15. Both instruments are expected to explain migration while having no direct impact on the earnings equation.

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. To validate our choice of instruments statistically, we examine the combined explanatory power of both variables in the instrumental equation and run overidentification tests. We also take advantage of the existence of two alternative estimators (two-step estimator and MLE) to estimate our model. The two estimators should give asymptotically equivalent results, provided the model is correctly specified. We thus consider as valid and reliable those estimates that are found statistically identical using one estimator or the other.

Table 11.6 presents the estimated coefficients of the return migrant variable estimated on the subsample of migrants returning from WAEMU countries, OECD countries, and other countries.

Controlling for self-selection in going abroad dramatically changes the estimations. Whatever the last country of residence or gender of the returnees, the OLS coefficient estimate is systematically lower than the MLE and the two-step estimates, although the difference is not always significant. This result suggests that migrants are negatively selected in their population of origin—in

Table 11.6 Coefficient Estimates for Return Migrants in Seven Cities in West Africa, 2001/02

Gender/coefficient	Return migrants from								
	WAEMU country			OECD country			Other country		
	OLS	MLE	Two-step estimator	OLS	MLE	Two-step estimator	OLS	MLE	Two-step estimator
<i>Men</i>									
Return migrant dummy coefficient	-0.0118 (0.0409)	0.0625 (0.140)	0.185 (0.220)	0.166** (0.0729)	0.384** (0.193)	0.396* (0.205)	-0.0631 (0.0587)	0.0625 (0.140)	0.185 (0.220)
Correlation coefficient		-0.059			-0.190			-0.0590	
<i>Women</i>									
Return migrant dummy coefficient	0.0750 (0.0550)	0.703*** (0.119)	0.244 (0.218)	0.309*** (0.106)	0.907*** (0.175)	0.744*** (0.238)	0.107 (0.0961)	0.0206 (0.414)	0.0783 (0.396)
Correlation coefficient		-0.540***			-0.572***			0.0684	
<i>All</i>									
Return migrant dummy coefficient	0.0359 (0.0332)	0.292** (0.143)	0.367** (0.163)	0.241*** (0.0608)	0.681*** (0.122)	0.751*** (0.161)	-0.00904 (0.0508)	0.0389 (0.150)	0.128 (0.239)
Correlation coefficient		-0.205*			-0.380***			-0.0353	

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 11.1 for details).

Note: Figures are for individuals 15 and older. Reference status is nonmigrant. Figures in parentheses are standard errors. WAEMU = West African Economic and Monetary Union, OECD = Organisation for Economic Co-operation and Development, OLS = ordinary least squares, MLE = maximum likelihood estimation.

* significant at the 10 percent level, ** significant at the 5 percent level, *** significant at the 1 percent level.

other words, they share unobserved characteristics that, everything else equal, lead them to earn less than nonmigrants. This interpretation is confirmed by the negative value of the correlation coefficient between the error terms of the earnings and migration equation (-0.38 , significant at the 1 percent level in the pooled sample). This result is unexpected, as it is generally assumed that migrants are positively selected. De Coulon and Piracha (2005) find a similar result in their study of Albania. The finding suggests that individuals who have been abroad may lack some desirable unobserved earnings capabilities. However, by going abroad they acquire other characteristics that the labor market rewards in the form of a wage premium.

Results obtained when male and female workers are pooled suggest that migrants returning from OECD and WAEMU countries earn more than nonmigrants. Splitting men and women into separate samples reveals, however, that the results for WAEMU countries are driven exclusively by women. However, as the MLE and the two-step estimates differ substantially, we suspect that our model is misspecified for this sample and choose not to retain this result. Results for migrants returning from OECD countries appear much more robust, as no significant difference is found between the MLE and the two-step estimates. As MLE is a more efficient estimator, we comment only on the results obtained using this method.

When men and women are pooled, the average wage premium for return migrants is estimated to be as high as 68 percent. When the sample is split, however, the premium for women (91 percent) is much higher than the estimate for men (38 percent).

Using the Hungarian Household Panel Survey, Co, Gang, and Yun (2000) obtain a similar result. They find that women returning from OECD countries earn a premium of 67 percent on the Hungarian labor market. According to the authors, skills acquired abroad may explain such a large premium. During their stay abroad, women learn how Western economies operate. This knowledge is particularly valuable in a country undergoing transition toward a market economy, as Hungary was at the time the data were collected.

A similar explanation can be found here. As differences in the level of development of WAEMU and OECD countries are very large, one would expect workers with Western work experience to have acquired skills that are very valuable on African labor markets. This experience could explain the large wage premium received by return migrants.

