

Chapter 5

Immigration and economic growth

This chapter looks at the impact of immigrants on economic growth in the context of the project Assessing the Economic Contribution of Labour Migration in Developing Countries as Countries of Destination. The first section discusses immigrants' contribution towards value added and per-capita income. The second section explores ways in which immigration contributes to selected economic sectors, including potential effects on productivity. The final section investigates the link between immigration and entrepreneurship.

Immigration's effect on economic growth is one of the key factors that determine whether immigration boosts the well-being of the host society. If the growth rate of per-capita income increases thanks to immigrants, the standard of living of the general population can rise. This chapter seeks to provide evidence on this topic while building on the previous chapters.

Existing studies on the per-capita growth effects of immigration are much less numerous than studies on its labour market or fiscal impacts. Most studies in this area rely on cross-country data and tend to find positive effects (Aleksynska and Tritah, 2015; Alesina, Harnoss and Rapoport, 2016; Boubtane, Dumont and Rault, 2016; Felbermayr, Hiller and Sala, 2010; Jaumotte, Koloskova and Saxena, 2016). Studies based on individual countries also find positive effects (Muysken and Ziesemer, 2011, on the Netherlands; Boubtane, Coulibaly and D'Albis, 2015, on France). Studies suggesting that impacts are negative include Borgy et al. (2010) in terms of gross domestic product (GDP) per worker and Dolado, Gloria and Ichino (1994). Finally, other studies indicate that the way immigration affects economic growth depends on the type of immigrants or the country of destination (Kang and Kim, 2012; Orefice, 2010). The different methodologies, country samples and time frames used in the existing analyses make it difficult to directly compare results.

This chapter does not replicate the methodologies from the above-mentioned studies but rather discusses evidence from multiple sources in a broad framework. The cross-country analyses cannot be replicated because the number of partner countries is limited to ten. The individual country analyses cannot be applied because there is not enough immigrant stock data. Instead, the first part discusses immigrants' current contribution of value added and per-capita income. The second part explores ways in which immigration contributes to selected sectors, including potential effects on productivity. Finally, the third part investigates the link between immigration and entrepreneurship.

Immigration and per-capita income

While an expansion of the workforce almost invariably increases a country's total output level (Borjas, 1999), this section seeks to provide evidence on whether foreign-born workers also affect the level and growth rate of per-capita income for the entire population. Under the right circumstances, immigration could be associated with productivity growth, which is discussed in the following section.

It is unclear whether immigration has a negative, a positive or no effect on GDP per capita. Theoretically, under certain assumptions, an increase in the labour supply due to immigration would lower wages and expand total employment and output. This would be the case in an economy (i) which does not trade with other countries, (ii) where the capital stock is fixed and (iii) where only one type of worker produces goods and services (iv) and whose production does not become more or less efficient as production quantities change.¹ The overall income would increase, but benefits would accrue to the owners of capital at the detriment of workers (Bodvarsson and van den Berg, 2013). However, real-world economies are more complex and the effects less clear. For example, if immigrants encourage firms

to raise investment or invest themselves, or if they contribute to the development of new products, production technologies or export markets, the impact can differ greatly from the simple model.

At the empirical level, the impact of immigration on GDP per capita can be assessed by looking at two components:

- the share of employed individuals in the total population
- the GDP per employed worker (labour productivity).²

This implies that if either the share of employed individuals in the total population or labour productivity rises while the other remains constant or increases, per-capita income would rise. However, the per-capita income of native-born persons would not necessarily rise.

Immigration tends to boost the share of the population that is employed

Immigration can increase the share of employed individuals in the total population. This is true for eight partner countries. In these countries, the share of the employed in the foreign-born population is higher than the same share in the native-born population (Figure 5.1). The two exceptions are Kyrgyzstan and Nepal.

All else remaining equal, the presence of immigrants should raise income per capita. This is primarily due to the higher share of immigrants of working age (defined as those aged 15 and above) compared to the native-born population. To a lesser extent it is due to a higher employment rate among working-age immigrants. In all partner countries, the share of the working-age population is higher for the foreign-born than for the native-born (Figure 5.1). The effect on the overall share ranges from 0.2 percentage points in Ghana to 2.4 percentage points in Côte d'Ivoire, for an average of one percentage point. The potential increase in GDP per capita due to a higher share of the working-age population can be significant. A report by the World Bank estimates that an increase of 1 percentage point in the working-age population boosts GDP per capita growth by 1-2 percentage points (World Bank, 2016).

The immigrants' employment rate is higher than the native-born rate in six of the partner countries. In Ghana, Kyrgyzstan, Nepal and Rwanda, the opposite is true (Figure 5.1). But because immigrants are more likely to be of working age, this lower employment rate does not significantly reduce the share of employed in the overall population. In fact, in Ghana and Rwanda, the higher share of working-age individuals among the immigrant population more than compensates for the lower employment rate, resulting in a higher overall share of workers in the total population.

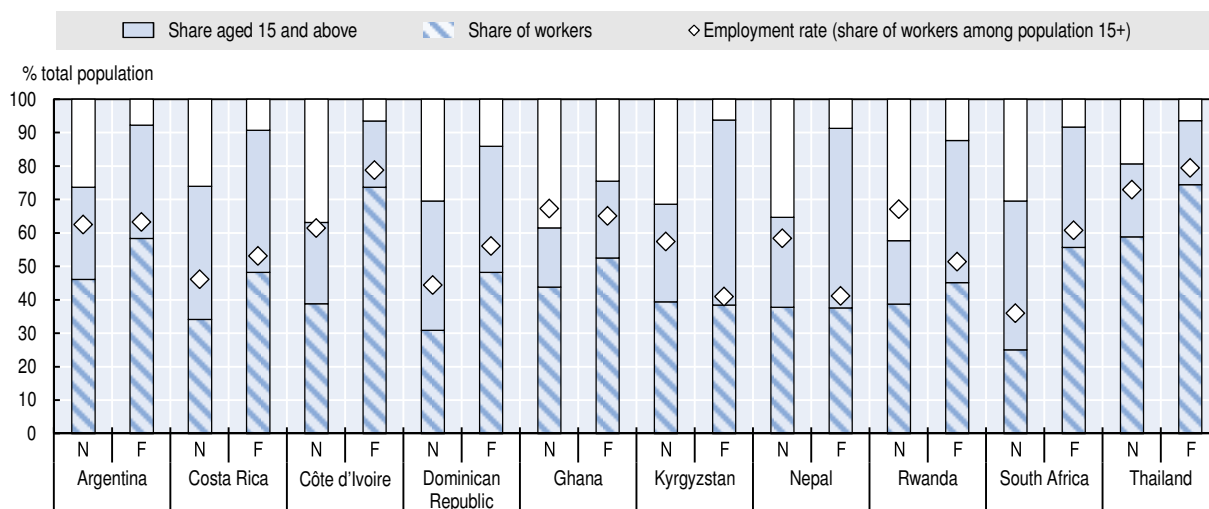
The higher concentration of immigrants among the working-age population observed in the partner countries is not atypical. Globally, about 80% of immigrants are aged 15 or above, compared to around only 58% of the overall population (UN DESA, 2016). The labour force participation rate is also higher among immigrants than among the native-born population in all groups of countries except low-income countries (ILO, 2015a). While a higher labour force participation rate could in theory be offset by a higher unemployment rate, it is likely that the employment-to-population ratio of immigrants is also higher than the same ratio for native-born individuals in middle- and high-income countries.

An upward effect of immigration on the share of the employed in the population, and through this channel on per-capita income, could be mitigated or even reversed if foreign-born workers displace native-born workers. Table 5.1 shows the results of the labour market impact analysis conducted in Chapter 4. A negative impact on the employment rate of the native-born population was found in Costa Rica, the Dominican Republic, Ghana and Rwanda,

although the impact on the paid employment rate was insignificant (column 3). The impact of the paid employment rate on GDP per capita is possibly larger than of employment overall as productivity levels are likely to be higher for workers in paid employment (which excludes, for example, workers in subsistence agriculture). A negative impact of immigration on the paid employment rate of native-born workers was found only in Nepal, possibly due to the large outflows of skilled Nepal-born workers (see also Chapter 4).

Figure 5.1. The share of employed individuals is usually higher among the foreign- than the native-born population

Share of the population aged 15 and above, share of the population employed and the employment rate (for individuals aged 15 and above), by foreign- and native-born populations



Note: N = native-born population, F = foreign-born population. The share of the population aged 15 and above includes the share of workers.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices; household survey data was used for Argentina and Côte d'Ivoire.

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Table 5.1. In most partner countries, there are no negative impacts from immigration on native-born employment

	All employment	Paid employment
(1)	(2)	(3)
Argentina (2015)	No impact	No impact
Costa Rica (2011)	Negative	No impact
Côte d'Ivoire (2008)	No impact	..
Dominican Republic (2010)	Negative	No impact
South Africa (2011)	No impact	No impact
Ghana (2010)	Negative	No Impact
Kyrgyzstan (2009)	No impact	No impact
Nepal (2011)	No impact	Negative
Rwanda (2012)	Negative	No impact
Thailand (2010)	No impact	Positive

Note: Results on the impact of immigration on native-born employment are based on national level regressions pooling men and women together, as discussed in detail in Chapter 4.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices; household survey data was used for Argentina and Côte d'Ivoire.

The evidence so far shows that, in the partner countries, immigration generally leads to an increase in the share of the employed in the population and hence to growth of the labour force. An increase in the share of workers causes a mechanical increase of per-capita income but may affect it even further. Population growth through immigration can lead to additional increases in per-capita income in models where certain sectors of the economy become more efficient at higher production levels. That is, the higher the production volume, the fewer inputs are required per product, although this may depend on certain pre-conditions and the qualifications of the immigrants (Bretschger, 2001; Reichlin and Rustichini, 1998). Similarly, if a larger labour force allows workers to become more specialised (Peri, 2012a) or if immigrants fill shortages in positions that are critical to the economy, per-capita income can increase further. However, it can possibly decrease, for example if employers invest less in technologies (Ortega and Peri, 2009).

GDP per foreign-born worker is difficult to determine

Changes to the GDP per worker, that is, labour productivity, also determine how immigration affects per-capita income. The effects can be analysed by looking at changes in the following:

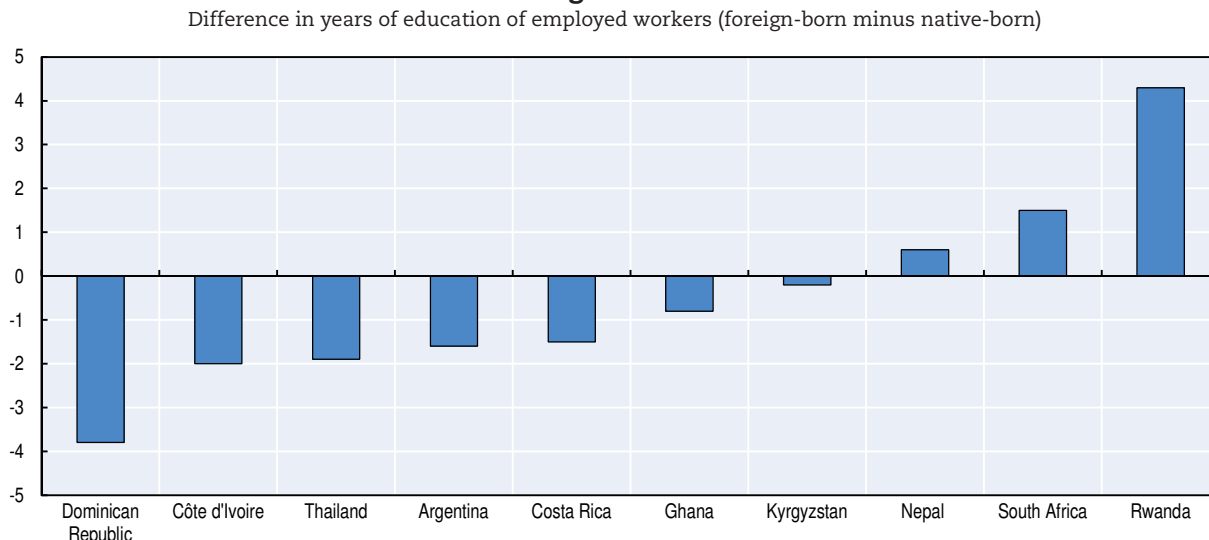
- the capital-labour ratio
- the average human capital per worker
- total factor productivity.³

There is no systematic evidence on how immigration affects the capital-labour ratio. In theory, the ratio initially drops when the labour force grows. Over time, firms undertake investments that restore the ratio to a higher level. However, immigrants who invest or spur foreign direct investment into the economy can offset the drop in the capital-labour ratio from the outset. Given these theoretical considerations and the fact that the entry and exit of native-born individuals affects labour force growth rates much more than the arrival of immigrants in many countries (see Chapter 2), changes in the other two components are of more interest.

