Chapter 4

What impacts does migration have on development in Costa Rica?

Despite being a country of net immigration, Costa Rica has also experienced significant emigration. These inflows and outflows are likely to have an impact on Costa Rica's economy and society. Yet the links among the various dimensions of migration and development are not well explored. This chapter uses data from the IPPMD surveys to untangle some of the complex links between emigration, remittances, return migration and immigration and five key development sectors: the labour market, agriculture, education, investment and financial services, and social protection and health.

Costa Rica is characterised by both immigration and emigration. A stable political climate, strong growth performance and rising living standards attract significant numbers of people, particularly from other countries in the region. Immigrants, mainly from neighbouring Nicaragua, constitute close to 9% of the population and an important share of the labour force, in particular in low-skilled occupations. Apart from the intraregional migration, extra-regional migration is also taking place, especially with the United States and involving both immigration and emigration. These migration flows are likely to have an important influence on Costa Rican economy and society, but the precise ways in which these impacts are felt have not been explored in detail to date.

This chapter analyses how migration affects development in Costa Rica in five policy sectors: the labour market, agriculture, education, investment and financial services, and social protection and health. The chapter presents findings from data analysis exploring the impact of four dimensions of migration: emigration, remittances, return migration and immigration.

Migration and the labour market

Since the economic crisis in 2009, Costa Rica has experienced labour market challenges including high unemployment, especially among young people, and a rising informal sector (OECD, 2016). According to the Ministry of Labour and Social Security (MTSS), the labour force participation rate in Costa Rica was 62% in the fourth quarter of 2014, remaining almost the same as in the previous year. The gender gap in the labour force participation is significant: 69% for men compared to 49% for women. Labour force participation is also higher in urban (64%) than in rural areas (57%). The employment rate was 56%, lower than the previous year. This decrease was mainly explained by a decrease in the female employment rate of 3.4 points, falling to 42.8%, while the male employment rate remained unchanged at 69.1%. Amongst the employed population, 70% work in services, 17.3% in industry and 12.7% in agriculture (MTSS, 2015).

The national unemployment rate was 9.7% in 2014, and higher for women than men (11.8% vs. 8.7%). It was also slightly higher in rural than urban areas (10.2% vs. 9.5%), and increased by 1.4 percentage points over the course of the year. National underemployment is estimated to be 14.2% (INEC, 2014).

The IPPMD survey data mostly echo these national patterns. For instance, the labour force participation rate among the survey sample (people aged 15-64) was 59%, and also higher in urban areas (64%) than in rural areas (51%).

The discrepancy between men and women's participation in the labour force is even larger than in the national statistics: 80% for men and 38% for women. The employment rate is 54%: 74% for men and 35% for women, and is higher in urban areas (58%) than in rural areas (48%). The unemployment rate in the IPPMD sample is 9%: 8% for men and 10% for women. Around 41% of the working population (aged 15 to 64) reported not being engaged in paid employment and not looking for work.

Return migration can boost self-employment

Return migrants often bring with them financial, human and social capital accumulated abroad. Savings may be invested in a business or other types of own-account work, for example. Growing evidence suggests that return migrants are more prone than non-migrants to engage in entrepreneurial activities or to be self-employed (De Vreyer, Gubert and Robilliard, 2010; Piracha and Vadean, 2009). The IPPMD data show that Costa Rican return migrants are more likely to be self-employed than non-migrants. Among the working age population (excluding immigrants), 28% of return migrants are self-employed, compared to only 10% of individuals without migration experience. This pattern is in line with the literature, which shows that non-migrants living in households with return migrants are more likely to be self-employed (Giulietti, Wahba and Zimmermann, 2013; Démurger and Xu, 2011). In the IPPMD sample, the share of self-employed among the working population is higher in households with a return migrant than in households without a return migrant. The difference is larger and statistically significant for men (Figure 4.1).

The link between return migration and self-employment was analysed further using a regression framework controlling for other factors that may affect the probability of being self-employed (Box 4.1). The results suggest that being a return migrant is associated with a higher probability of being self-employed (Table 4.1). Disaggregating the effects by gender shows that the positive association between self-employment and return migration is true only for men. The results further show that having a return migrant in the household is also positively associated with being self-employed, especially for male members of the household. This indicates that non-migrant household members, in particular men, may share in and benefit from savings accumulated by migrants returning to their household.

Immigrants constitute an important source of labour

Costa Rica is a net immigration country (Chapter 2). Despite the commonly perceived negative impacts of immigration on native populations' employment and wages, research on a range of countries generally finds little impact from immigration (Basso and Peri, 2015; Dustmann, Frattini and Preston, 2013; Facchini et al., 2013) other than a slightly negative impact on wage levels among

low-skilled native workers (Camarota, 1998; Orrenius and Zavodny, 2003). However, most of the literature analysing labour market impacts of immigration are based on studies of OECD countries. The impact of immigration on the labour market may differ in developing countries because of the structural differences as well as the different characteristics of immigrants (Böhme and Kups, 2017). The literature on Costa Rica finds little evidence that Nicaraguan immigration affects the wage levels of Costa Rican workers (Gindling, 2008).

Figure 4.1. **Self-employment is higher among individuals in return migrant households**
Employment types among employed people, working age population (%)
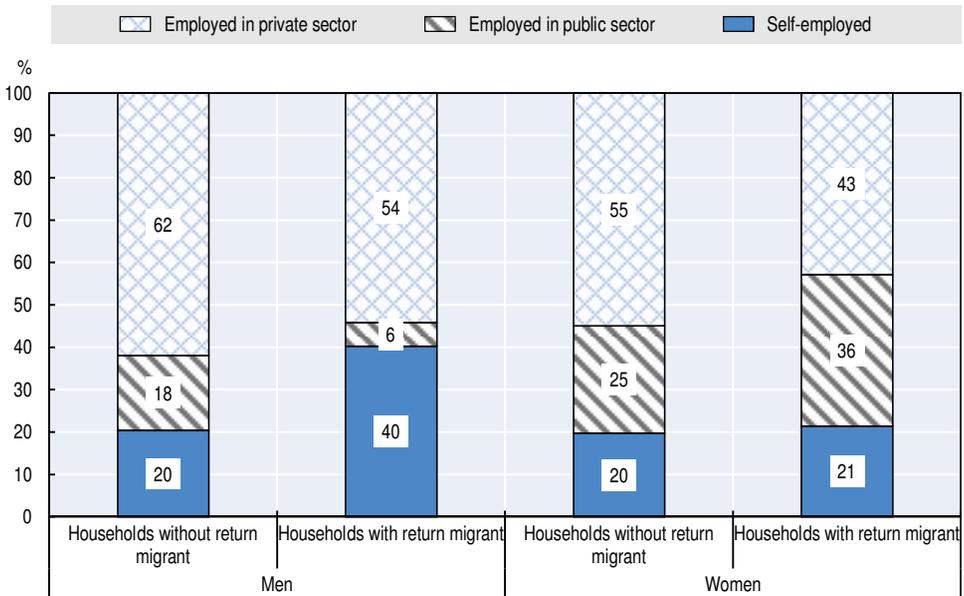
Note: The difference between households with and without return migrants is statistically significant for men but not for women (using a chi-squared test).
Source: Authors' own work based on IPPMD data.

Box 4.1. **The links between return migration and self-employment**

To explore further how return migration is associated with the employment types of household members, two probit models were used in the following form:

$$\text{Prob(self\_employed}_i) = \beta_0 + \beta_1 rt\_mig_i + \gamma_1 controls_i + \gamma_2 controls_{hh} + \delta_r + \varepsilon_i \qquad (1)$$

$$\text{Prob(self\_employed}_i) = \beta_0 + \beta_1 rt\_mig_{hh} + \gamma_1 controls_i + \gamma_2 controls_{hh} + \delta_r + \varepsilon_i \qquad (2)$$

where self$\_$employed$_i$ represents whether an employed individual i is self-employed. rt_mig_i (model 1) denotes whether an individual i is return migrant;

Box 4.1. **The links between return migration and self-employment** *(cont.)*

rt_mig_{hh} (model 2) signifies that a household has at least one return migrant; $controls_i$ stands for a set of control variables at the individual level; and $controls_{hh}$ for household level controls.[a] δ_r implies regional fixed effects and ε_i is the randomly distributed error term. Table 4.1 shows the computed marginal effects.