Why women receive much larger premiums than men is unclear. Measurement errors in the experience variable could be a possible explanation. Measures of women's professional experience are particularly prone to errors because of the discontinuity of their labor market participation. If nonmigrant women have given birth to a larger number of children (and therefore have had more career interruptions) than women who spent some time abroad, potential

experience as a proxy for actual experience is likely to be upwardly biased for nonmigrant women. The large size of the return migrant coefficient could partly capture this bias.

All these results are conditioned on the validity of the instruments. In tables 11.7 and 11.8, we present the values of the Chi-square test for the father's activity dummies and the proportion of return migrants in the neighborhood in the migration equation, together with the values of these statistics when these variables are added in the earnings equation. The father's activity variables are highly significant in the migration equation, except for the regression on women migrants returning from OECD countries. For this sample, the model is identified only by the proportion of return migrants in the neighborhood.

Father's activity variables and the proportion of migrants in the neighborhood are never significant when included among the list of regressors in the earnings equation or when men and women are split into separate samples (table 11.8). Using the pooled sample, the father's activity variables are jointly

Table 11.7 Test of Instrumental Variables in Migration Equation

Gender/variable	Return migrants from					
	WAEMU country		OECD country		Other countries	
	MLE	Two-step estimator	MLE	Two-step estimator	MLE	Two-step estimator
<i>Men</i>						
Father's activity	25.0 (0.0003)	24.8 (0.0004)	26.6 (0.0002)	28.0 (0.0001)	16.7 (0.0103)	16.7 (0.0106)
Percent return migrants in neighborhood	3.15 (0.076)	3.02 (0.0823)	10.3 (0.0013)	9.72 (0.0018)	5.49 (0.0191)	5.62 (0.0178)
<i>Women</i>						
Father's activity	23.4 (0.0007)	26.2 (0.0002)	6.16 (0.4057)	6.96 (0.3246)	14.6 (0.0235)	14.6 (0.0235)
Percent return migrants in neighborhood	14.2 (0.0002)	14.1 (0.0002)	17.3 (0.0000)	11.3 (0.0008)	0.31 (0.5780)	0.42 (0.5185)
<i>Full sample</i>						
Father's activity	54.5 (0.0000)	51.6 (0.0000)	23.8 (0.0006)	24.8 (0.0004)	24.3 (0.0005)	24.3 (0.0005)
Percent return migrants in neighborhood	14.23 (0.0002)	13.1 (0.0003)	23.2 (0.0000)	19.3 (0.0000)	2.68 (0.1017)	2.76 (0.0964)

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 11.1 for details).

Note: Figures are Chi-square values for individuals 15 and older. Figures in parentheses are *p*-values. MLE = maximum likelihood estimation. WAEMU = West African Economic and Monetary Union, OECD = Organisation for Economic Co-operation and Development.

Table 11.8 Overidentification Test of Instrumental Variables in Migration Equation

Gender/variable	Return migrants from		
	WAEMU country	OECD country	Other countries
<i>Men</i>			
Father's activity	7.43 (0.2826)	8.38 (0.2115)	8.37 (0.2125)
Percent return migrants in neighborhood	1.32 (0.2502)	0.53 (0.4674)	0.52 (0.5692)
<i>Women</i>			
Father's activity	6.82 (0.3376)	4.56 (0.6010)	6.35 (0.3854)
Percent return migrants in neighborhood	1.23 (0.2666)	0.03 (0.8521)	0.28 (0.5953)
<i>Full sample</i>			
Father's activity	14.6 (0.0234)	15.6 (0.0158)	16.8 (0.0102)
Percent return migrants in neighborhood	1.68 (0.1953)	0.97 (0.3247)	0.51 (0.4747)

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 11.1 for details).

Note: Figures are Chi-square values for individuals 15 and older. Figures in parentheses are *p*-values.

WAEMU = West African Economic and Monetary Union, OECD = Organisation for Economic Co-operation and Development.

significant in the earnings equation, but the proportion of return migrants in the neighborhood remains insignificant, meaning the model is still identified. Moreover, the coefficient of the return migrant dummy does not change when the father's variables are added to the earnings regression. We are thus confident that our results do not suffer from omitted variable bias.

Regarding the other coefficient estimates, both the OLS and MLE coefficients of human capital variables in the earnings equations are in line with expectations: language skills, education, and experience all positively contribute to earnings. Men earn 25 percent more than women in the pooled sample. People working in the public sector earn 48 percent and people working in the private formal sector 42 percent more than people working in the informal sector. The returns to language skills and education are much higher for women than for men. This difference could be driven by workers' unobserved heterogeneity. If workers self-select into education and selection occurs on unobserved characteristics, then returns to education estimates could be upwardly biased if unobserved heterogeneity is positively correlated with hourly earnings. As women are less likely than men to obtain a high level of education, then everything else equal, women are more self-selected than men, and larger biases in the returns to education can be expected.