Human capital can be understood as the stock of skills and knowledge of individuals that contribute to their productivity (Acemoglu and Autor, undated). Formal training and education are important investments in human capital (Becker, 1994). Informal learning on and off the job also affects human capital in positive ways. While people with the same educational level may have different human capital levels, education captures a major part of human capital. Years of education are easy to compare across countries and between foreign- and native-born individuals and therefore are used as a human capital measure.

In the partner countries, average human capital – measured as years of education – of foreign-born workers is not uniformly higher or lower than that of native-born workers. In Nepal, Rwanda and South Africa, it is indeed higher for foreign- than for native-born workers, ranging from an additional 0.6 years of education in Nepal to 4.3 years in Rwanda (Figure 5.2). In seven partner countries, native-born workers have more years of education than the foreign-born. Hence, in these countries, immigration is associated with a modest decrease in average human capital per worker. However, in Costa Rica, where foreign-born workers have on average 1.5 years less education than native-born workers, the share of immigrants with a tertiary education is higher than that of the native-born. In OECD countries where the relative human capital of immigrants is higher, it increases GDP per capita (Boubtane, Dumont and Rault, 2016).

Figure 5.2. **In most partner countries, native-born workers are more educated than foreign-born workers**



Note: In some countries, the years of education were estimated based on reported highest educational attainment.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices; household survey data was used for Argentina and Côte d'Ivoire.

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The final component – changes in total factor productivity – is the hardest to capture. There is no concrete comparable measure of this component in this report, but the second section of this chapter presents evidence based on different quantitative and qualitative research methods. In addition, modelling analyses suggest that foreign-born workers may increase total factor productivity due to efficiency gains generated by increased specialisation in the labour force. This appears to be the case in South Africa and Thailand (OECD/ILO, forthcoming d; OECD/ILO, 2017b).

Immigrants' contribution to value added often exceeds their population share

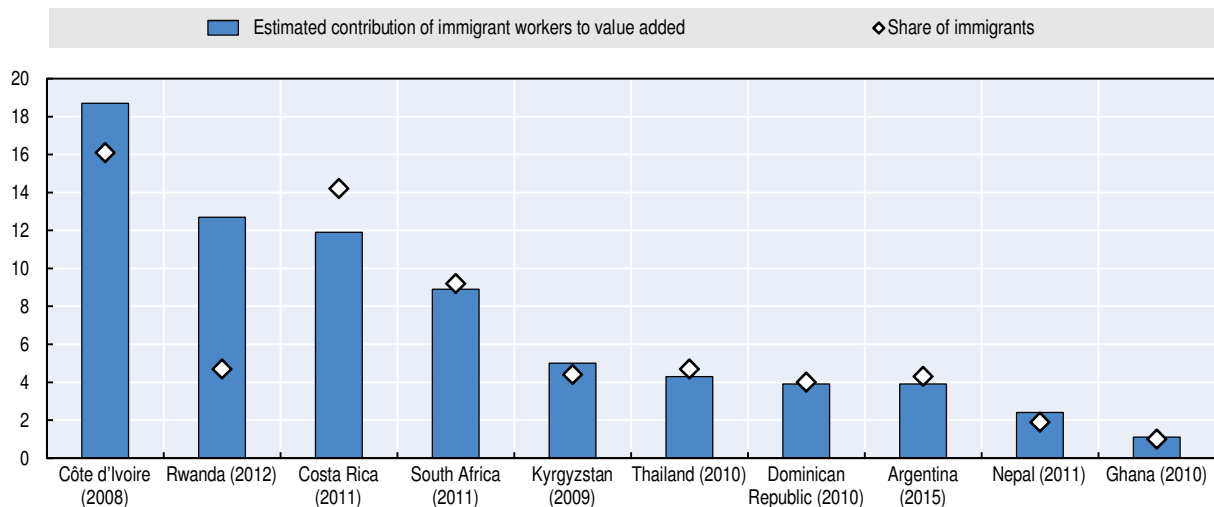
It is difficult to determine the contribution of foreign-born workers to GDP with great certainty. This is due to the lack of comparable information on the relative productivity of foreign-born workers and to their effects on overall productivity in their host country. If the productivity of foreign- and native-born workers is the same, their contribution to GDP could generally be assumed to be equal to their share in employment, but this assumption is unlikely to hold.

A more precise estimate can be made by taking into account two factors. One is the sectoral distributions of foreign- and native-born employment (given that labour productivity differs widely by sector). The second is the ratio of years of education of foreign- and native-born workers (see, for example, Martin, 2007; ILO/OECD/World Bank, 2015) as a proxy for differences in human capital and, indirectly, productivity. Each sector's value added is multiplied by the share of foreign-born workers in the sector and the education ratio of foreign-to-native-born workers. These estimated immigrant contributions to each sector's value added are then added up to arrive at an estimate of their contribution to overall value added.

Based on these calculations, the contribution of foreign-born workers ranges from about 1% of GDP in Ghana to almost 19% in Côte d'Ivoire (Figure 5.3). In most partner countries, these estimates are fairly close to the share of foreign-born workers in employment. Thus

immigrants' estimated contribution minus the share of employed workers who are foreign-born equals close to zero. Large differences are observed in Côte d'Ivoire (2.6 percentage points) and in Rwanda (8 percentage points). They are due to the concentration in some higher-productivity sectors such as mining in Côte d'Ivoire and to the high level of education of foreign-born workers in Rwanda.

Figure 5.3. **Immigrants' contribution to value added is often similar to their employment share**
Immigrants estimated share of value added and of the employed



Note: The estimated contribution of foreign-born workers to GDP is calculated as follows: the share of employed individuals that are immigrants in a sector is multiplied by the ratio of years of education of foreign- to-native-born workers employed in the sector and by the value added generated by the sector. These estimates of the value added generated by immigrants in the different sectors are then added up to arrive at the total estimated value added generated by immigrants. The share of this value added in total value added corresponds to the estimated contribution of foreign-born workers to GDP.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices; household survey data was used for Argentina and Côte d'Ivoire.

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Overall, given the large differences in the share of the employed population among the foreign-born and the native-born, it seems unlikely that foreign-born workers depress income per capita. This would only happen if productivity levels were sufficiently low to eliminate the advantage generated by relatively high employment shares, and if there were no other positive effects (such as those due to increased specialisation).

Econometric models illustrate the contribution of foreign-born workers to GDP in South Africa and Thailand

The effects of immigrant workers on GDP can be illustrated using econometric models. These models capture not only the immediate contribution of immigrant workers, but also second-order effects on consumption and investment, and their subsequent impact on GDP. Such modelling exercises were carried out for South Africa and Thailand, as internationally used models that appeared appropriate were available for these countries. For Thailand, a Computable General Equilibrium (CGE) model was applied. This model is based on the single country standard model outlined by the Partnership for Economic Policy (PEP).⁴ For South Africa, a multisector macro-econometric model was used; it is based on Inforum models developed by the University of Maryland (Conningarth Economists, 2017).⁵ The models for both countries draw extensively on input-output data, other economic and

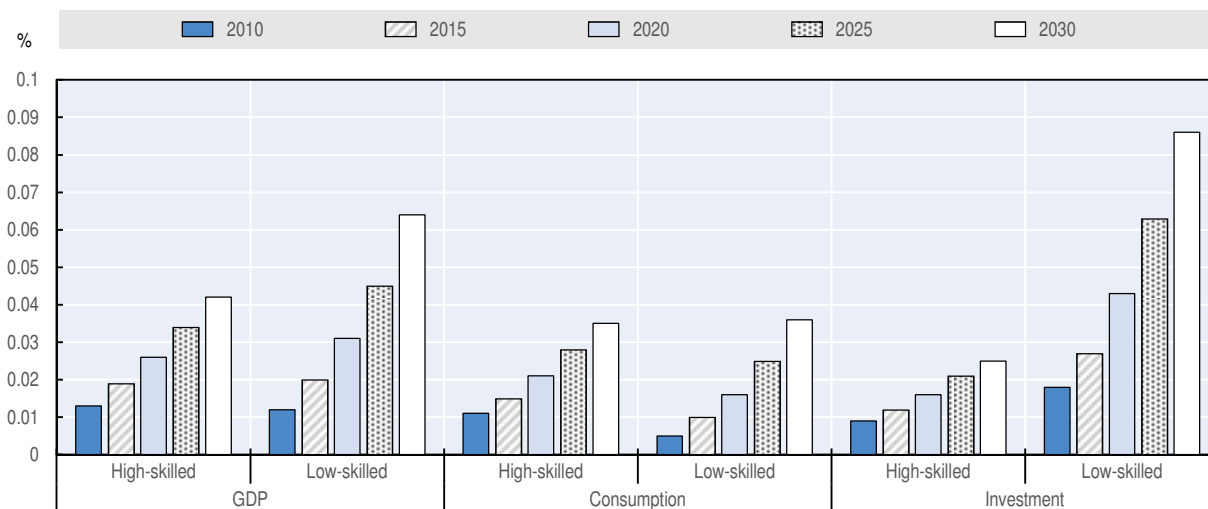
social data, and on population censuses for data on immigrants. Like all models, they are stylised representations of the economy and are necessarily built on a number of simplifying assumptions.

The CGE model for Thailand, based on data from 2001 to 2004, includes groups of households differentiated by level of income, while production in each economic sector is determined by a function that uses labour and capital. Both native-born and foreign-born workers can be low- and high-skilled, and the production function assumes that their inputs are complementary. The model is able to simulate the main components of GDP with a large degree of accuracy (Puttanapong, Limskul and Bowonthumrongchai, 2017).

The CGE model demonstrates the strong connection between the immigrant workforce and production in the Thai economy. The degree of complementarity between native- and foreign-born workers determines the magnitude of the impact that foreign-born workers have on the economy. The greater the complementarity, for example, the more a reduction of foreign-born employment harms the economy (OECD/ILO, 2017b). The model's simulations for the period up to 2030 for example show that an increase in productivity of high-skilled workers may initially be more beneficial than an increase in the productivity of low-skilled workers, while over time the opposite is true (see Figure 5.4). These differences are due to the central role of investment in determining the growth path of the economy, and the fact that high-skilled workers are a relatively small group (OECD/ILO, 2017b).

Figure 5.4. The economic impact of an increase in the productivity of low-skilled workers is stronger in the long term

Impact of an increase of the productivity of low-skill and high-skill workers on GDP, consumption and investment, selected years (deviation from the base case, %)



Source: OECD/ILO (2017b).

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An important feature of the multisector macro-econometric model used for South Africa is its bottom-up approach. Macro-economic aggregates are built up from detailed activities at an industry or product level rather than being estimated according to production functions. The model includes a production block and, in this block, intermediate and final demand add up to total demand, which forms the basis for production on a sectoral level. Final demand includes consumption and investment, while intermediate demand is calculated for each sector by using an input-output coefficient matrix.

The South African model simulated economic development with and without foreign-born workers for the 2001-11 period. The model distinguished between low- and high-skilled workers and took into account information on labour-related incomes of both groups.⁶ The lower average earnings of foreign-born workers help explain the estimated favourable impact on GDP. On average, high-skilled foreign-born workers raised GDP per capita by 2.2%, and low-skilled workers by 2.8%. Foreign-born workers also generated additional employment for native-born workers. These results are consistent with the findings reported earlier (Figure 5.1), which showed the relatively high share of foreign-born workers employed in South Africa; therefore a positive effect of foreign-born workers on GDP per capita seems likely. There is no measurable impact of the presence of foreign-born workers on native-born employment at the national level (see Chapter 4). However, the estimates in the South Africa country report suggest that new immigrants may have a positive effect on native-born employment levels (OECD/ILO, forthcoming d).