Table 4.1. **Return migration seems to boost self-employment, especially for men**

Dependent variable: An individual is self-employed (binary variable).
Main variables of interest: The individual belongs to a household with at least one return migrant / The individual is return migrant
Type of model: Probit
Sample: Employed people of working age (15-64).

| Variables of interest	All	Men	Women
Individual is a return migrant	0.076**	0.082**	0.005
	(0.034)	(0.039)	(0.087)
Number of observations	2 174	1 442	732
Household has at least a return migrant	0.062**	0.069**	0.019
	(0.028)	(0.032)	(0.057)
Number of observations	1 932	1 261	671

Note: Results that are statistically significant are indicated as follows: ***: 99%, **: 95%, *: 90%. Standard errors in parentheses.

a. Control variables include individuals' age, sex and education level, their households' size and its squared value, the dependency ratio, household wealth estimated by an indicator and whether it is in a rural or urban location.

According to the IPPMD data, about 87% of all immigrants surveyed in Costa Rica are of working age (15 to 64), compared to 62% of the native population. Immigrants are also more likely to be working than native-born people. Among the working age population, the share of employed and self-employed people is higher for immigrants (60%) than for native people (51%) (Figure 4.2). Likewise, the share of the economically non-active population (those who are not working and not looking for jobs) is higher among native-born people (43%) than immigrants (36%).

The skills brought by immigrants to the country can benefit specific sectors. Immigrants constitute 28% of the total labour force in the IPPMD sample. Comparing the share of immigrants in the total number of workers in four sectors – agriculture, construction, education and health – shows that immigrants are mainly concentrated in the construction and agricultural sectors (Figure 4.3, left-hand chart). This reflects the skills level of immigrants in Costa Rica, who are more likely than native-born workers to be low skilled (Figure 4.3, right-hand chart).

Figure 4.2. **Immigrant workers are largely low skilled and work in construction and agriculture**
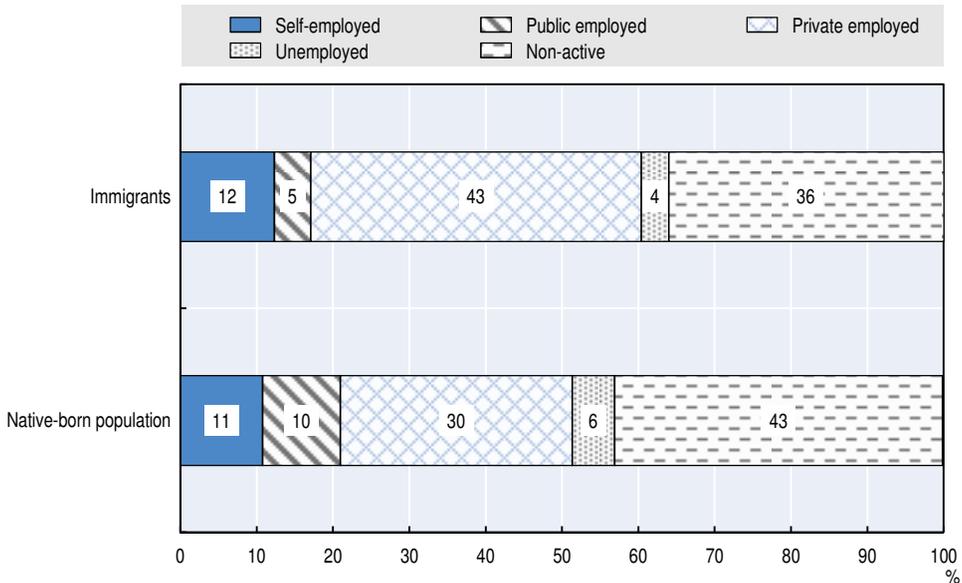
Note: The skills level of occupations has been categorised using the International Standard Classification of Occupations (ISCO) provided by the International Labour Organization (ILO, 2012). Skills level 1: occupations which involve simple and routine physical or manual tasks (includes elementary occupations and some armed forces occupations). Skills level 2: clerical support workers; services and sales workers; skilled agricultural, forestry and fishery workers; craft and related trade workers; plan and machine operators and assemblers. Skills level 3: technicians and associate professionals and hospitality, retail and other services managers. Skills level 4: Other types of managers and professionals.
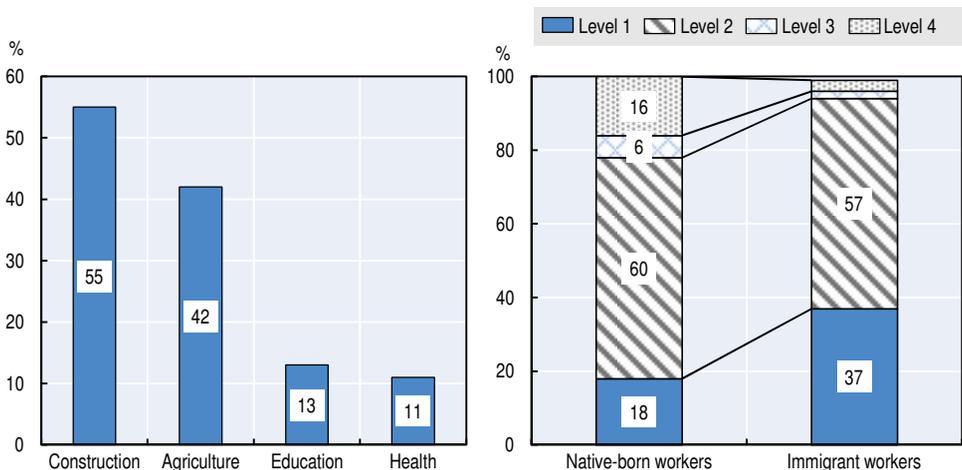
Source: Authors' own work based on IPPMD data.

Figure 4.3. **A higher share of immigrants are working than native-born people**

Employment status among native-born population and immigrants, working age population (%)

Source: Authors' own work based on IPPMD data.

Migration and agriculture

Since the 1980s, the Costa Rican economy has evolved from being largely rural and based on agriculture to one involving high value-added industries linked into global value chains (OECD, 2016). Today, agriculture plays a relatively small role in Costa Rica in terms of its contribution to gross domestic product (5.5% of GDP of value-added in 2015), compared with the partner countries of the IPPMD project (World Bank, 2017a, OECD, 2017a). It also employs a small share of the country's labour force; in 2013, 13% of the employed population worked in the agricultural sector (FAO, 2016a), the lowest share of all the IPPMD partner countries.

Despite its small size, the sector has experienced important transformational growth since the 1980s. The removal of tariffs and other barriers to imports since the 1990s induced a shift in land use, from crop production concentrated on the domestic market to export-friendly crops for which the land is better suited. The volume of exports since then has increased by a factor of 18 and exports have diversified away from the previously large concentration on coffee, bananas and sugar, to more than 3 000 differentiated goods and services. The removal of tariffs and other barriers to imports significantly boosted agricultural productivity growth in Costa Rica (Trejos, 2013). Today, productivity in agriculture is still increasing, but at a slower pace. A per capita agricultural production index set at 100 in 2004-06, rose to 108 in 2013, putting Costa Rica somewhere in the middle of the pack amongst IPPMD partner countries (FAO, 2016b). In terms of absolute production, Costa Rica's agricultural production was valued at USD 2.8 billion in constant USD 2004-06, somewhere around the average for the IPPMD countries (FAO, 2016c). As agrarian farming has shifted and diversified in Costa Rica, livestock rearing has also gained a larger role. Recent data suggest that more than 45 000 livestock farms in the country employ at least 12% of the Costa Rican labour force and occupy over 36% of the country's territory (UNFCCC, 2015).

Reflecting its minor role in the country's economy, only about one-eighth of the IPPMD households are engaged in agriculture: 271 of the 2 236 households surveyed (12%).[1] Of these households, 99 (37%) cultivate land exclusively, 46 (17%) raise livestock exclusively and 126 (46%) carry out both activities.