Experience Abroad and Profits

The production technology of a microenterprise is written as $Y = F(K, L)$ where Y is the value added of the firm, K is the capital stock, and L is labor.

Phase 2 of the 1-2-3 survey collects very detailed information on production levels, sales, and purchases of inputs by microenterprises in the past 12 months, as well as information on expenses such as rent for buildings; wages and salaries; water, gas, electricity, and fuel; telephone; traveling expenses and insurance fees; maintenance and general repairs; rent for machinery and equipment; taxes; and interest. The survey records detailed information on the seasonal patterns of activity over a one-year period and on the timing of transactions, in order to account for potential lags between the time inputs are purchased and sold.

Using these data, we compute a measure of value-added that we then regress on capital and labor inputs as well as on a vector of firm owner's characteristics. It is very difficult to obtain accurate data on value-added and profits of microenterprises in developing countries, because most of them do not keep financial records. One has to rely on recall data, which generally lack precision given the fungibility of money and goods between the business and the household. The Phase 2 questionnaire is designed to obtain more precise information, but the gain over less detailed questionnaires has yet to be proved (for a detailed discussion, see De Mel, McKenzie, and Woodruff 2009).

To obtain a reliable estimate of K , 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). For labor, we use the total number of hours of work performed by the business owner and his or her employees in the past 12 months.⁸

Assuming a Cobb-Douglas production function, the technology of a microenterprise can be written as

$$\log Y = \log A + \alpha \log L + \beta \log K + u, \quad (11.3)$$

where A is total factor productivity, α and β are output elasticities with respect to labor and capital, and u is an error term. This equation can be estimated using standard linear regression, using microenterprise data on value-added, defined as the annual value of production minus the cost of all intermediate inputs, capital, and the number of hours of work. In the regressions, additional variables are included to control for the business owner's characteristics (level of education, age, potential experience, and so forth); sector of activity; and macroeconomic environment (through country dummies). A dummy variable indicating whether the firm owner is a return migrant is included to test whether experience abroad makes individuals more productive.

In order to account for the self-selection of return migrants, we simultaneously estimate equation (11.3) with the return migrant equation (11.2) using

maximum likelihood on the sample of microenterprises. As for the earnings equation, migration is instrumented by the percentage of households with return migrants in the area of residence. We run regressions for each of the three groups of return migrants (migrants returning from a WAEMU country, migrants returning from an OECD country, and migrants returning from elsewhere).

Table 11.9 displays estimation results using the Cobb-Douglas production function specification defined in equation (11.3) on pooled microenterprise data. The coefficient of the dummy variable indicating whether the firm owner is a return migrant is positive and significantly different from zero in both specifications. This result suggests that experience abroad gives microentrepreneurs a productive advantage. This advantage could stem either from enhanced entrepreneurial skills or from specific knowledge acquired abroad. The OLS coefficient estimate in the earnings equation is strongly biased downward, however, because of a negative correlation between unobserved characteristics in the earnings and migration equations. The elasticity of value-added is 0.17 with respect to capital and 0.47 with respect to labor. The higher the average level of education of employees, the higher the output, all else equal.

Conclusion

What are the consequences of international migration for home countries? This question attracted much interest in the 1970s, when economists such as Jadhav Bhagwati viewed the out-migration of educated migrants as a loss of human capital for countries of origin. Even the migration of educated individuals could benefit the origin country, however, if return migrants are sufficiently numerous and bring back enough capital, 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.

This chapter examines the urban labor market performance of return migrants in seven French-speaking cities of West Africa. The review of the literature suggests three effects. First, return migrants may have higher levels of human capital, financial capital, or both. Second, the education they received or the work experience they gained in destination countries may have allowed them to gain some specific knowledge that is valued in the labor market of their home country. Third, return migrants could suffer from a loss of social capital while they lived abroad.