Immigration and productivity

Immigration can affect the productivity of a country through several channels. These include knowledge and technological transfers that can lead to a change in the level of innovation (Akcigit, Grigsby and Nicholas, 2017; Böhme and Kups, 2017). The effects can be positive or negative.

The results of empirical studies on the overall impacts of immigration on productivity are mixed. Some studies find positive effects of either the size or the diversity of the immigrant group in the local area or firm (Mitaritonna, Orefice and Peri, 2017; Peri, 2012b; Trax, Brunow and Suedekum, 2015). Others find no (Ortega and Peri, 2009) or even negative effects (Ortega and Peri, 2014). The effects may also differ by sector (Paserman, 2013).

Productivity is normally estimated by looking at total output as a function of inputs. For any given stock of input, a higher output means higher productivity (Daude and Fernández-Arias, 2010). The relationship between immigration and productivity within a country can be examined at the aggregate, sector and firm levels. Because output and input data at these levels are scarce, rather than estimating the exact impact of immigration on productivity, the relationship has been analysed less formally.

In particular, this section of the chapter presents the following evidence. The first sub-section summarises results from qualitative sector studies focusing on how immigrants integrate into businesses and the labour force in key sectors in Côte d'Ivoire, Ghana, Kyrgyzstan and Nepal. The second sub-section explains what trade patterns can reveal about how immigrants contribute to sectoral productivity. The third sub-section investigates the relationship between the presence of immigrant workers at the firm level and firm characteristics based on enterprise survey data from Côte d'Ivoire, Nepal and Rwanda.

Sectoral studies help better understand immigrants' role in key economic sectors

Qualitative sector studies for Côte d'Ivoire, Ghana, Kyrgyzstan and Nepal aim to analyse how foreign-born workers contribute to specific sectors. They explore why this contribution might differ from that of native-born workers and how the two groups interact. At the national level, the presence of immigrant workers did not have a measurable effect on the employment of native-born workers in most partner countries (see Table 5.1). However, these national results do not necessarily hold for each economic sector. The qualitative studies discussed in this sub-section illustrate such effects, as well as broader effects on knowledge generation and ultimately productivity. They therefore complement the quantitative analysis in this and other chapters.

Scope and methodology

The sector studies focused on two economic sectors in each of the four countries in which the project team conducted them (Table 5.2). The sectors were selected based on two criteria: immigrants were overrepresented and the sector produced a sizeable share of GDP.

Table 5.2. **Trade was analysed in all of the sector studies**
Selected sectors by country

	Agriculture	Mining	Manufacturing	Trade
Côte d'Ivoire	X			X
Ghana		X		X
Kyrgyzstan			X	X
Nepal			X	X

The structure of the sector studies was similar across countries. The studies' findings relied on (i) interviews with key stakeholders; (ii) interviews with enterprises; and (iii) focus group discussions among both native-born and immigrant workers. The project team organised training workshops to conduct pilot fieldwork, and a team from a research institution in each country undertook the study. Annex Table 5.A1.1 lists the research institutions and the number of interviews conducted.

The selection of study participants depended on whether they were key stakeholders, enterprises or workers. The key stakeholders interviewed were the main institutions involved in the migration process. These included ministries of the interior and labour, other government departments, as well as national and sectoral organisations of employers and unions. The enterprises, especially large enterprises, were considered to represent the formal economy, and were selected in consultation with relevant (sector) organisations. The focus groups were composed of both foreign-born and native-born workers to assess the effects of immigration for workers including those in the informal economy. Geographical coverage was determined in consultation with relevant organisations.

In most countries, studies were designed to include at least 20 stakeholder interviews, 50 interviews with representatives of enterprises, and 10 focus group discussions. However, these numbers were not always achieved due to various constraints. In Ghana, for example, it was not possible to secure interviews with representatives of many enterprises particularly in the mining sector. This was partially compensated by interviews with key informants, but still resulted in a shortfall in comparison with the planned number of interviews.

Each focus group discussion consisted of 5 to 12 participants to allow for an effective discussion. The composition of the groups was generally guided by the need to balance socio-demographic characteristics of the populations. The interviews were conducted in both national and appropriate local languages.

Immigrant communities and the many factors associated with immigration

Both push and pull factors affect migration flows (Baum, 2012). While economic constraints and opportunities are major drivers (Chapter 2), individual characteristics such as income, education (Chapter 3), and access to information and networks are also important to explain migration decisions (Flahaux and De Haas, 2016). Economic opportunities, a stable political environment, perceived hospitality, availability of basic amenities and a more competitive environment in countries of origin were frequently mentioned in this context in partner countries. Among Nigerian traders in Ghana, for example, there is a strong perception

that profit margins are higher in Ghana, while this country is considered more peaceful than Nigeria. Kyrgyzstan is thought to have a tolerant and liberal environment compared to other Central Asian states or Russia. Education is another motive for migration, as some immigrant workers initially move to a destination country to benefit from higher education and end up staying. On the other hand, unemployment and extreme poverty in contiguous Indian states are considered to be the leading causes for Indians to migrate to Nepal.

Networks can play an important role in shaping both migration flows and the integration of immigrants into the economy:

- The sector studies confirmed the enabling role of networks in the migration process, which the existing literature widely acknowledges (Anjos and Campos, 2010). For example, migration networks from China to African countries, once established, continue to generate further migration (Mohan and Kale, 2007). Such networks may start with the migration of a single family member, who is then followed by other members of the family or even of the larger community.
- Likewise, the sector studies also provided examples of the role of migrants' networks in cross-border investment and business development, which had already been stressed in the literature (Docquier and Lodigiani, 2010). In Côte d'Ivoire, for example, immigrants often integrate into the informal sector through immigrant networks that help newcomers find work or that even provide credit so that they can become self-employed. Likewise, social networks play a significant role in the migration process and are intertwined with the economic activities of traders in Ghana.

International treaties or bilateral relations between countries may encourage or reinforce immigrant networks. For example, since 2000, Ghana attended several meetings in the context of the Forum on China-Africa Cooperation (FOCAC) and subsequently signed agreements with China in areas that include agriculture, trade and infrastructure. Accordingly, Chinese companies have been among the top ten source countries of investment in Ghana for many years, and some of the immigration from China is linked to these agreements.⁷

But international agreements may also affect immigrant networks and their economic contributions to the country of destination in less positive ways. For example, it has been argued that Kyrgyzstan's joining the Eurasian Economic Union has led to a decrease in re-exports of Chinese and Turkish goods through Kyrgyz markets.

Views on immigrant workers' contribution to large enterprises are often positive

Particularly in large enterprises, the need to fill skills gaps is one of the drivers of recruiting immigrant workers. Many of these workers appear to be concentrated at the specialist or managerial level in the selected sectors of partner countries.⁸ In Nepal, immigrant workers concentrate in technical occupations, as native-born workers have not yet been trained in the use of newly imported technologies. In Kyrgyzstan, business representatives mentioned that certain skills – including in engineering, electrical and mechanical maintenance and financial and supervising functions – were simply not available on the labour market. Similarly, specialists are recruited in limited numbers by the mining and trade sectors in Ghana to fill both technical and economic skills gaps (e.g. engineering, accounting and marketing). Some employers also deem immigrants desirable workers because of their attitude towards work. This was mentioned in Côte d'Ivoire, Ghana and Nepal.

When seeking to obtain work permits, employers may have to overcome bureaucratic hurdles. In some countries, this is often perceived to be problematic. In Kyrgyzstan, for example, work permits are sometimes only granted for a short period, and the frequent

need to renew permits places a large administrative burden on companies. Another problem is corruption, as some immigrant workers and employers reported that they had to pay bribes in order to obtain permits. Nevertheless, corruption is not a universal phenomenon, as permits were also obtained according to legal procedures in Kyrgyzstan. In Ghana, the process also involves various bureaucratic procedures but appeared less prone to abuse.

In Nepal, where the overwhelming majority of immigrant workers comes from impoverished neighbouring states in India, issuing work permits is less prevalent. Reciprocal free mobility and labour market access, ensured by the 1950 treaty between India and Nepal, indirectly contributes to informal employment and to exploitative working conditions for vulnerable immigrant workers. For instance, employers in the formal manufacturing sector in Nepal sometimes show a preference for Indian workers, particularly because of their lack of documentation and willingness to work under poor conditions. The combination of the lack of documentation and use of sub-contractors is further seen as exacerbating working conditions in general, as undocumented immigrant workers do not pay taxes or receive social benefits.

In a country such as Nepal, where emigration flows are considerable, another commonly cited reason for hiring immigrant workers is the lack of native-born workers interested in working in the country. Several Nepalese employers pointed out that because of the general belief that wages in third countries, primarily in the Middle East and Southeast Asia, are higher than in Nepal, retaining Nepali workers is difficult even when they are provided with employment opportunities.

Perceptions of immigrant workers in small-scale economic activities, self-employment and the informal economy are mixed

Perceptions of immigrant workers outside large enterprises seem more mixed. Some interviewees voiced positive views on the contribution of immigrant workers in terms of skills and even job creation. But some also expressed fears concerning higher levels of competition in product and labour markets. In addition, problems such as environmental issues were attributed to the activities of immigrants.

Some of the perceptions on competition for jobs are linked to the limited role of the formal economy. In most partner countries, the informal economy is large and may even be growing. For example, in many African economies, the lack of employment opportunities in the formal economy is a major factor driving the growth of the informal economy (ILO, 2015b). In Kyrgyzstan, about two-thirds of workers are employed in the informal sector. A heavy tax burden and extensive administrative requirements and a lack of confidence in government authorities are seen to drive the informalisation of the Kyrgyz economy.

In the trade sectors of the partner countries that were included in the study, immigrants are often perceived to dominate certain sub-sectors. In Côte d'Ivoire, some think this dominance is the result of a traditional lack of interest by native-born workers in certain jobs. While a large share of immigrants in the trade sector are own-account workers, some also employ both foreign- and native-born workers. Certain interviewees in Côte d'Ivoire and Kyrgyzstan, however, suggested that immigrant employers offered less favourable employment terms to native-born than to foreign-born workers.

In Nepal, a scarcity of skilled labour in both the trade and manufacturing sectors also fuels the immigration of Indian workers. The importance of Indian immigrants in these as well as the service sectors is evident. When Indian workers left the country following the 2015 earthquake, many services and traders, including barbers, cobblers and mobile vegetable vendors, stopped their activities, thus affecting the population in Kathmandu.

Even when immigrant and native-born workers are active in the same sub-sectors, they may take up different niches. For example, Kyrgyz-born traders mentioned they believed that many foreign-born traders sold low-quality goods at low prices, while they themselves sold high-quality goods at higher prices.

Perceptions of the desirability of certain kinds of work can play a role in creating migrant niches. In Nepal, native-born workers usually regard as undesirable many occupations in which immigrants are now overrepresented, be they low-skilled or highly specialised (such as producers and sellers of traditional Indian confectionery). This is seen to be the result of deeply rooted perceptions and fears of social stigma from family or the community. Interestingly, this is not only the case for native-born workers, but also for many immigrants, as they often come to Nepal in pursuit of low-skilled jobs for which they would be unfavourably judged by their own community.

In several countries, there are also perceptions that entrepreneurs displace some native-born workers in the trade sectors. One explanation put forward is that importing consumer goods is cheaper for Chinese immigrants in particular. In general, immigrants from industrial countries have more connections with manufacturers in their countries of origin, and consequently it is easier for them to import consumer goods. At the same time, immigrants can also transfer knowledge about the supply chain to native-born individuals. For example, an immigrant trader in Côte d'Ivoire mentioned that he passed on information about good whole-sellers to his native-born friends that asked him for advice.