Costa Rica aims to continue modernising its agricultural and rural sectors (MPNPE, 2014); migration can be a vector to help reach that objective. A recent report suggests that investment in agriculture in Costa Rica is a priority in order to boost productivity and make the necessary adjustments required to deal with its vulnerable exposure to climate change (OECD, 2017b). Investment can come from remittances (Böhme, 2013; Gonzalez-Velosa, 2011; Mendola, 2008; Lucas, 1987; Taylor and Wouterse, 2008; Tsegai, 2004); while return migrants and immigrants can also invest their social, human and financial capital. However,

agricultural households may choose to use this capital to diversify within the sector or move out of it altogether into other more lucrative sectors (Carletto et al., 2010; FAO and IFAD, 2008). This section examines the agricultural households in the IPPMD sample to see whether return migration and immigration are contributing to investment, diversification and expansion in the agricultural sector and the rural sector in general.

Return migration and immigration have little impact on agricultural households' activities

Return migrants and immigrants bring with them valuable social, financial and human capital that can be allocated to new activities (Wahba, 2015; OECD, 2014). This capital can help to diversify the agricultural sector by developing certain activities, or the rural sector in general, by extending it to outside activities. However, there is very little research on this theme, particularly for the rural sector.

The IPPMD survey collected data on the type of activity carried out by the household (agrarian farming and livestock rearing) and whether or not the household headed a non-agricultural business. Comparing households with or without return migrants shows little difference between the two groups in terms of agricultural activities (Figure 4.4, first three panels). However, the fourth panel suggests that households with return migrants are more likely to run a non-agricultural business than households without return migrants (32% vs. 20%). It should be noted however, that the sample size is particularly small for this analysis, as there were only 13 agricultural households with a return migrant that also happened to have a non-agricultural business (Figure 4.4). There is therefore little evidence that return migration is bringing investment into agriculture and only a little evidence that it is helping households diversify or move out of it.

A similar comparison for immigrant and non-immigrant households did not yield any statistically significant differences (not shown). Farming households containing immigrants were slightly more likely than non-immigrant households to do arable farming exclusively (41% vs. 35%), but less likely to rear livestock (13% vs. 18%). However, neither of these differences were large enough to be statistically significant. The data for immigrant and non-immigrant farming households were very similar when it comes to combined arable and livestock farming (46% vs. 47% of households) and operating a non-agricultural business (both at 22%).

Regression analysis explored these links more precisely was used to control for several factors that may also affect the type of activities performed by the household (Box 4.2). The findings, which accounts for both return migration and immigration, confirms that both types of migration have very little impact on the type of agricultural activities undertaken by farming households (Table 4.2).

This includes the link between return migration and non-agricultural business ownership, which yielded a positive link in Figure 4.4. It seems that in controlling for other factors, wealth turns out to be the most important determinant in owning a business, rather than specifically having a return migrant in the household, although there could be a link between having a return migrant and household wealth. However, caution is required given the small sample of agricultural households in the IPPMD project sample.

Figure 4.4. **Agricultural households with return migrants are slightly more likely to have a non-agricultural business**

Types of household activity (%), by whether the household has a return migrant or not
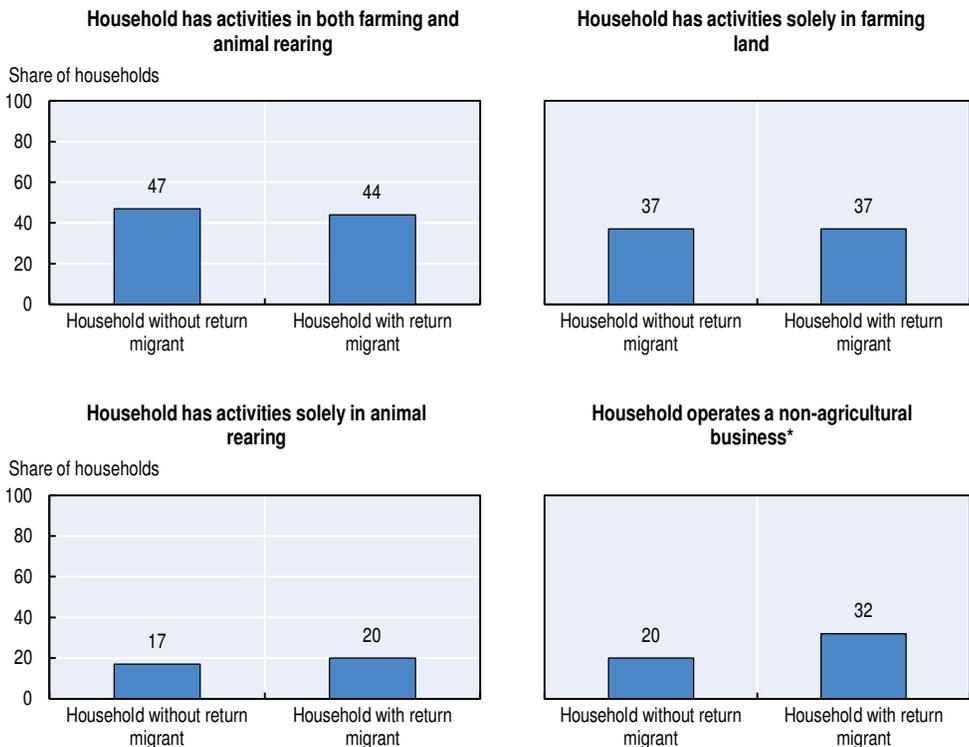
Note: Statistical significance is tested using a chi-squared test. It is indicated as follows: ***: 99%, **: 95%, *: 90%.
Source: Authors' own work based on IPPMD data.

The findings may nevertheless suggest that Costa Rica is missing an opportunity to harness the social, financial and human capital brought in by return migrants and immigrants. In striving to lead the agricultural sector on its relatively successful path towards high growth, modernisation and diversification, Costa Rica may want to look more closely at the investment potential embodied in these migrant groups.

Box 4.2. **The links between migration and agricultural activities**

To explore the probability that an agricultural household has invested in an activity, the following regression model was estimated:

$$\text{Prob}(agri\_activity_{hh}) = \beta_0 + \beta_1 return_{hh} + \beta_2 immig_{hh} + \gamma controls_{hh} + \delta_r + \varepsilon_{hh} \qquad (1)$$

where the unit of observation is the household hh and the dependent binary variable $agri\_activity_{hh}$ in equation (1) represents the probability that the agricultural household engaged in a particular activity, taking on a value of 1 if the household did so and 0 otherwise; $return_{hh}$ represents the fact that the household has at least one return migrant; $immig_{hh}$ represents the fact that the household has at least one immigrant; $control_{hh}$ stands for a set of household-level regressors;[a] while δ_r represents regional-level fixed effects. Standard errors, ε_{hh}, are robust to heteroskedasticity. The variable $agri\_activity_{hh}$ was also replaced in a subsequent model by whether the household is running a non-agricultural business.

Results are presented in Table 4.2. Column (1) presents results for whether the household combines both arable farming and livestock; column (2) for whether the household solely farms the land; column (3) for whether the household solely rears livestock; and column (4) for whether the household operates a non-agricultural business. Results also present coefficients for two variables of interest: whether the household has a return migrant (top rows); and whether the household has an immigrant (bottom rows).

Table 4.2. **Migration has little impact on the types of activities carried out in agricultural households**

Dependent variable: Type of activity ran by the household
Main variables of interest: Household has a return migrant\household has an immigrant
Type of model: Probit
Sample: Agricultural households

Variables of interest	Dependent variables			
	(1) Household has activities in both farming and animal rearing	(2) Household has activities solely in farming land	(3) Household has activities solely in animal rearing	(4) Household operates a non-agricultural business
Household has a return migrant	-0.036 (0.089)	-0.002 (0.087)	0.041 (0.073)	0.052 (0.073)
Household has an immigrant	-0.013 (0.078)	0.088 (0.076)	-0.080 (0.054)	0.081 (0.071)
Number of observations	271	271	271	271

Note: Statistical significance is indicated as follows: ***: 99%, **: 95%, *: 90%. Coefficients reflect marginal effects. Standard errors are in parentheses and robust to heteroskedasticity.

a. Control variables include the household's size, its dependency ratio (number of children 0-15 and elderly 65+ divided by the total of other members), the male-to-female adult ratio, its wealth estimated by an indicator (Chapter 3) and whether it is in a rural or urban region. A fixed-effect control for the household's administrative region was not included due to the low sample size.