Results from our statistical and econometric analyses show that except for age and gender, return migrants from WAEMU countries have individual and labor participation characteristics that are very similar to those of

Table 11.9 Production Function Estimates for Return Migrants in Seven Cities in West Africa, 2001/02

Variable	Migrants returning from								
	WAEMU country			OECD country			Other countries		
	OLS	MLE	Two-step estimator	OLS	MLE	Two-step estimator	OLS	MLE	Two-step estimator
Log(capital)	0.171 (12.82)***	0.172 (12.92)***	0.171 (12.91)***	0.162 (12.10)***	0.162 (12.00)***	0.162 (11.98)***	0.160 (12.04)***	0.161 (12.04)***	0.161 (12.04)***
Dummy = 1 if no capital	0.276 (3.85)***	0.279 (3.91)***	0.278 (3.90)***	0.257 (3.57)***	0.258 (3.55)***	0.257 (3.54)***	0.250 (3.51)***	0.259 (3.59)***	0.259 (3.59)***
Log(labor)	0.407 (20.21)***	0.407 (20.26)***	0.407 (20.27)***	0.418 (20.49)***	0.414 (20.20)***	0.413 (20.20)***	0.409 (20.40)***	0.400 (19.88)***	0.400 (19.88)***
Return migrant	-0.007 (0.94)	0.136 (0.52)	0.643 (1.10)	0.605 (2.58)**	1.094 (2.32)**	2.034 (2.22)**	0.283 (2.36)**	0.293 (0.81)	0.277 (0.60)
Percent return migrants in neighborhood	0.292 (0.88)			0.427 (0.93)			0.411 (0.93)		
Constant	2.488 (13.21)***	1.496 (9.37)***	1.469 (9.05)***	3.599 (10.36)***	1.486 (9.16)***	1.497 (9.20)***	3.634 (10.15)***	1.622 (8.88)***	1.622 (8.88)***
Percent return migrants in neighborhood		2.743 (6.18)***	2.727 (6.16)***		2.656 (2.68)***	2.573 (2.61)***		3.034 (6.13)***	3.034 (6.13)***
Rho		-0.047 (0.55)			-0.155 (1.23)			0.008 (0.06)	
Sigma		0.333 (34.60)***			0.327 (33.22)***			0.329 (33.97)***	
Mills ratio			-0.309 (1.11)			-0.608 (1.64)			0.018 (0.08)
Number of observations	5,438	5,438	5,438	5,214	5,214	5,214	5,323	5,323	5,323

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 11.1 for details).

Note: Figures are for individuals 15 and older. Figures in parentheses are *p*-values. WAEMU = West African Economic and Monetary Union, OECD = Organisation for Economic Co-operation and Development, OLS = ordinary least squares, MLE = maximum likelihood estimation.

nonmigrants. In contrast, return migrants from OECD countries are significantly better educated, more likely to be active in the labor force, and wealthier than nonmigrants. The participation of return migrants from OECD countries in the formal sector (both public and private) is much higher than that of nonmigrants. However, after controlling for education, the advantage of return migrants vanishes, actually becoming negative in some countries. Experience abroad results in a substantial wage premium on average, but the level of the premium ranges widely across cities (it is high in Cotonou and Lomé and low in Bamako). Experience abroad is also associated with a productive advantage for entrepreneurs.

International migration experience can have important consequences for labor market performance upon return to the origin country, particularly if the host country belongs to the OECD. These potential benefits notwithstanding, the small share of return migrants in WAEMU countries suggests that return migration is likely to have only a moderate effect on development, especially as local economic conditions and investment opportunities remain weak.

Notes

1. For instance, labor migration from Southern to Central Europe in the 1950s and 1970s was 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, p. 2). Glytsos (1988) reports that of the 1 million Greeks who migrated to the Federal Republic of Germany between 1960 and 1984, 85 percent returned home. Dustmann and Weiss (2007) find that only about 68 percent of females and 60 percent of males admitted into Britain between 1992 and 1994 were still in the country five years later. For the United States, Jasso and Rosenzweig (1982) report that of the 15.7 million people who immigrated between 1908 and 1957, about 4.8 million returned home.
2. The REMUAO countries are Burkina Faso, Côte d’Ivoire, Guinea, Mali, Mauritania, Niger, and Senegal.
3. Although Abidjan and Cotonou are not administrative capitals, we refer to them as capitals because they are the most important economic centers in their countries (Cotonou is also the seat of government).
4. For disaggregated descriptive statistics by city, see De Vreyer, Gubert, and Robilliard (2009).
5. Unfortunately, the surveys do not provide information on age at the time of migration. It is thus impossible to favor one explanation or the other.
6. Entrepreneurs are people who declare that they hire employees, paid or unpaid. This category does not include self-employed workers without employees.
7. Phase 2 of the 1-2-3 surveys covers only microenterprises in the informal sector. Formal sector microenterprises (that is, microenterprises with a registration number or bookkeeping) are excluded from the sample.

8. The Phase 2 survey provides data on the number of workers employed by each firm; the total number of hours worked by each worker during the month preceding the interview; and worker characteristics, including gender, age, education, relationship to the business owner, and remuneration.

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AFRICA DEVELOPMENT FORUM



Urban Labor Markets in Sub-Saharan Africa

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