Policy efforts to prevent displacement may not always have the desired effect. The Ghana Investment Promotion Centre (GIPC) Act of 1994 (Act 478) and revision in 2013 (Act 865) reserve certain types of activities and enterprises for Ghanaian citizens, including sales of goods in markets or open stalls. The objective is partly to counter the perception of “unfair competition”. However, interviews suggested that foreign-born entrepreneurs circumvent this legislation by using Ghanaian connections. This “fronting” practice entails joint ownership of businesses and may create benefits for immigrants and Ghanaians alike (Adjavon, 2013). Some interviewees noted that generally the Ghanaian fronters exploit the foreigners, while the foreigners evade taxes and sell their wares at lower prices, which is unfavourable to other Ghanaian traders. While government tax revenue is lost in the process, the perceived opportunities for Ghanaians include the prospect of obtaining employment when the business is formalised. The largest union in the trade sector – Ghana Union of Traders Association (GUTA) – often draws the government’s attention to retail activities by immigrants.

Transfer of skills and long-term effects of immigrants

There are other forms of reciprocity in the relationship between immigrants and small-scale and informal sector entrepreneurs. In Ghana, the support from Nigerians for establishing businesses seems common. Ghanaians benefit from Nigerian skills and capital, and Nigerians gain a stake in the business.

In Kyrgyzstan, several workers in the focus group discussions said that they had learned new skills through working with immigrants. These immigrants introduced new technologies, while also bringing strong marketing skills.

The transfer of skills can either occur informally or be explicitly planned. The latter is probably more common in large enterprises, for example, as noted earlier, in mining in Ghana. Informally, foreign- and native-born workers can learn from each other while working side-by-side. However, in some cases, language barriers prevent mutual learning.

Language is a key factor in how successful immigrants integrate into the workforce. Focus group participants in Kyrgyzstan stated that the integration occurred easily if there were no language barriers. Conversely, local workers in the trade sector in this country mentioned that sometimes certain groups of immigrants, such as the Chinese, did not seek to communicate with the Kyrgyz-born traders and instead preferred to stay among themselves. Similarly, participants in Ghana sometimes pointed to the use of different languages as obstacles to integration.

In Kyrgyzstan, it was noted that increased competition may also have positive consequences in the long term. A business association representative suggested a way in which Kyrgyz traders could deal with the increased competition: by working together with Chinese designers, they could develop and subsequently sell new products. In fact, in some cases this already appears to occur. Another representative asserted that increased competition from foreign-born entrepreneurs could push Kyrgyz firms to innovate, leading to growth.

Box 5.1. Mining in rural areas in Ghana

Mining activities undertaken by both large-scale formal enterprises and small-scale entrepreneurs affect rural communities in Ghana. Mostly Ghanaian entrepreneurs initiate ancillary businesses to provide services to mining companies that are predominantly either foreign-owned or jointly owned by Ghanaians and foreigners. Apart from hospitality and personal services, increasing production resulting from the presence of immigrants in the small-scale sector has encouraged the production of washing plants for gold, and created opportunities for technical jobs such as welding. On the other hand, some Ghanaians believe that immigrants working as intermediaries between local small-scale miners and large-scale buyers of gold for export are displacing the native-born.

By creating small-scale mining firms in rural Ghana and employing local people to work with, interviewees considered Chinese entrepreneurs to enhance rural incomes and promote rural development. The operations of Chinese miners have also given local people the opportunity to benefit from the extraction of natural resources. This is contrary to large mining firms that tend to pay royalties both to governments and to high-level traditional rulers who do not reside in the communities from which the resources are extracted.

However, involving immigrant entrepreneurs and workers in small-scale mining is also associated with less positive effects. A study by Amonoo (2014) indicates that, similar to the trade sector, “fronting” is an issue (according to Ghanaian legislation, foreigners are not allowed in small-scale mining). Furthermore, even though small-scale mining has been undertaken in Ghana since pre-colonial times, Chinese entrepreneurs use sophisticated machines such as power plants, washing plants, excavators and wash pipes, while Ghanaians tend to use hand tools. Partnerships of Ghanaians with the Chinese are mostly driven by the fact that the Chinese have access to this machinery. Unfortunately, as informal, small-scale mining activities by the Chinese, other migrants and Ghanaians alike usually take place along water bodies, waste materials are washed back into the water sources. The pollution generated by small-scale mining using machinery is much greater than that generated by traditional Ghanaian methods.

The studies in Côte d’Ivoire, Ghana, Kyrgyzstan and Nepal shed light on the variety of channels through which immigrant workers interact with native-born workers, and affect the productivity of both groups of workers. The next sub-section looks into the quantification of effects – in particular on productivity – at the level of enterprises.

Trade data suggests that immigrants do not have a clear effect on a sector's productivity

The different sector studies suggested pathways by which immigration could affect productivity levels in businesses or a sector overall but did not quantify these productivity effects. In the following pages, this quantification is attempted based on aggregate export data and enterprise surveys.

For the export analysis, the growth in a sector's exports is used as a proxy for productivity. Exports have been proposed as a proxy for productivity in existing research (Bahar and Rapoport, forthcoming). The underlying assumption is that countries can only become exporters of a new good if the sectors that produce them have become more productive in comparison to the rest of the world.

A sectoral approach is also employed in the value added calculation of the first section of the chapter, but it differs in important aspects from the trade-based approach explored below. The value added calculation combines the share of immigrants per sector with the sector's contribution to GDP. Productivity is adjusted based on the educational distribution of immigrants compared to native-born workers. The sectoral approach thus captures productivity differences based on immigrants' observable characteristics. However, it does not take into account immigrants' potential impact on productivity due to spill-over effects, such as increased or decreased innovation at the enterprise or sector level. When immigrants change a sector's productivity due to these indirect effects, they affect productivity beyond their share in the sector.

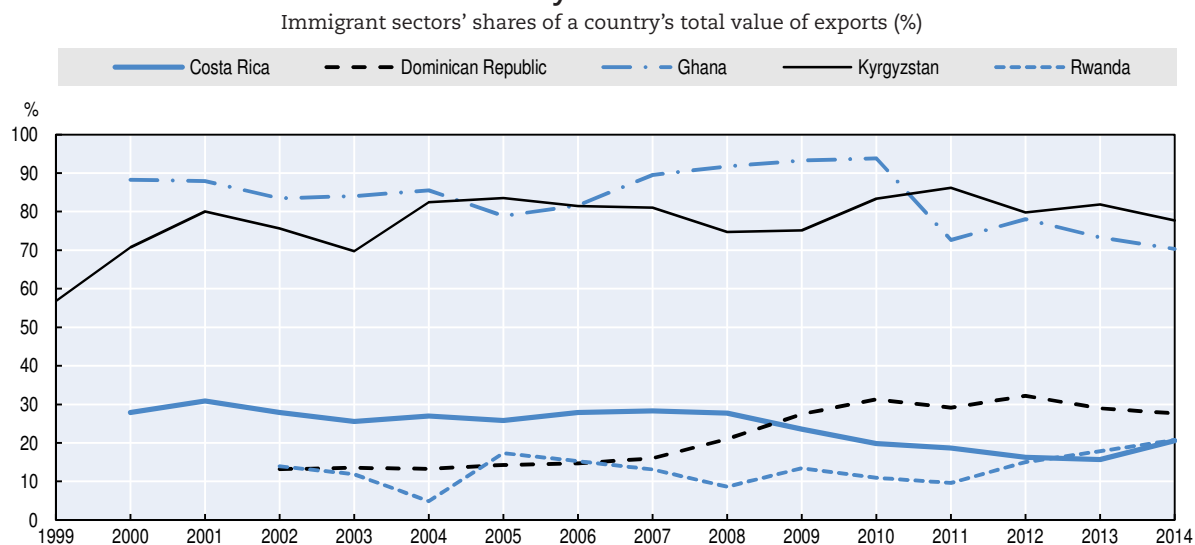
The relationship between immigration and export growth as a proxy for productivity growth is explored in two different ways. For both, the share of immigrants in a base year is compared to a sector's export growth. The first approach divides sectors into two groups, depending on whether immigrants are overrepresented or underrepresented in the sector compared to their overall share in the active labour force.⁹ Among the sectors in which immigrants are overrepresented are agriculture, commerce, and certain subsectors of manufacturing and mining. The second approach compares the correlation between the relative share of immigrants and the export growth in each sector.

The underlying assumption for both approaches is that if immigration influences productivity and hence export growth in a sector, this influence should be more pronounced in sectors in which immigrants form a relatively large part of the workforce. For example, if immigrants raise productivity, exports from sectors in which immigrants are overrepresented are expected to increase relative to those where they are underrepresented. Export growth is calculated based on the share of each sector in the total value of exports of the country as reported in the *United Nations Comtrade database* (DESA/UNSD, undated). The immigrant shares in the base year come from census data for the year closest to 2000, using the *Integrated Public Use Microdata Series* database (Minnesota Population Center, 2017). Detailed information on the sectors in which immigrants work is available for Costa Rica, the Dominican Republic, Ghana, Kyrgyzstan and Rwanda. This sub-section therefore limits the analysis to these countries.

The use of exports as a proxy for productivity has several important limitations. First, the share of immigrants per sector is based on one moment in time, not taking into account possible changes over years. Second, the level of aggregation might disguise effects that take place at a smaller scale. For example, productivity gains in one sector can affect the productivity in related sectors due to flows of intermediate inputs between the sectors (OECD, 2001), making it more difficult to capture productivity differences on the sectoral level. Third, price fluctuations may influence the value of exports.

There is no clear trend of sectors in which immigrants are overrepresented contributing more to export growth than sectors in which they are underrepresented. In some of the countries, the share of the export values of sectors in which immigrants are overrepresented in total exports declined (Figure 5.5). For Costa Rica, this share dropped from 28% in 2000 to 16% in 2013, but increased again to 21% in 2014, for an average decline of 0.5 percentage points per year. In Ghana, the average relative growth was -1.2 percentage points per year, ranging from 88% in 2000 to 70% in 2014. The negative relative growth rate does not imply a decline in exports, as export growth rates for the sample countries were high, particularly for Ghana (Table 5.3). For the Dominican Republic, Kyrgyzstan and Rwanda the share of exports by sectors in which immigrants are overrepresented increased, by on average 1.8, 0.5 and 0.5 percentage points per year, respectively. Thus while no clear trend exists across countries, one commonality is that the shares fluctuate from year to year.

Figure 5.5. **The share of exports from sectors where immigrants are overrepresented is relatively stable over time**



Note: The different starting points reflect the different years of the censuses used.

Source: Authors' own work based on data from UN Comtrade (DESA/UNSD, undated) and the Minnesota Population Center (2017).

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Table 5.3. **Exports as a share of GDP vary in selected partner countries, but most show high growth rates**

Country	Export share of GDP (% , 2014)	Average export growth rate (% , 2009-14)	Share of exports by immigrant sectors (% , 2014)
Costa Rica	32.2	4.0	20.6
Dominican Republic	25.6	14.6	27.6
Ghana	39.5	20.5	70.4
Kyrgyzstan	37.4	3.4	77.7
Rwanda	14.8	16.7	20.7

Note: Immigrant sectors are based on two-digit ISIC-3 codes, and are defined as sectors in which immigrants are overrepresented compared to their share among workers in the whole country.

Source: Authors' own work based on data from UN Comtrade (DESA/UNSD, undated) and the Minnesota Population Center (2017).

When the relative immigrant share is used as an alternative measure to simple overrepresentation, there is similarly no relationship. Whether export growth is studied in two, five or ten years, there is no significant correlation between it and immigration.

The findings above suggest that sectors in which immigrants are overrepresented do not perform better or worse than those with fewer immigrants. It could be deduced that, for Costa Rica and Ghana, the decline in the value share of exports points to a relative decline in productivity of sectors in which immigrants are overrepresented compared to those where they are not. The opposite is the case for the Dominican Republic, Kyrgyzstan and Rwanda. However, the relatively strong year-to-year fluctuations reduce confidence in this interpretation.