Migration and education

Migration and education are closely linked, and migration can play an important role in enhancing educational outcomes at both national and individual level. Education is an important driver of migration, either through migrants acquiring education abroad, or through remittances sent home to finance the schooling of members left behind in the country of origin. Education acquired abroad can also change the skills composition of the population in a country when migrants return, and access to education is crucial for immigrant integration.

Costa Rica takes the lead in Latin America in its access to primary education, which is close to universal (96% in 2015; UNESCO, n.d.). Education spending as share of GDP is at 6.9% of GDP, which is high both for OECD countries and countries in the region (OECD, 2016). The teacher-to-student ratio is the second highest in the IPPMD sample after Georgia, at 13 students per teacher (OECD, 2017a). However, there are still gaps in education outcomes and only about 40% of the workforce has completed secondary education (OECD, 2016).

Immigrants in Costa Rica tend to be less educated than the native-born population (World Bank, 2015). The IPPMD data confirm this pattern. The share of individuals without any form of formal education is 15% among the native-born adult population, compared to 34% among immigrants. Only 9% of immigrants have post-secondary education, compared to 18% of native-born adults (Figure 4.5).

Figure 4.5. **Immigrants have lower levels of education than native-born individuals**
Adult (aged 15 years and above) education level
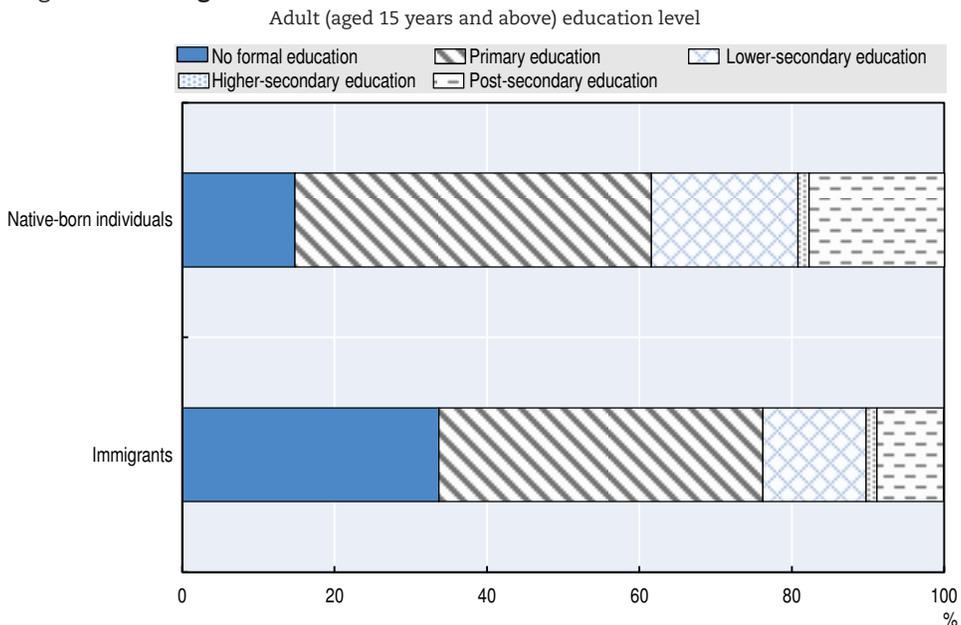
Note: The samples include all adults 15 years old and above.
Source: Authors' own work based on IPPMD data.

Immigrant youth are less likely to attend school

Research has shown that remittances can ease financial constraints and allow households to invest in human capital (see for example Cox Edwards and Ureta, 2003; Yang, 2008). Evidence from various Latin American countries shows that children in remittance-receiving households tend to be less likely to drop out of school (Acosta et al., 2008; Hanson and Woodruff, 2003). On the other hand, international migrants often face significant challenges in accessing and succeeding in education compared to their native-born peers (Bartlett, 2015).

What do the IPPMD data tell us about these links? The descriptive data show that among children of primary school age (6-14 years) in the sample, school attendance is almost universal, at 97%. Among young people in the age ranges 15-17 and 18-22, the corresponding shares are 84% and 41% respectively. Young people in households receiving remittances are more likely to attend school (at 93% and 58% respectively in the age groups 15-17 and 18-22) than in households not receiving remittances (at 84% and 40% respectively).[2]

Young people in immigrant households are significantly less likely to attend school than those in non-immigrant households: 79% of youth in the age group 15-17 living in an immigrant household attend school, compared to 89% of youth in households without immigrants (Figure 4.6). The difference is larger in the age group 18-22: 32% compared to 47%. Young people born in another country, and by definition therefore immigrants themselves, are less likely to attend school than their native-born peers. In the age group 15-17, 69% of immigrant youth attend school, compared to 87 of native-born youth. The difference is larger in the older youth group (18-22), at 25% vs. 45% respectively.

More in-depth analysis of the link between migration and school attendance, controlling for household characteristics, is shown in Box 4.3. The results (Table 4.3) show a negative but weak link between youth living in a household with immigrants and school attendance in both age groups (15-17 years and 18-22 years), though the relationship is not statistically significant. The regression results confirm the negative link between immigrant youth and school attendance shown in Figure 4.6. Young people in both age groups who were born abroad are less likely to attend school than their native-born peers, and the difference is statistically significant for the 15-17 age group.

Failure to provide education to immigrant children and children living in immigrant households may negatively affect their integration and future employability, but also constitute a lost opportunity for the country when it comes to long-term human capital accumulation.

Figure 4.6. **Immigrant youth and youth in immigrant households are less likely to attend school than their native-born peers**

Share of children and youth attending school (%), by immigration status
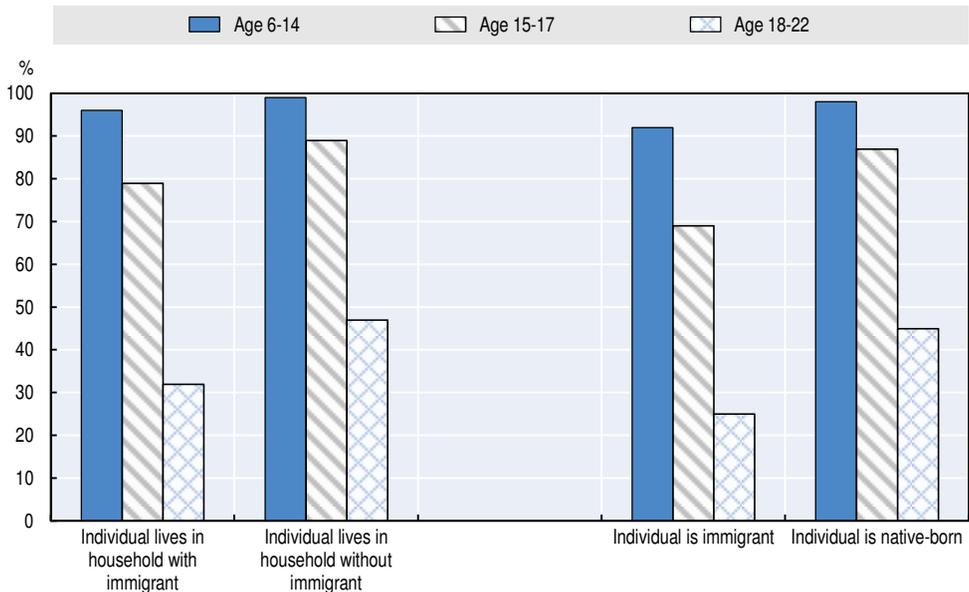
Note: Households with an immigrant include households with at least one adult immigrant, regardless of whether the children and youth in the household are immigrants or not.

Source: Authors' own work based on IPPMD data.

Box 4.3. **The links between migration and school attendance**

A regression framework was developed to analyse the link between immigration and school attendance using the following equation:

$$Prob(education_i) = \beta_0 + \beta_1 immig_{hh} + \gamma controls_{hh} + \gamma controls_i + \delta_r + \varepsilon_i \qquad (1)$$

$$Prob(education_i) = \beta_0 + \beta_1 immig_i + \gamma controls_{hh} + \gamma controls_i + \delta_r + \varepsilon_i \qquad (2)$$

where $Prob(education_i)$ represents a binary variable for whether an individual is attending education or not. $immig_{hh}$ (equation 1) takes on value "1" if the child/youth lives in a household with at least one immigrant and "0" if not, while $immig_i$ (equation 2) takes on value "1" if the child/youth is an immigrant and "0" if not. $controls_{hh}$ and $controls_i$ are two sets of observed household and individual characteristics influencing the outcome.[a] δ_r represents regional-level fixed effects, standard errors, ε_{hh}, are robust to heteroskedasticity.

Box 4.3. **The links between migration and school attendance** (cont.)

Table 4.3. **Immigrants are less likely to attend school**

Dependent variable: School attendance

Main variables of interest: Children/youth in immigrant household, Child/youth is an immigrant

Type of model: Probit

Sample: children 6-14 years (column 1), youth aged 15-17 (column 2) youth aged 18-22 (column 3)

Variables of interest	School attendance		
	Children 6-14	Youth 15-17	Youth 18-22
Individual lives in a household with immigrants	-0.010 (0.013)	-0.028 (0.042)	-0.059 (0.038)
Individual is an immigrant	-0.015 (0.012)	-0.082* (0.047)	-0.040 (0.053)
Number of observations	1 099	377	774

Notes: Results that are statistically significant are indicated as follows: ***: 99%, **: 95%, *: 90%. Standard errors are in parentheses. The analysis of educational expenditures only includes households with children in age 6-14. Extending the sample to include all households in the sample does not change the results.

a. The set of household and individual explanatory variables included in the model are the following: age and sex of the child/youth, household having an emigrant, household size and household size squared, household dependency ratio (defined as the number of children and elderly in the household as a share of the total adult population), mean education level of the members in the household, number of children in the household, binary variables for urban location and household head being female, and finally an asset index (based on principal component analysis) that aims to capture the wealth of the household.

Emigrants often return with additional skills

Whether or not migrants acquire education and skills in the destination country affects the economic payoff of migration (Dustmann and Glitz, 2011). Migrants who acquire education abroad and return with new skills can help increase human capital back home. The extent to which this will happen depends on the degree to which emigrants improve their skills during their migration period, and whether they return to their origin countries or not. The Costa Rican emigrants in the IPPMD sample are relatively well educated compared to individuals without migration experience. Among emigrants and return migrants, 25% and 32% respectively have completed post-secondary education, compared to 19% of individuals without migration experience (Table 3.4, Chapter 3). Comparing the samples of emigrants and return migrants in more detail shows that female migrants – both current emigrants and returnees – are more likely than men to acquire education in the country of destination (Figure 4.7). Male emigrants have the lowest share of tertiary education (only 15%) and are also the least likely to acquire training abroad (Figure 4.7).

Figure 4.7. **Many female return migrants come back with new qualifications acquired overseas**

Education and skills levels of emigrants and return migrants (%)
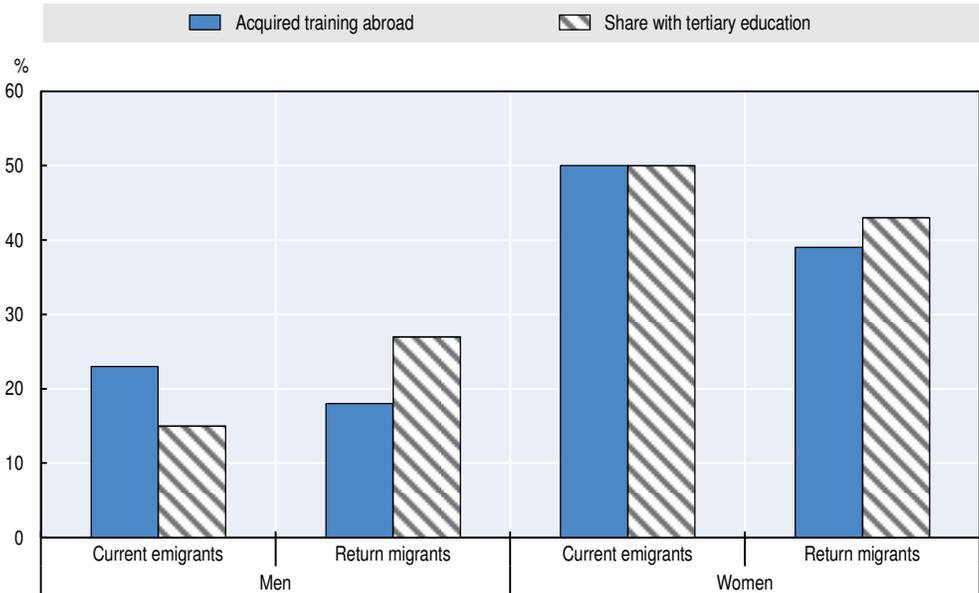
Note: Education level refers to current education level of return migrants and education level of emigrants before leaving Costa Rica.

Source: Authors' own work based on IPPMD data.

Migration, investments and financial services

Investments and entrepreneurship contribute to growth and employment in both developed and developing countries. Migration and remittances from emigrants abroad can ease credit constraints and positively contribute to capital investments and entrepreneurial activities, such as financing the opening or expanding small businesses in the migrants' home country. For example:

- Remittances can fund investments in productive capital in the form of business and real estate.
- Return migrants can share funds, entrepreneurial skills and valuable networks in their country of origin.
- Immigrants can contribute to entrepreneurial activity and employment creation in their host countries.

Previous studies have found that remittances are linked to higher self-employment (Funkhouser, 1992) and business investments (Yang, 2008; Woodruff and Zenteno, 2001). As discussed above, evidence also suggests that return migrants are likely to engage in self-employment. In addition, immigrant entrepreneurs can contribute to maintaining and developing economic activities and revitalising the economy of host countries by developing innovative forms of businesses and

building on their transnational linkages. In many OECD countries, immigrants exhibit higher rates of self-employment than the native-born population. Part of the explanation may be the limited employment opportunities for immigrants in their host country, especially among low-skilled immigrants. However, immigrants may face particular barriers when it comes to starting and running a business, including limited knowledge of laws and regulations in the country of destination, lack of language skills and barriers to accessing credit (OECD, 2010).

The IPPMD data show that productive asset ownership in the form of businesses and real estate (including non-agricultural land and property other than the house in which the household lives) varies according to households' migration experience. Emigrant households are more likely than non-emigrant households to own both real estate and businesses (Figure 4.8). There is no difference in business ownership between households with and without immigrants; however immigrant households are significantly less likely to own real estate: 14% compared to 23% among households without immigrants. This difference is also the only statistically significant difference across the sample.

Figure 4.8. **Immigrant households are less likely to own real estate**

Business and real estate ownership (%), by household migrant status
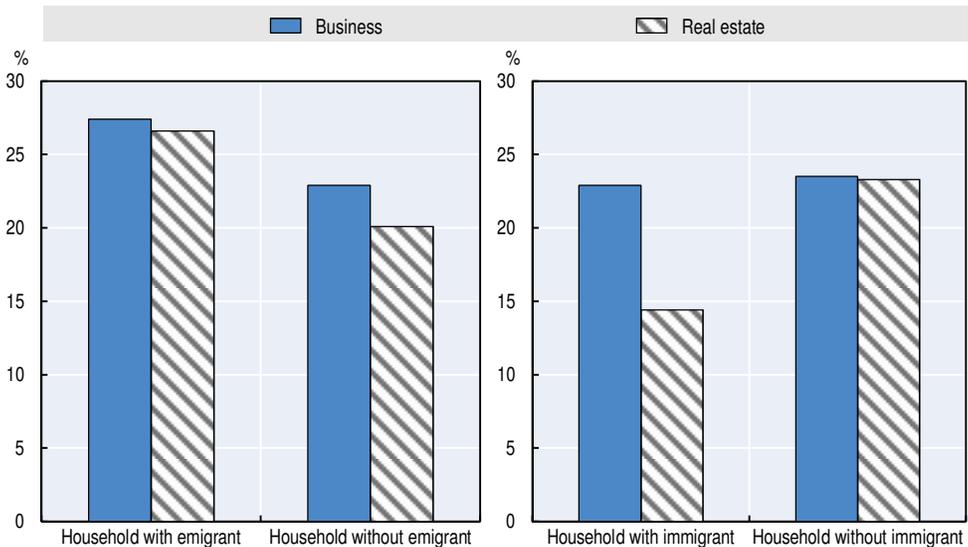
Note: Real estate includes non-agricultural land and property other than the house in which the household currently lives. The only statistically significant difference (using a chi^2-test) is real-estate ownership between households with and without immigrants (right-hand panel).