Immigrants can influence productivity at the firm level

In view of the difficulties of identifying productivity effects using proxy measures at the sector level, this sub-section focuses on the correlation between immigration and productivity at the firm level. The analysis is based on enterprise surveys or establishment censuses for Côte d'Ivoire, Nepal and Rwanda.¹⁰

The types of enterprises they represent vary from country to country:

- Côte d'Ivoire: The 2016 informal enterprise survey (phase two of the *Enquête nationale sur la situation de l'emploi et le secteur informel* – ENSESI) covers non-agricultural informal enterprises (INS, 2016).
- Rwanda: The 2014 establishment census includes both formal and informal enterprises (NISR, 2014a).
- Nepal: The *National Census of Manufacturing Establishments 2011-2012* is restricted to firms in the manufacturing sector with at least ten workers (CBS, 2013).

As seen through the sector studies, immigrants can play different roles in formal and informal sector enterprises, which presumably also shape their productivity effects. But the different coverage also has consequences for the analysis. For Côte d'Ivoire, the informal nature of sampled enterprises complicates productivity analysis due to the lack of official accounting records. Instead of using written records, the information is based on the recall of the business owners and therefore the questions concerning revenue and costs relate only to the month prior to the survey. Similarly, for Rwanda, the survey contains information on the total revenue but not on input costs.

The definition of an immigrant had to be adapted for the analysis of some of the establishment censuses. In particular, the Nepali and Rwandan establishment censuses only contained information on the nationality of workers rather than the country of birth. While in most countries, there is a large overlap between the immigrant and non-citizen (foreign) populations, this is not the case in Rwanda: according to the 2013 household survey, only 7% of foreign-born individuals were non-citizens (among the native-born, the share of foreigners was less than 0.1%) (NISR, 2014b).¹¹ For Côte d'Ivoire, co-operation between the National Statistical Institute and the project team led to including additional questions in the informal enterprise survey, including on the number of foreign- and native-born individuals working for the businesses. Hence, in Côte d'Ivoire, an immigrant is still defined as a foreign-born person, while in Nepal and Rwanda, the proxy measure of nationality is used.

Businesses with and without immigrants tend to have different characteristics

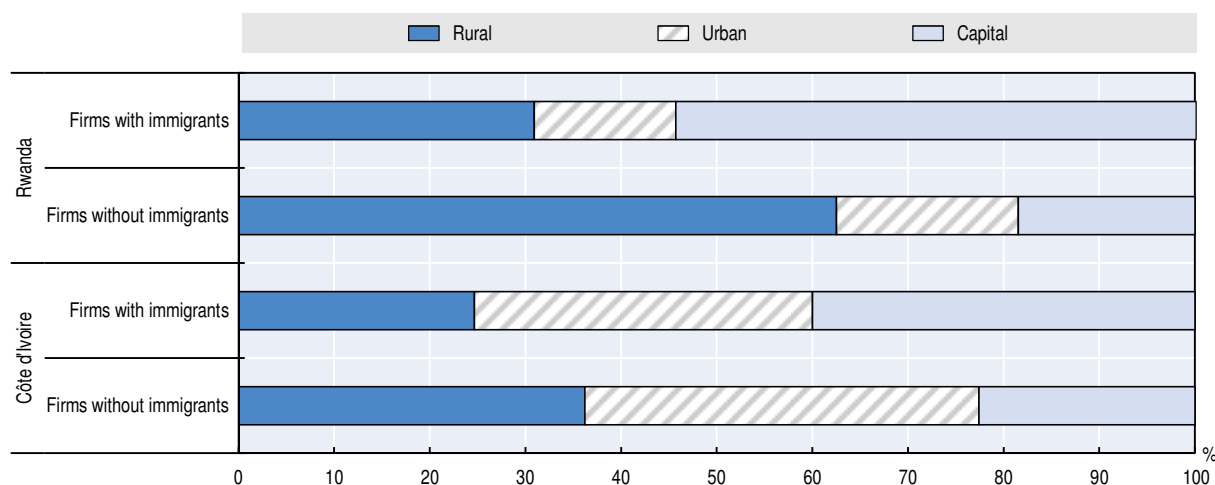
Firms employing immigrants tend to be larger than firms that do not. This does not imply that employing immigrants makes businesses more successful, as it is simply more likely to find at least one immigrant worker in firms with more than with fewer employees. In Côte d'Ivoire, where own-account workers are also included in the survey, the difference is small: businesses with at least one immigrant (which may well be the sole worker as well as owner)

have 1.4 workers, compared to 1.3 workers among firms without immigrants. In Rwanda the difference in size is more pronounced due to the inclusion of formal enterprises. Formal enterprises there on average employ 15.6 employees compared to an average of 1.5 employees in informal enterprises. Companies with immigrants average 44 workers compared to 3 workers in companies without immigrants. Finally, in Nepal, the average number of employees in businesses with immigrants is 110, compared to 38 in businesses without immigrants.

Because immigrants tend to migrate to urban areas in many countries, firms with immigrants are more likely to be found in cities (Figure 5.6). In Rwanda, 54% of the firms with immigrants are located in Kigali, the capital. For Nepal, the situation is slightly different as the majority of manufacturing firms – with and without immigrants – is located near the border with India. The location of the firm is important, as previous research found that business owners of small enterprises in Rwanda are more likely to have other occupations in addition to managing their business when they are located in rural areas (Abott, Murenzi and Musana, 2012). In Côte d’Ivoire, immigrants that run one-person enterprises are less likely than native-born entrepreneurs to have another job besides running their firm. Their concentration in urban areas can partially explain this.

Figure 5.6. **Firms with immigrants are more concentrated in urban areas, with the majority in the capital**

Distribution of firms across the capital, other urban and rural areas by whether the firm employs at least one immigrant



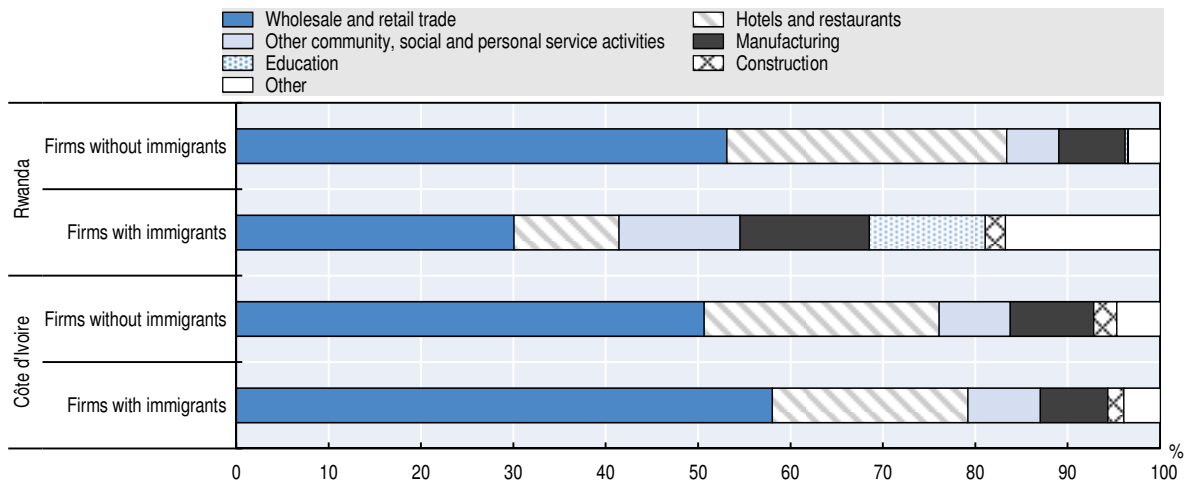
Note: Nepal is not included in this figure as the *National Census of Manufacturing Establishments* does not report an urban/rural indicator.
Source: Authors' own work based on data from ENSESI 2016 for Côte d'Ivoire (INS, 2016) and the Rwandan establishment census 2014 (NISR, 2014a).

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The relative distribution across sectors between firms with and without immigrants varies between Côte d'Ivoire and Rwanda. In both countries, firms with immigrants are less frequently in the hotels and restaurants sector (Figure 5.7). In Côte d'Ivoire, the share of non-immigrant firms active in the sector is 25% compared to 21% of immigrant firms. In Rwanda, the difference is even larger, with the respective shares being 29% and 8%. However, while the majority of surveyed companies are in commerce in both countries, there are differences with regards to the distribution of firms with and without immigrants. In Côte d'Ivoire, a higher percentage of firms with immigrants is active in this sector (58% in comparison to 51%), while in Rwanda, the opposite is true (21% in comparison to 51%).

Figure 5.7. **Most surveyed businesses are in commerce**

Sectors in which businesses operate, by country and whether they employ an immigrant



Note: Nepal was not included because the establishment census is limited to manufacturing firms.

Source: Authors' own work based on data from ENSESI 2016 for Côte d'Ivoire (INS, 2016) and the Rwandan establishment census 2014 (NISR, 2014a).

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Immigrants might influence productivity beyond their effect on human capital

An important determinant of labour productivity is the capital-labour ratio, as mentioned earlier. This ratio might differ between firms with and without immigrants. Capital could be replaced by the use of immigrant labour, and immigrants who run businesses might bring more or less capital with them than native-born entrepreneurs. In Côte d'Ivoire, the amount of capital used is significantly higher among firms with immigrants compared to firms without, at USD 156 versus USD 112 respectively. But firms with immigrants also employ more workers, and the average capital per worker does not differ significantly.

The situation is similar in Nepal and Rwanda. Enterprises with foreigners employ more physical capital than firms without, but this does not necessarily imply that these firms are more capital intensive as they also employ more workers.¹² In Nepal, the average capital per worker is lower in firms that employ non-Nepalese workers. Regression analysis confirms this negative association between employing these workers and capital per worker once controlling for firm size and subsector. In Rwanda, firms employing foreigners on average have higher capital levels, but the difference disappears once the number of employees is taken into account.

Besides physical capital, labour productivity is also a function of human capital. Higher levels of human capital lead to higher productivity and to a higher compensation for workers. Therefore, if immigrants raise the level of human capital in the firm, it is likely that average wages increase as well. However, growth in the labour supply could mean more competition, leading to lower wages, especially if immigrants accept lower wages in return for their labour.

Chapter 4 shows that in Côte d'Ivoire and Nepal, immigrants' wages do not significantly differ from that of native-born workers once controlling for human capital and occupation. In Côte d'Ivoire, without these controls, immigrants on average earn slightly more than native-born individuals. In the informal sector in Côte d'Ivoire, based on ENSESI data, firms that employ immigrants have higher wage costs compared to firms

that do not employ immigrants. Whether the higher wages benefit the immigrants, the native-born workers or both cannot be distinguished from the data. But the findings from Chapter 4 suggests that the difference in wage costs might be due to differences in workers' human capital or occupation. This implies that the average level of human capital in firms with immigrants is higher. In manufacturing firms in Nepal, the average wage per Nepalese worker is similar in firms with and without non-Nepalese workers. Regression analysis, controlling for capital and labour, confirms that Nepalese workers' wage does not differ by the presence of non-Nepalese workers in a firm. Wage costs are not included in the Rwandan establishment census, but Chapter 4 shows that foreigners' average wage is higher than that of workers with Rwandan nationality, even when controlling for education or occupation.

The effect of immigrants on a firm's productivity beyond their effect on human and physical capital can be positive or negative, and theoretical arguments exist for both. To estimate the effect empirically, the ideal experiment would allocate immigrants randomly across firms and measure their productivity over time. In reality, immigrants are far from randomly distributed across firms. Controlling for other factors that influence productivity, such as location or capital, can partially offset the lack of random allocation. Nonetheless, the results should be interpreted with caution. In particular, the allocation is still not random even once these characteristics are taken into account, and immigration may also affect productivity through its effects on physical and human capital.

In Côte d'Ivoire and Rwanda, employing immigrants does not seem to influence a firm's efficiency in transforming inputs into output, but this finding is influenced by firm size. The average productivity of firms with and without immigrants in Côte d'Ivoire (as measured by the average revenue per worker) does not significantly differ. Regression analyses, controlling for capital, raw material inputs, sector, location and number of workers, confirm that productivity is not influenced by whether or not the firm employs immigrants. However, in firms with at least two workers, average revenue per worker is significantly higher among firms that employ immigrants, including when other explanatory factors are taken into account. In Rwanda, where both the formal and informal sectors are included, firms with immigrants have higher revenues. But regression analysis shows that this is mainly a function of firm characteristics such as size, formality, capital used, sector and location. Employing foreign-born workers does not influence a firms' revenue once these controls are accounted for.