Source: Authors' own work based on IPPMD data.

Box 4.4 probes more deeply the link between migration experience (emigration and immigration) and investments in business and real-estate ownership, controlling for the characteristics and location of the household. This finds no link between emigration and business ownership or real-estate

ownership. However, households with an immigrant are negatively associated with real-estate ownership, while no statistically significant link was found between having an immigrant and owning a business.

Box 4.4. **The links between investments and migration**

To analyse the link between migration and business and real estate ownership, a probit regression model was run taking the following form:

$$Prob(investment)_{hh} = \beta_0 + \beta_1 immig_{hh} + \beta_2 emig_{hh} + \gamma controls_{hh} + \delta_r + \varepsilon_{hh} \quad (1)$$

where $investment_{hh}$ is either business ownership or real estate ownership (depending on the specification) undertaken by the household, taking on value "1" if a household owns at least one business/real estate property and "0" otherwise. $immig_{hh}$ represents a binary remittance variable with value "1" for households that have an immigrant and "0" otherwise; $emig_{hh}$ represents a binary variable for whether the household has a migrant or not; and $controls_{hh}$ are a set of observed household and individual characteristics that are believed to influence the outcome. ε_i is a randomly distributed error term indicating, in part, the unobservable factors affecting the outcome variable.[a]

Two different specifications were carried out. Specification 1 (column (1)) investigates the link between migration and household business ownership, controlling for household characteristics. Specification 2 (column (2)) analyses the link between migration and real-estate (land and housing).

Table 4.4. **Immigrants are less likely to own real-estate assets**

Dependent variable: Household runs a business/ owns real estate		
Main variables of interest: Household has an emigrant/immigrant		
Type of model: Probit		
Sample: All households		
	Dependent variable	
Variables of interest	(1) Business ownership	(2) Real-estate ownership
Household has at least one immigrant	0.028 (0.022)	-0.041** (0.021)
Household has at least one emigrant	0.048 (0.047)	0.007 (0.040)
Number of observations	2 051	2 048

Note: Statistical significance is indicated as follows: ***: 99%, **: 95%, *: 90%. Standard errors are in parentheses and robust to heteroskedasticity.

a. The set of household and individual explanatory variables included in the model are the following: household size and household size squared, household dependency ratio (defined as the number of children and elderly in the household as a share of the total adult population), mean education level of the members in the household, number of children in the household, binary variables for urban location and household head being female, and finally an asset index (based on principal component analysis) that aims to capture the wealth of the household.

All in all, the results indicate that the link between migration and investments in productive assets in Costa Rica is relatively weak, but that immigrants are disadvantaged when it comes to real-estate ownership.

Migration, social protection and health

Adequate social protection and health coverage are essential to ensure social cohesion, contribute to well-being and improve productivity in a country. Social protection and health are high on the country's agenda. Costa Rica's 2015-18 National Development Plan discusses social aspects of the economy in its first three strategic sectors: 1) labour and social security; 2) human development and social cohesion; and 3) health, nutrition and sport (MPNPE, 2014). In Costa Rica, the share of GDP devoted to health is high, and increased from 7.1% in 2000 to about 9.3% in 2014 (World Bank, 2017b). Compared to other countries in the IPPMD project, Costa Rica also spends more on social programmes. In 2010, it devoted 15.5% of its GDP to social spending, a slight increase from 12.5% disbursed in 2000 (ILO, 2014). This total was the highest of the six IPPMD countries where data on social protection and health were collected (OECD, 2017a).

The latest data paint a positive picture. Costa Rica has almost universal access to healthcare and pensions, which has had tangible positive outcomes (low infant mortality, longer life expectancy, reduction in poverty rates). Schemes that target poor households, such as in-kind public transfers, have been particularly effective (OECD, 2016). However, there are still areas of potential improvement. Waiting times can be long for certain medical procedures for instance, which has led to a rise in private health services and out-of-pocket expenses. Moreover, a recent report recommends better targeting for social assistance programmes in the country (OECD, 2016).

One of the major concerns surrounding migration's impacts on social protection and health is whether individuals contribute more to the system than they take out. Immigrants can, for example, help to finance these systems through their taxes. Nevertheless, they are often blamed for being net users of health and welfare services. In fact, one study of Costa Rica mentions the potential existence of an "invisible population" that uses health services, but does not contribute by paying into the social security system (Marquette, 2006). The IPPMD project explored this by collecting data which identified whether households had benefited from government transfers for social services, and whether individuals had visited a health facility and, if so, how often during the past 12 months. Data on government transfers were collected at the household level and questions on use of health centres were asked of all individuals aged 15 years and over. This section compares immigrants' and native-born people's receipts of government transfers and use of health services.

Immigrants often draw less on public resources than native-born individuals

In Costa Rica, households with an immigrant tend to benefit much less from government social transfers than households without an immigrant; 32% of households without an immigrant received government transfers in the 12 months preceding the survey, compared with only 10% of households with an immigrant, a statistically significant difference (Figure 4.9). In general therefore, households with immigrants do not seem to have better access to public social funds than households without an immigrant. This may be due to the fact that households with immigrants are more likely to live in rural areas, where access to public services is more difficult and where work is often informal. However, the share of immigrant households in rural areas is similar to the share of non-immigrant households (42% vs. 41%). Moreover, households with an immigrant in rural areas are less likely to have access to government transfers than households without immigrants (7% vs. 21%); this is also the case in urban areas (13% vs. 39%) (Figure 4.9).

What can be said about immigrants' access to health services? On average, immigrants were less likely to have visited a health facility at least once in the 12 months preceding the survey than those born in the country (Figure 4.9). Overall, 69% of native-born individuals visited a health centre, compared to 54% of immigrants. This is consistent with previous findings on the subject (Marquette, 2006). In general, women tend to go to a health facility much more often than men (75% versus 55%). However, compared to their native-born counterparts, both immigrant men (44% versus 58%) and immigrant women (63% versus 79%) were generally less likely to have sought health care. In addition, both rural and urban immigrants were less likely to have visited a health facility. In rural areas, 52% of immigrants had visited a health centre compared to 68% of the country's native-born. In urban areas the proportion was 55% versus 69%. All these differences are statistically significant (Figure 4.9).

On the other hand, immigrants who do avail of health services do so more often than native-born individuals (Figure 4.9). On average across all individuals, those who visited a health facility did so 4.7 times in the 12 months preceding the survey, while on average immigrants visited 4.9 times in the previous 12 months compared to 4.6 times for native-born people (not statistically significant). Do these results differ by gender? For women, the difference between immigrants and native-born individuals was rather small (5.4 times compared to 5.1 times; not shown). The difference is slightly larger for men (4.1 times versus 3.7). In both urban and rural areas, there was also very little difference between immigrants and those born in the country (5.0 versus 4.8, for urban; 4.8 vs. 4.2 for rural), and neither were statistically

significant. Overall, this reflects the fact that although immigrants are less likely to visit a health centre, those that do so visit more often or at least as often as native-born individuals.

Figure 4.9. **People in immigrant households are less likely to receive government transfers or go to a health centre**
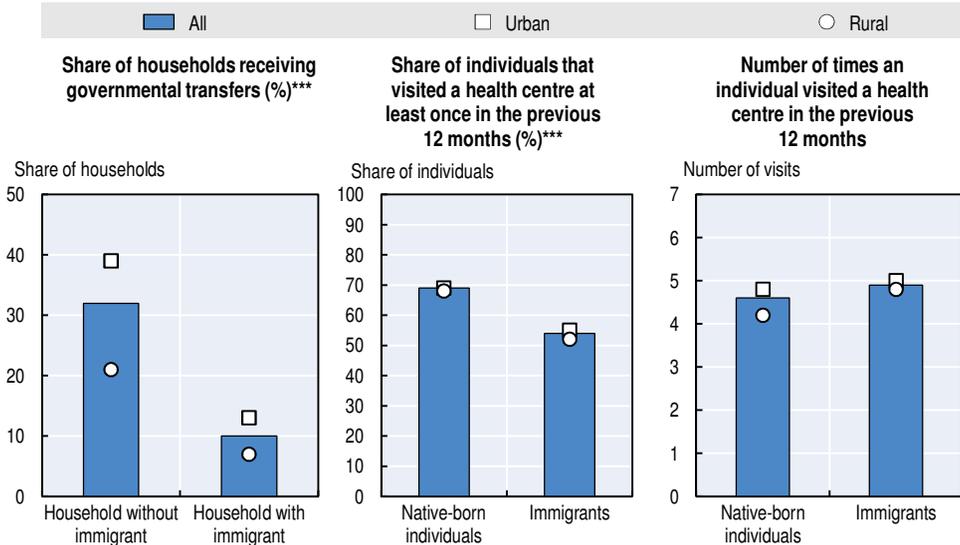
Note: Statistical significance (based on all households and individuals) is tested using a chi-squared test for the first (left-hand) and middle panels, and a t-test for the third (right-hand) panel. It is indicated as follows: ***: 99%, **: 95%, *: 90%.
Source: Authors' own work based on IPPMD data.

There are a number of other factors that may explain these differences, including age, gender and education levels. Regression analysis was used to probe these links more closely while accounting for these factors (Box 4.5). This found that households with immigrants are indeed significantly less likely to receive public transfers and immigrants are significantly less likely to visit a health centre. However, no statistically significant relationship was established between being an immigrant and the frequency of visits to a health facility (Table 4.5, top rows).

Regression models were also run on the sub-samples of gender and household location. These results show that neither of these variables explains the observed differences in the two groups. Rural and urban households with immigrants alike are less likely than non-immigrant households to receive public transfers – although for immigrant households the probability of receiving public transfers is higher in urban regions than in rural ones. Rural and urban and male and female immigrants are all significantly less likely to have visited a health centre than their native-born counterparts (Table 4.5, bottom rows).

Box 4.5. **The links between immigration, public transfers and use of health centres**

To estimate the probability that an immigrant is more or less likely to visit a health centre, the following probit regression model was developed:

$$\text{Prob}(rec\_transfers)_{hh} = \beta_0 + \beta_1 immig_{hh} + \gamma controls_{hh} + \delta_r + \varepsilon_{hh} \qquad (1)$$

$$\text{Prob}(visited\_centre)_i = \beta_0 + \beta_1 immig_i + \gamma controls_{i,hh} + \delta_r + \varepsilon_i \qquad (2)$$

where the unit of observation is either the household *hh* or the individual i, depending on the model in question. The dependent binary variable is adapted to the outcome of interest (either receiving government transfers, or visiting health centre at least once) and takes on the value of 1 if the household/individual outcome is true and 0 otherwise; *immig* represents whether the household has an immigrant, or the individual is an immigrant or not; *controls* stand for a set of individual (i) and household-level (*hh*) regressors;[a] while δ_r represents regional-level fixed effects. Standard errors, ε_{hh} (or ε_i), are robust to heteroskedasticity.

Table 4.5. **Immigrants are less likely to receive public transfers and to visit a health centre**

Dependent variable: Household received government transfers/Individual visited a health centre
Main variables of interest: Household has an immigrant/Individual is an immigrant
Type of model: Probit/OLS
Sample: All households (for government transfers)/Individuals aged 15 and older (for health visits)

Variables of interest	Dependent variables		
	(1) Household received a government transfer in the previous 12 months (equation 1)	(2) Individual visited a health centre at least once in the past 12 months (equation 2)	(3) Number of times individual visited a health centre (equation 2)
Household has an immigrant (col 1)	-0.165***	-0.118***	0.202
Individual is an immigrant (col 2 and 3)	(0.019)	(0.018)	(0.314)
Number of observations	2 233	5 026	3 092
Samples based on gender and household location			
Subsample of men only	n/a	-0.096***	0.153
		(0.025)	(0.580)
Subsample of women only	n/a	-0.126***	0.222
		(0.023)	(0.366)
Subsample of rural households only	-0.097***	-0.093***	0.502
	(0.027)	(0.031)	(0.500)
Subsample of urban households only	-0.209***	-0.125***	-0.010
	(0.026)	(0.022)	(0.406)

Note: Statistical significance is indicated as follows: ***: 99%, **: 95%, *: 90%. Coefficients reflect marginal effects. Standard errors are in parentheses and robust to heteroskedasticity.

Box 4.5. **The links between immigration, public transfers and use of health centres** (*cont.*)

In addition, the following OLS model was estimated:

$$Number\_visits_i = \beta_0 + \beta_1 immig_i + \gamma controls_{i,hh} + \delta_r + \varepsilon_i \qquad (3)$$

where *Number_visits* reflects the number of times an individual visited a health centre in the 12 months prior to the survey amongst individuals that visited one at least once. The other variables are defined as in equation (2).

Results are presented in Table 4.5. Column (1) presents results for whether a household received government transfers, column (2) for whether individuals visited a health centre and column (3) for the number of times an individual has visited a health centre. Results are also divided into two sections. The top rows present results based on the entire sample, while the bottom rows present results based on individual regressions limited to samples of only men, women, individuals living in rural households and those living in urban households (or households based in rural and urban settings, for the first column).

a. In model (1), household level control variables include the household's size, its dependency ratio (number of children 0-15 and elderly 65+ divided by the total of other members), the male-to-female adult ratio, its wealth estimated by an indicator (Chapter 3), whether it is in a rural or urban region and a fixed effect for its administrative region. In models (2) and (3), control variables include the individual's age, gender and education levels, the household's size, its wealth estimated by an indicator, whether it is in a rural or urban region and a fixed effect for its administrative region.

Conclusions

This chapter has explored how migration, in its various dimensions, affects five sectors in Costa Rica: the labour market, agriculture, education, investment and financial services, and social protection and health.

The results confirm previous research showing that immigrants in general are of working age and participate in the labour force to a greater extent than the native population. Due to their demographic characteristics, immigrants make an important contribution to the country's labour supply, especially in low-skilled sectors such as construction and agriculture. Immigrants do not draw more on public resources than native-born individuals. There is therefore no evidence that immigrants are a net user of the systems. However, the analysis indicates that immigrant youth are less likely to stay in school, which may have negative impacts on their integration and also on future national and individual human capital accumulation.

Although return migration seems to stimulate self-employment, emigration generally does not seem to be linked to productive investments in business or real-estate ownership. Return migration and immigration also have little impact

on diversification or investment in agricultural households. These findings suggest that Costa Rica is missing an opportunity to harness the social, financial and human capital embodied in return migration and immigration.

Notes

1. Households reporting to be involved in either arable farming or livestock rearing are considered to be agricultural households.

2. The sample of youth in households receiving remittances is however too small to perform any further (regression) analysis on the link between remittances and school attendance.

References

Acosta, P., C. Calderón, P. Fajnzylber and H. Lopez (2008), "What is the Impact of International Remittances on Poverty and Inequality in Latin America", *World Development*, vol. 36, no. 1, pp. 89-114.

Bartlett, L. (2015), "Access and Quality of Education for International Migrant Children", work commissioned by EFA *Global Monitoring Report 2015, Education for All 2000-2015: achievements and challenges*, UNESCO.

Basso, G. and G. Peri (2015), "The association between immigration and labor market outcomes in the United States", *IZA Discussion Paper* No. 9436, Institute for the Study of Labor, Bonn.

Böhme, M.H. (2015), "Does migration raise agricultural investment? An empirical analysis for rural Mexico", *Agricultural Economics*, 46(2): 211-225, 03.