In Nepal, in contrast, manufacturing firms that employ foreigners appear to be more productive. Labour productivity, measured as value added per worker, in firms in which immigrants make up less than 5% but more than 0% of the workforce, is 25% higher than in firms without foreign workers. If the share of foreign workers is higher than 5%, the productivity gain compared to firms not employing immigrants is 20%. However, firms employing up to 5% immigrants tend to be larger than firms employing no immigrants or more than 5% immigrants. When comparing only larger firms (those with more than twenty employees), the productivity gains due to employing any immigrants disappear. However, employing highly skilled immigrant workers is still associated with higher productivity levels.

To conclude, the analysis provides modest evidence on boosting productivity through immigration. Sectors in which immigrants are overrepresented do not experience above-average productivity growth. However, Ivorian and Nepali – but not Rwandese – firms that employ immigrants appear to be more productive than firms that do not (provided one-person firms are excluded). The sector studies illuminated mechanisms that could lead to productivity impulses, such as mutual learning between foreign- and native-born workers

and high work morale among foreign-born workers. However, few informal enterprises in Côte d'Ivoire reported such effects in the survey.

Turning back to the production function introduced at the beginning of the chapter, the first and current sections provided evidence on how immigration affects human capital-augmented labour and capital on the one hand and productivity on the other hand. Entrepreneurship can affect both the utilisation of capital and labour as well as productivity. Therefore, the final section explores the relationship between immigration and entrepreneurship.

Immigration and entrepreneurship

One definition of entrepreneurship is the exploitation of business opportunities, either within existing firms or through the creation of new firms (see Ahmad and Seymour, 2008). Self-employment, which is often used as a proxy in this context, is hence only an incomplete measure of entrepreneurship. On the one hand, it excludes entrepreneurial activities of employees and, on the other hand, it can include non-entrepreneurial self-employment activities (sometimes called “necessity entrepreneurship”).

When entrepreneurs focus on developing new products or production methods or opening new markets, it is easy to see how entrepreneurship could increase productivity or employment. In the case of productivity, either the value of output for a given level of inputs could rise or the required levels or costs of inputs for a given level of outputs could fall. However, exploiting business opportunities does not always increase overall productivity (Baumol, 1990). One study suggests that the productivity effect of business ownership is positive (Erken, Donselaar and Thurik, 2016). However, another study finds the economic growth effects (and hence most likely the productivity effects) to be negative in developing countries. This study measured entrepreneurship by the share of the adult population that is either in the process of starting a business or owns or manages one that is less than 42 months old (van Stel, Carree and Thurik, 2005).

Immigration can affect entrepreneurial activities – defined here as the share who are employers (business ownership rate) – in two ways. First, if the share of business owners among the immigrant population differs from the share among the native-born, this would alter the overall ratio of business owners in the population. Aside from differences in the share of the working-age population and the labour force participation rates, this can occur if immigrant labour force participants are business owners at different rates than native-born labour force participants. Reasons for such differences may be that business ownership rates were different in the immigrants’ home country, that they are unable to find other employment or that they have different business opportunities than native-born individuals (Zhou, 2006). While the rates among the immigrant population might differ, the effect on the overall rate is likely to be limited as immigrants form only a small share of the population.

Second, immigrants may make native-born individuals more or less likely to be entrepreneurs (Duleep, Jaeger and Regets, 2012; Fairlie and Meyer, 2003). For example, increased competition through immigrant business owners could keep some native-born individuals from starting businesses or put them out of business. More positively, native-born individuals may feel more confident about starting or continuing to operate their businesses if they can find employees with the right skill set more easily or if additional suppliers or customers are available.

There are no general patterns in the entrepreneurship rate of foreign- compared to native-born individuals across countries. The average self-employment rate of foreign-born individuals in OECD countries is slightly higher than that of native-born individuals

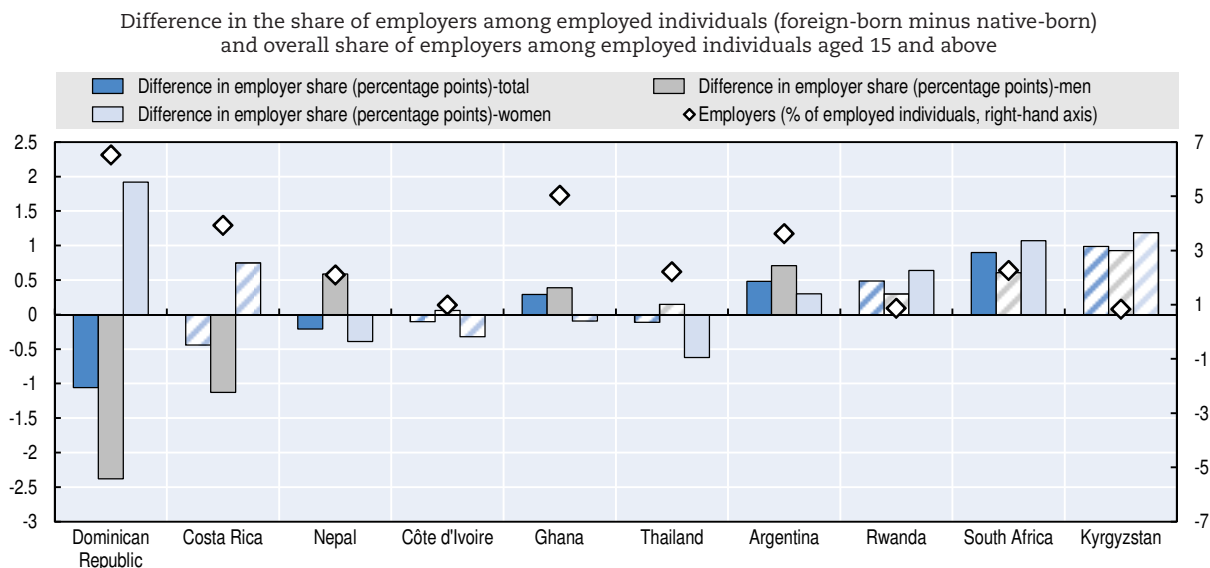
(OECD, 2011). Nevertheless, even in many OECD countries, the reverse is actually true (OECD, 2011). Looking at business start-ups in a sample of 69 countries, the prevalence is higher among the foreign-born than among the native-born population in most regions in the world, but about equal in Eastern Europe and Russia and lower in South and Central America (Vorderwülbecke, 2012).

The following two sub-sections explore the effect of immigration on entrepreneurship in the partner countries. The first sub-section compares the propensity to be an employer between otherwise similar foreign- and native-born workers. The second investigates the effect of the share of immigrants in a local area on the likelihood of owning a business among native-born individuals in the same area.

There is no clear pattern of firm ownership among immigrants versus the native-born

The share of employers is not universally higher among the foreign- than the native-born employed population in partner countries. The overall rate for foreign- compared to native-born workers is lower in the Dominican Republic and Nepal and higher in Argentina, Ghana and South Africa (Figure 5.8). It is not statistically different in Costa Rica, Côte d'Ivoire, Kyrgyzstan, Rwanda and Thailand. A lower share of foreign-born male workers than native-born male workers are employers in Costa Rica and the Dominican Republic, while a higher share are employers in Argentina, Ghana and Nepal. Among female workers, a higher proportion of immigrants are employers in Argentina, the Dominican Republic, Rwanda and South Africa.

Figure 5.8. **The employer share is not necessarily higher among foreign- than native-born workers**



Note: Solid fills indicate that the difference between the shares of employers among foreign- and native-born individuals is statistically significant at the 10% level. The comparison is restricted to the employed population, typically aged 15 and above but for Argentina aged 15-64.

Source: Authors' own work based on the 2010-13 *Life in Kyrgyzstan* survey (IZA, 2016), the 2003-15 *Encuesta Permanente de Hogares* (INDEC, 2003), the 2010 *Census of the Dominican Republic* (ONE, 2012), the 2010-14 *Encuesta Nacional de Hogares* (INEC, 2010-14), the 2008 *Enquête sur le niveau de vie des ménages* (INS, 2008), the *Community Survey 2007* (STATS SA, 2007), the *Integrated Household Living Conditions Survey* (NISR, 2014a) and samples of the 2001 and 2010 *Nepali National Population and Housing Censuses* (CBS, 2001 and 2010), 2002 and 2010 *Ghanaian censuses* (GSS, 2002 and 2010), 2001 and 2011 *South African censuses* (STATS SA, 2001 and 2011) and the *Thai Population and Housing Census 2010* (NSO, 2010).

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While there is no clear pattern in the difference between the foreign- and native-born employer share, it does appear that in the most partner countries, immigrants are either equally or more entrepreneurial than native-born individuals (Table 5.4). Once basic demographic and educational characteristics and the region of residence are taken into account, immigrants are more likely to be employers than similar native-born individuals in Argentina, Costa Rica, Kyrgyzstan, Rwanda, South Africa and Thailand. In Côte d'Ivoire and Ghana, immigrant workers are neither more nor less likely to be employers; and in the Dominican Republic and Nepal, they are less likely to be so.

Table 5.4. In most partner countries, foreign-born workers are as likely as native-born workers to be employers, or more so

Marginal effect of being an immigrant, holding demographic, educational and regional characteristics constant

	Total	Men	Women
Argentina	0.8***	0.8***	0.7***
Côte d'Ivoire	-0.1	-0.2	-0.1
Costa Rica	1.1*	-0.9*	0.6**
Dominican Republic	-1.0***	-0.6***	2.9***
Ghana	0.2	0.2	0.1
Kyrgyzstan	0.6**	0.5	0.6**
Nepal	-0.2***	0.2***	-0.3***
Rwanda	0.7*	1.0*	0.4*
South Africa	1.1***	1.3***	0.8***
Thailand	0.7**	1.0**	0.3

Note: The control variables are age, age squared, sex, highest educational attainment and region. ***/**/* indicate that the marginal effect is statistically significant at the 1/5/10% level.

Source: Authors' own work based on the 2010-13 *Life in Kyrgyzstan* survey (IZA, 2016), the 2003-15 *Encuesta Permanente de Hogares* (INDEC, 2003), the 2010 Census of the Dominican Republic (ONE, 2012), the 2010-14 *Encuesta Nacional de Hogares* (INEC, 2010-14), the 2008 *Enquête sur le niveau de vie des ménages* (INS, 2008), the 2007 *Community Survey* (STATS SA, 2007), the 2013/2014 *Integrated Household Living Conditions Survey* (NISR, 2014b) and samples of the 2001 and 2010 Nepali (CBS, 2001 and 2010), 2002 and 2010 Ghanaian (GSS, 2002 and 2010), 2001 and 2011 South African (STATS SA, 2001 and 2011) and 2010 Thai Population and Housing (NSO, 2010) Censuses.

In two out of a sample of four partner countries, foreign-born employers do not disproportionately own larger or smaller companies. In the Dominican Republic and Rwanda, the share of immigrants who are employers is lower in microenterprises but higher among small and medium-to-large sized companies. In Argentina and Costa Rica, a higher share of foreign-born employers own micro-enterprises (2-9 employees) and a lower share own smaller enterprises (11-49 employees). The relationship holds when taking into account the employer's age, sex and education level.¹³ In the other countries, some of the differences in shares are statistically significant but the relationship cannot be established when immigrants' age, sex and education level are taken into account.

Immigrants may affect entrepreneurial activities of native-born individuals

Immigrants may increase the average business ownership rate by facilitating entrepreneurship among native-born individuals. There are a few reasons why this could happen. For example, native-born workers could find it easier to hire workers with the right skills either for their businesses, or for taking care of some non-remunerated activities (such as child care) that had previously kept them from being employers. They could spot new business opportunities that are linked to immigrant individuals as consumers or immigrant-owned businesses as providers or buyers of intermediate input. Finally, overall boosts to

economic growth thanks to immigration can also make it easier to start new businesses. But it is also possible – as some interviewees in the sector study suggested – that native-born workers are discouraged from starting businesses when there are many foreign-born entrepreneurs in their local area.