Böhme, M.H. and S. Kups (2017), "The economic effects of labour immigration in developing countries: A literature review", *OECD Development Centre Working Paper* No. 335, OECD, Paris.

Camarota, S.A. (1998), "The wages of immigration: the effect on low-skilled labor markets", Center for Immigration Studies, Center Paper 12.

Carletto, G., B. Davis, J. Miluka and Z. Zezza (2010), "The vanishing farms: The impact of international migration on Albanian family farming", *Journal of Development Studies*, 46(1): 140-161.

Cox Edwards, A. and M. Ureta, (2003), "International migration, remittances, and schooling: Evidence from El Salvador", *Journal of Development Economics*, 72(2), pp. 429–461.

Démurger, S. and H. Xu (2011), "Left-behind children and return decisions of rural migrants in China", *Working Paper* No. 1122, Groupe d'Analyse et de Théorie Économique Lyon–St-Étienne.

De Vreyer, P., F. Gubert and A.S. Robilliard (2010), "Are there returns to migration experience? An empirical analysis using data on return migrants and non-migrants in West Africa", *Annals of Economics and Statistics*, 97/98: 307–28.

Dustmann, C., T. Frattini and I.P. Preston (2013), "The effect of immigration along the distribution of wages", *Review of Economic Studies*, 80: 145-173.

Dustmann, C. and A. Glitz (2011), "Migration and education", *Handbook of the Economics of Education* 4, pp. 327-439.

Facchini G., A.M. Mayda and M. Mendola (2013), "South-South migration and the labor market: evidence from South Africa", *IZA Discussion Paper* No. 7362, Institute for the Study of Labor, Bonn.

FAO (2016a), "Employment distribution, agriculture", *FAOSTAT* (database), *www.fao.org/faostat/en/#data/OE* (accessed 1 October 2016).

FAO (2016b), "Gross per capita production index number (2004-2006 = 100)", *FAOSTAT* (database), *www.fao.org/faostat/en/#data/QI* (accessed 1 October 2016).

FAO (2016c), "Gross production value (constant 2004-2006 million US$)", FAOSTAT (database), *www.fao.org/faostat/en/#data/QI* (accessed 1 October 2016).

FAO and IFAD (2008), *International Migration, Remittances and Rural Development*, Food and Agriculture Organization of the United Nations and International Fund for Agricultural Development, Rome, *https://www.ifad.org/documents/10180/aea35048-5287-4d8d-92db-3fee60c1653d*.

Funkhouser, E. (1992), Migration from Nicaragua: Some recent evidence, *World Development*, 20(8), pp. 1209-1218.

Gindling, T.H. (2008), "South-South migration: the impact of Nicaraguan immigrants on earnings, inequality and poverty in Costa Rica", *IZA Discussion Paper* No. 3279, Institute for the Study of Labor, Bonn.

Giulietti, C., J. Wahba and K.F. Zimmermann (2013), "Entrepreneurship of the left-behind", *IZA Discussion Paper* No. 7270, Institute for the Study of Labor, Bonn.

Gonzalez-Velosa, G. (2011), "The effects of emigration and remittances on agriculture: Evidence from the Philippines", mimeo, University of Maryland, Baltimore.

Hanson, G.H. and C. Woodruff (2003), "Emigration and educational attainment in Mexico", mimeo, University of California, San Diego.

ILO (2014), *World Social Protection Report 2014-15*, International Labor Organization, Geneva, *www.ilo.org/global/research/global-reports/world-social-security-report/2014/WCMS_245201/lang--en/index.htm*.

ILO (2012), *International Standard Classification of Occupations: ISCO-08*, International Labour Office, Geneva.

INEC (2014), Encuesta Continua de Empleo, *Indicadores del mercado laboral Costaricence*, Instituto Nacional de Estadísticas y Censos, San José.

Lucas, R.E.B. (1987), "Emigration to South Africa's mines", *American Economic Review* 77(3).

Marquette, C. (2006), "Nicaraguan Migrants in Costa Rica", *Poblacion e Salud in Mesoamérica*, 4(1), July, Centro Centroamericano de Poblacion, San Jose.

Mendola, M. (2008), "Migration and technological change in rural households: Complements or substitutes?", *Journal of Development Economics*, 85(1–2), February, pp. 150-175, *http://dx.doi.org/10.1016/j.jdeveco.2006.07.003*.

MPNPE (2014), "National Development Plan 2015", Gobierno de Costa Rica, Ministerio de Planificación Nacional y Política Económica, San Jose, *www.mideplan.go.cr/instrumentos/pnd*.

MTSS (2015), "Anuario Estadístico: MTSS 2015", Dirección General de Planificación del Trabajo, Observatorio del Mercado Laboral, Ministerio de Trabajo y Seguridad Social, San Jose.

OECD (2017a), *Interrelations between Public Policies, Migration and Development*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264265615-en*.

OECD (2017b), "Agricultural Policies in Costa Rica," OECD Publishing, Paris, *http://dx.doi.org/10.1787/9789264269125-en*.

OECD (2016), *OECD Economic Surveys: Costa Rica: Economic Assessment*, OECD Publishing, Paris, *http://dx.doi.org/10.1787/eco_surveys-cri-2016-en*.

OECD (2014), "Is migration good for the economy?" *Migration Policy Debates*, No. 2, May, OECD, Paris, *www.oecd.org/els/mig/OECD%20Migration%20Policy%20Debates%20Numero%202.pdf*.

OECD (2010), "Entrepreneurship and migrants", Report by the OECD Working Party on SMEs and Entrepreneurship, OECD, Paris, *https://www.oecd.org/cfe/smes/45068866.pdf*.

Orrenius, P.M. and M. Zavodny (2003), "Does immigration affect wages? A look at occupation-level evidence", *FRB Atlanta Working Paper* 2003-2, Federal Reserve Bank of Atlanta.

Piracha, M. and F. Vadean (2009), "Return migration and occupational choice", *IZA Discussion Paper* No. 3922, Institute for the Study of Labor, Bonn, *https://ideas.repec.org/p/iza/izadps/dp3922.html*.

Taylor, J.E. and F. Wouterse (2008), "Migration and income diversification: evidence from Burkina Faso", *World Development*, 36(4): pp. 625-640.

Trejos, A. (2013), "Economic growth and restructuring through trade and FDI: Costa Rican experiences of interest to Cuba," in: Piccione, T and R.E. Feinberg(eds), *Cuba's Economic Change in Comparative Perspective*, Brookings Institute, Washington, DC, *https://www.brookings.edu/research/cubas-economic-change-in-comparative-perspective/*.

Tsegai, D. (2004), "Effects of migration on the source communities in the Volta Basin of Ghana: Potential links of migration, remittances, farm and non-farm self-employment activities", *Working paper*, Economics and Technological Change, University of Bonn, Bonn.

UNESCO (n.d.), Institute for Statistics (UIS) database, *www.uis.unesco.org* (accessed 30 March 2017).

UNFCCC (2015), "Costa Rica smart farming will cut emissions: another NAMA win-win", web page, United Nations Framework Convention on Climate Change, New York, *http://newsroom.unfccc.int/action-to-adapt/costa-rica-smart-farming-reduces-emissions*.

Wahba, J. (2015), "Who benefits from return migration to developing countries?", IZA World of Labor, Bonn, *http://wol.iza.org/articles/who-benefits-from-return-migration-to-developingcountries-1.pdf*.

Woodruff, C. and R. Zenteno (2007), "Migration networks and microenterprises in Mexico", *Journal of Development Economics*, vol. 82/2, Elsevier, Amsterdam, pp. 509-528.

World Bank (2017a), "Agriculture, value added (% of GDP)", World Bank, Washington, DC, *http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS* (accessed 1 April 2017).

World Bank (2017b), "Health expenditure, total (% of GDP)", World Bank, Washington, DC, *http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS* (accessed 1 April 2017).

Yang, D. (2008), "International migration, remittances and household investment: Evidence from Philippine migrants' exchange rate shocks", *The Economic Journal*, vol. 118/528, pp. 591-630, *www.nber.org/papers/w12325*.