This secondary effect can also be analysed. In particular, it was investigated whether native-born individuals, aged 15 or older, that live in areas with higher concentrations of immigrants have a higher likelihood of owning a business than native-born individuals similar in terms of sex, age and education that live in areas with lower concentrations of immigrants.¹⁴ The analysis relies on census data for the most recent year.¹⁵ Since immigrants are not randomly distributed across the country, additional analysis using an instrument was performed where data were available. The immigrant share from earlier years were used to “instrument” the immigrant share in the most recent census (for a similar approach for the Dominican Republic, see Sousa, Sanchez and Baez, 2017). This instrumental variable approach relies on the fact that immigrants often move to areas where other immigrants from their home country already live.

The analysis shows a positive correlation between the immigrant concentration and entrepreneurial activity among native-born workers in most partner countries. The exception is Argentina where a higher concentration of immigrants in an area is associated with a lower likelihood of native-born individuals being business owners (Table 5.5). For Costa Rica, the Dominican Republic and South Africa, native-born individuals are more likely to own a business if they live in an area with a higher concentration of immigrants. In probit regressions of the native-born population aged 15 and above in which the business ownership is the dependent variable and sex, age, education, region and rural status are controlled for, the marginal effect of the immigrant share is -0.0017 for Argentina, 0.0007 for Costa Rica, 0.0057 for the Dominican Republic and 0.0002 for South Africa. This may appear like a small effect on the business ownership rate, but taking into account the low share of individuals who are business owners, the effect is actually substantial. A ten percentage point increase in the concentration of immigrants in an area is associated with a change in the likelihood of being a business owner ranges from about -65% in Argentina to 35% in South Africa. In the instrumental variable regression, the marginal effects are similar in Argentina and the Dominican Republic but not statistically significant in Costa Rica and South Africa.

Table 5.5. Immigrants’ impact on entrepreneurship among native-born individuals differs across countries

Marginal effect of the share of immigrants in the local area on the likelihood among the native-born population of being an employer

	Argentina	Costa Rica	Dominican Republic	South Africa
Marginal effect (without instrument)	-	+	+	+
Marginal effect (with instrument)	-	0	+	0

Note: The regression is restricted to the population aged 15 and above. + indicates a positive marginal effect, - a negative one and 0 that the estimated marginal effect was not statistically significant at the 10% level.

Source: Authors’ own work based on census samples from the Minnesota Population Center (2017).

Despite the numerous potential benefits of increased entrepreneurial activities, not all new businesses create jobs or innovate. A positive correlation between the share of immigrants in the local area and the rate of entrepreneurial activities of native-born individuals does not necessarily increase growth. Governments should therefore review their policies to ensure that incentives are geared towards new enterprises with a high probability

of succeeding (Shane, 2009). Two questions merit further research: Were the businesses that native-born individuals created in areas with a high concentration of immigrants started because of new opportunities or as a last resort? And did these businesses have the potential to increase the economy's overall productivity?

Conclusions and policy implications

In the partner countries, immigration is unlikely to lead to a decrease in GDP per capita. GDP per capita can be divided into the share of employed people in the total population and GDP per employed individual. The composition of the immigrant labour force and the employment effects of immigrants drive the first factor. The relative productivity of foreign-born compared to native-born workers and immigration's effect on overall productivity levels drive the second factor.

The chapter provides evidence that immigration is generally associated with a rise in the share of employed people in the total population. In all but Kyrgyzstan and Nepal, the share of the employed foreign-born population is higher than the equivalent share among the native-born population, in some cases drastically so. And in most partner countries, immigrants do not appear to have a negative effect on the employment of native-born workers.

If the relative productivity of foreign- to native-born workers in a sector equals the ratio of their years of schooling, the estimated direct contribution of immigrants to value added exceeds their share among the employed in half of the partner countries. This estimation, however, does not reflect that immigrants may have further effects on productivity.

The evidence on the effect of immigration on productivity is less clear. Depending on data availability, different research methods were employed:

- Modelling exercises for South Africa and Thailand suggest that complementarity between foreign- and native-born workers is an important factor determining the growth effects of immigration. They also imply that in South Africa, low-skilled immigrant workers, and the high-skilled to a lesser degree, raised GDP per capita and employment opportunities for native-born workers.
- Qualitative sector studies in Côte d'Ivoire, Ghana, Kyrgyzstan and Nepal underline mutual learning opportunities as well as the positive and negative effects of potentially increased competition on native-born employees and employers. These studies suggest that skilled immigration and immigrant entrepreneurship can raise the productivity of surviving firms. But in some cases, they may make the market entry or survival of firms of native-born individuals more challenging.
- Trade data did not provide clear evidence of immigration-induced productivity gains at the sectoral level in five of the partner countries.
- Enterprise survey data for Côte d'Ivoire suggest that productivity in immigrant-employing informal firms may be more elevated than in firms without immigrants. However, a similar result was not established for formal and informal firms in Rwanda and formal firms in Nepal.
- In some countries – most notably the Dominican Republic – immigration may boost entrepreneurial activity overall, which could have positive productivity effects in the medium and long term.

Given the data limitations for the study of productivity, especially in relation to immigration in developing countries, the results presented in this chapter must be

interpreted with caution. Formulating precise policy implications in the face of these difficulties is a precarious undertaking. Nonetheless, numerous actions could contribute to improving the effect of immigration on GDP per capita. These include boosting immigrants' participation in the labour force, stimulating their integration into the labour market, increasing the degree of complementarity between foreign- and native-born workers, and identifying and removing general obstacles to productivity growth. The ways to achieve these would necessarily be country-specific:

- Increasing immigrants' participation in the labour force may be hard to achieve in some countries where the concentration of immigrants among the working-age population and their employment-to-population ratio are already high.
- Providing language courses could help immigrants better use their skills and hence integrate into the labour market. This makes sense where many immigrants do not already speak the local language(s). As suggested by the sector study, improved language skills would not only benefit the immigrants themselves, but also increase mutual learning between foreign- and native-born workers, and therefore potentially raise productivity.
- Policies that attract immigrants to occupations where skills shortages exist could increase the complementarity between foreign- and native-born workers. But countries face challenges in planning and implementing these.
- Therefore, policies that do not concern migration in particular but aim at reducing general barriers to productivity growth may be the most fruitful. Nevertheless, facilitating the immigration of investors can be part of this effort. Credit constraints often make it difficult for entrepreneurs to start or grow their businesses; this can limit productivity growth. Allowing immigrants to start their own companies, either alone or together with native-born workers, could help in this area.

Finally, immigration's effect on economic growth would benefit from more research. In particular, collecting and analysing additional enterprise survey data could increase governments' understanding not only of immigration's impact on productivity and entrepreneurship, but of productivity dynamics and obstacles in general. If data were collected on a sample of the same firms over time, the amount that could be learned would be even greater.

Notes

1. In technical terms, this is a closed economy with fixed capital stock, homogeneous labour and constant returns to scale.
2. GDP per capita can be decomposed as follows:

$$\frac{GDP}{POP} = \frac{GDP}{EMP} * \frac{EMP}{POP} = \frac{GDP}{EMP} * \frac{EMP}{WAPOP} * \frac{WAPOP}{POP}$$

where POP is the population, WAPOP is the population of working age and EMP is employment. Note that labour market analysis (e.g. in Chapter 3) usually focuses on EMP/WAPOP (the employment-to-population ratio or employment rate), which is different from the variable EMP/POP.

3. This can be shown on the basis of a standard Cobb-Douglas production function (Aleksynska and Tritah, 2015; Jaumotte, Koloskova and Saxena, 2016):

$$\frac{GDP_{dt}}{EMP_{dt}} = \alpha \ln HC_{dt} + (1 - \alpha) \ln \frac{K_{dt}}{EMP_{dt}} + \ln A_{dt}$$

where HC_{dt} is human capital per worker, $\frac{K_{dt}}{EMP_{dt}}$ is the capital-to-labour ratio, A_{dt} is total factor productivity and α is the labour share.

4. The PEP Modelling and Policy Impact Analysis programme assists researchers in developing countries in constructing models of their national economies. These models are used to simulate the impact of economic shocks and policies. For details, see www.pep-net.org/pep-1-t-single-country-recursive-dynamic-version.
5. The Inforum group is a satellite of the International Input-Output Association. Various types of Inforum models are used to simulate the impact of economic shocks and policies in many countries. For details, see www.inforum.umd.edu/.
6. Information on labour-related income of foreign-born and native-born workers in South Africa is available from the Quarterly Labour Force Survey, 2012, Quarter 3.
7. See the quarterly reports from the Ghana Investment Promotion Centre available at www.gipcghana.com/press-and-media/downloads/reports.html.
8. This pattern is not universal, as large numbers of low-skilled immigrant workers continue to be recruited in the mining sector in South Africa, for example.
9. Stricter definitions of overrepresentation – including only sectors with 50% to 100% more immigrants than could be expected from the general share of immigrants in the labour force – showed similar results.
10. Data for the Dominican Republic was not available in time, and is therefore not included in the analysis.
11. Recent household surveys for Nepal did not contain questions on both countries of birth and citizenship.
12. In the Rwandan enterprise survey, the capital question is categorical. Categories are 1) less than 500 000, 2) 500 000-15 000 000, 3) more than 15 million to 74 million and 4) more than 74 million. In the calculations, capital per employee is used; it is calculated using the midpoint of the categories. For the fourth category the increase for the first three categories is extrapolated.
13. The analysis method was ordered logit regressions.
14. The immigrant concentration was calculated for the second subnational division, referring to the department in Argentina, the canton in Costa Rica and the municipality in the Dominican Republic. For South Africa the analysis was instead based on the magisterial district, a local determinant of a geographical area which was included in the census data of 1996 and 2001.
15. For South Africa, the most recent census did not distinguish between being self-employed and being an employer. Therefore analysis was based on the census of 2001, with the immigrant share based on the census of 1996/1984 as an instrument.

References

- Abbott, P., I. Murenzi and S. Musana (2012), “The role of non-farm household enterprises in poverty reduction, employment creation and economic growth in Rwanda”, *Rwanda Journal*, Vol. 26 Series B 2012: Social Sciences.
- Acemoglu, D. and D. Autor (undated), *Lectures in labor economics*, <https://pdfs.semanticscholar.org/0d61/12107d96c73eddb5c2964f50417680cdc2ae.pdf>.
- Adjavon, J. (2013), “Trading activities of Chinese migrants in the central business district of Accra”, MA (Migration Studies) Dissertation, Centre for Migration Studies, University of Ghana, Accra.
- Ahmad, N. and R. G. Seymour (2008), “Defining entrepreneurial activity: Definitions supporting frameworks for data collection”, *OECD Statistics Working Paper*, STD/DOC(2008)1, OECD Publishing, Paris, <http://dx.doi.org/10.1787/243164686763>.
- Akcigit, U., J. Grigsby and T. Nicholas (2017) “Immigration and the rise of American ingenuity”, *American Economic Review*, Vol. 107/5, pp. 327-331, <http://doi.org/10.1257/aer.p20171021>.
- Aleksynska, M. and A. Tritah (2015), “The heterogeneity of immigrants, host countries’ income and productivity: A channel accounting approach”, *Economic Inquiry*, Vol. 53/1, pp. 150-172.
- Alesina, A., J. Harnoss and H. Rapoport (2016), “Birthplace diversity and economic prosperity”, *Journal of Economic Growth*, Vol. 21, pp. 101-138, <https://doi.org/10.1007/s10887-016-9127-6>.
- Amonoo, W.N.S. (2014), “Dynamics of small-scale mining activities in some selected communities in the Amansie West District”, MA (Migration Studies) Dissertation, Centre for Migration Studies, University of Ghana, Accra.

- Anjos, C. and P. Campos (2010), "The role of social networks in the projection of international migration flows: An agent-based approach", UN Statistical Commission, UN Economic Commission for Europe and Eurostat Conference of European Statisticians, Lisbon, Portugal, April.
- Bahar, D. and H. Rapoport (forthcoming), "Migration, knowledge diffusion and the comparative advantage of nations", *Economic Journal*.
- Baum, T. (2012), "Migrant workers in the international hotel industry", *International Migration Paper* No. 112, International Labour Office, Geneva.
- Baumol, W. J. (1990), "Entrepreneurship: Productive, unproductive, and destructive", *Journal of Political Economy*, Vol. 98/5, pp. 893-921, www.jstor.org/stable/2937617.
- Becker, G. S. (1994), *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, 3rd ed., www.nber.org/books/beck94-1.
- Bodvarsson, Ö.B. and H. Van den Berg (2013), *The Economics of Immigration: Theory and Policy*, 2nd ed., Springer, New York.
- Böhme, M. and S. Kups (2017), "The economic effects of labour immigration in developing countries: A literature review", *OECD Development Centre Working Paper* No. 335, <http://dx.doi.org/10.1787/c3cbdd52-en>.
- Borgy, V. et al. (2010), "Macroeconomic consequences of global endogenous migration: A general equilibrium analysis", *Annales d'Économie et de Statistique*, No. 97/98, pp. 13-39, <http://dialnet.unirioja.es/servlet/articulo?codigo=3940380>.
- Borjas, G. J. (1999), "Chapter 28 – The economic analysis of immigration", in Ashenfelter, O.C. and D. Card (eds.), *Handbook of Labour Economics*, Vol. 3, Part A, Elsevier Science BV., Amsterdam, pp. 1697-1760.
- Boubtane, E., D. Coulibaly, H. d'Albis (2015), "Immigration policy and macroeconomic performance in France", *Études et Documents CERDI*, No. 5, <https://hal.archives-ouvertes.fr/halshs-01135389/document>.
- Boubtane, E., J.-C. Dumont and C. Rault (2016), "Immigration and economic growth in the OECD countries, 1986-2006", *Oxford Economic Papers*, Vol. 68/1, pp. 340-360, <https://doi.org/10.1093/oenp/gpw001>.
- Bretschger, L. (2001), "Labour supply, migration and long-term development", *Open Economies Review*, Vol. 12/1, pp. 5-27, <https://doi.org/10.1023/A:1026502909466>.
- CBS (2013), *Nepal National Census of Manufacturing Establishments 2011-2012 (CME 2011-2012)*, Central Bureau of Statistics, Kathmandu, <http://cbs.gov.np/nada/index.php/catalog>.
- CBS (2011), *National Population and Housing Census 2011*, Central Bureau of Statistics, Kathmandu.
- CBS (2001), *National Population and Housing Census 2001*, Central Bureau of Statistics, Kathmandu.
- Conningarth Economists (2017), *Assessing the Economic Contribution of Labour Migration In South Africa by a Dynamic Multisectoral Macroeconomic Model*, Pretoria.
- Daude, C. and E. Fernández-Arias (2010), "On the role of productivity and factor accumulation in economic development in Latin America and the Caribbean", *IDB Working Paper Series*, No. 155, www.iadb.org/res/publications/pubfiles/pubIDB-WP-155.pdf.
- DESA/UNSD (undated), *United Nations Comtrade database*, <https://comtrade.un.org>.
- Docquier, F. and E. Lodigiani, E. (2010), "Skilled Migration and Business Networks", *Open Economies Review*, Vol. 21/4, pp 565-588.
- Dolado, J. A. Gloria and A. Ichino (1994), "Immigration, human capital and growth in the host country", *Journal of Population Economics*, Vol. 7/2, pp. 193-215, <https://doi.org/10.1007/BF00173619>.
- Duleep, H. O., D. A. Jaeger and M. Regets (2012), "How immigration may affect US native entrepreneurship: Theoretical building blocks and preliminary results", *IZA Discussion Paper*, No. 6677, <http://ftp.iza.org/dp6677.pdf>.
- Erken, H., P. Donselaar and R. Thurik (2016), "Total factor productivity and the role of entrepreneurship", *The Journal of Technology Transfer*, pp. 1-29, <https://doi.org/10.1007/s10961-016-9504-5>.
- Fairlie, R. W. and B. D. Meyer (2003), "The effect of immigration on native-born self-employment", *Journal of Labor Economics*, Vol. 23/3, pp. 619-650, www.jstor.org/stable/10.1086/374961.
- Felbermayr, G. J., S. Hiller and D. Sala (2010), "Does immigration boost per capita income?", *Economics Letters*, Vol. 107/2, pp. 177-179, <https://doi.org/10.1016/j.econlet.2010.01.017>.
- Flahaux, M. and H. de Haas (2016), "African migration: Trends, patterns, drivers", *Comparative Migration Studies*, Vol. 4/1, pp. 1-25.

- GSS (2010), *Population and Housing Census*, Ghana Statistical Service, Accra.
- GSS (2002), *Population and Housing Census*, Ghana Statistical Service, Accra.
- ILO (2015a), *Global Estimates of Migrant Workers and Domestic Workers: Results and Methodology*, International Labour Office, Geneva.
- ILO (2015b), *World Employment and Social Outlook: Trends 2015*, International Labour Office, Geneva.
- ILO/OECD/World Bank (2015), *The Contribution of Labour Mobility to Economic Growth*, paper prepared for the 3rd meeting of the G20 Employment Working Group, Cappadocia, Turkey, 23-25 July 2015, www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_398078.pdf.
- INDEC (2003), *La Nueva Encuesta Permanente de Hogares de Argentina*, Instituto Nacional de Estadísticas y Censos, Buenos Aires.
- INEC (2010-14), *Encuesta Nacional de Hogares*, Instituto Nacional de Estadística y Censos, San José.
- INS (2016), *Enquête nationale de la situation d'emploi et du secteur informel*, Institut National de la Statistique, Abidjan.
- INS (2008), *Enquête sur le niveau de vie des ménages*, Institut National de la Statistique, Abidjan.
- IZA (2016), *Life in Kyrgyzstan Study, 2010-2013, Version 1.0 (data set)*, Investigators: German Institute for Economic Research (DIW Berlin) and Stockholm International Peace Research Institute (SIPRI), Research Data Center of the Institute of the Labor Economics (IZA), Bonn, DOI: 10.15185/izadp.7055.1.
- Jaumotte, F., K. Koloskova and S. C. Saxena (2016), "Impact of migration on income levels in advanced economies", *IMF Spillover Notes*, No. 8, Washington, DC.
- Kang, Y. and B.-Y. Kim (2012), "Immigration and economic growth: Do origin and destination matter?", *MPPRA Working Paper*, No. 39695.
- Martin, P. (2007), *The Economic Contribution of Migrant Workers to Thailand: Towards Policy Development*, International Labour Office, Bangkok, http://ilo.org/asia/whatwedo/publications/WCMS_098230/lang--en/index.htm.
- Minnesota Population Center (2017), *Integrated Public Use Microdata Series, International: Version 6.4 (machine-readable database)*, University of Minnesota, Minneapolis.
- Mitaritonna, C., G. Orefice and G. Peri (2017), "Immigrants and firms' productivity: Evidence from France", *European Economic Review*, Vol. 96, pp. 62-82, <https://doi.org/10.1016/j.eurocorev.2017.05.001>.
- Mohan, G. and D. Kale (2007), "The invisible hand of South-South globalisation: Chinese migrants in Africa", report for the Rockefeller Foundation prepared by The Development Policy and Practice Department, The Open University, Milton Keynes, UK.
- Muysken, J. and T. H. W. Ziesemer (2011), "The effect of net immigration on economic growth in an ageing economy: Transitory and permanent shocks", *UNU-MERIT Working Paper*, No. 2011-055.
- NISR (2014a), *Integrated Business Enterprise Survey*, National Institute of Statistics of Rwanda, Kigali, <http://statistics.gov.rw/publication/integrated-business-enterprise-survey-ibes-2014>.
- NISR (2014b), *Integrated Household Living Conditions Survey (EICV4)*, National Institute of Statistics of Rwanda, Kigali, <http://microdata.statistics.gov.rw/index.php/catalog/73/study-description>.
- NSO (2010), *Population and Housing Census 2010*, National Statistical Office of Thailand, Bangkok.
- OECD (2011), "Migrant entrepreneurship in OECD countries", *International Migration Outlook 2011*, OECD Publishing, Paris, http://dx.doi.org/10.1787/migr_outlook-2011-en.
- OECD (2001), *Measuring Productivity – OECD Manual: Measurement of Aggregate and Industry-Level Productivity Growth*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264194519-en>.
- OECD/ILO (2017a), *How Immigrants Contribute to Kyrgyzstan's Economy*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264287303-en>.
- OECD/ILO (2017b), *How Immigrants Contribute to Thailand's Economy*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264287747-en>.
- OECD/ILO (forthcoming a), *How Immigrants Contribute to Côte d'Ivoire's Economy*, OECD Publishing, Paris.
- OECD/ILO (forthcoming b), *How Immigrants Contribute to Ghana's Economy*, OECD Publishing, Paris.
- OECD/ILO (forthcoming c), *How Immigrants Contribute to Nepal's Economy*, OECD Publishing, Paris.
- OECD/ILO (forthcoming d), *How Immigrants Contribute to South Africa's Economy*, OECD Publishing, Paris.

- ONE (2012), *2010 Census of the Dominican Republic*, National Statistical Office of the Dominican Republic, Santo Domingo.
- Orefice, G. (2010), "Skilled migration and economic performances: Evidence from OECD countries", *Discussion Papers (IRES – Institut de Recherches Economiques et Sociales)*, Université catholique de Louvain, Institut de Recherches Economiques et Sociales, <http://ideas.repec.org/p/ctl/louvir/2010015.html>.
- Ortega, F. and G. Peri (2014), "The aggregate effects of trade and migration: Evidence from OECD countries", in A. Artal-Tur, G. Peri and R. Requena-Silvente (eds.), *The Socio-Economic Impact of Migration Flows*, Springer International Publishing.
- Ortega, F. and G. Peri (2009), "The causes and effects of international migrations: Evidence from OECD Countries 1980-2005", *NBER Working Paper*, No. 14833, www.nber.org/papers/w14833.
- Paserman, M. D. (2013), "Do high-skill immigrants raise productivity? Evidence from Israeli manufacturing firms, 1990-1999", *IZA Journal of Migration*, Vol. 2/6, <https://link.springer.com/content/pdf/10.1186%2F2193-9039-2-6.pdf>.
- Peri, G. (2012a), "Task specialization, immigration, and wages", *American Economic Journal: Applied Economics*, Vol. 1/3, pp. 135-169, <https://doi.org/10.1257/app.1.3.135>.
- Peri, G. (2012b), "The effect of immigration on productivity: Evidence from US states", *Review of Economics and Statistics*, Vol. 94/1, pp. 348-358, www.mitpressjournals.org/doi/abs/10.1162/REST_a_00137.
- Puttanapong, N., K. Limskul and T. Bowonthumrongchai (2017), *Study on Macroeconomic Impacts of Immigration Using a SAM-Based CGE Model*, Bangkok.
- Reichlin, P. and A. Rustichini (1998), "Diverging patterns with endogenous labor migration", *Journal of Economic Dynamics and Control*, Vol. 22/5, pp. 703-728, [https://doi.org/10.1016/S0165-1889\(97\)00079-1](https://doi.org/10.1016/S0165-1889(97)00079-1).
- Shane, S. (2009), "Why encouraging more people to become entrepreneurs is bad public policy", *Small Business Economics*, Vol. 33:2, pp. 141-149
- Sousa, L. D., D. Sanchez and J. E. Baez (2017), "Wage effects of Haitian migration in the Dominican Republic", in F. G. Carneiro and S. Sirtaine (eds.), *When Growth is Not Enough – Explaining the Rigidity of Poverty in the Dominican Republic*, Directions in Development, World Bank, Washington, DC.
- STATS SA (2010), *Census 2010*, Statistics South Africa, Pretoria.
- STATS SA (2007), *Community Survey 2007*, Statistics South Africa, Pretoria.
- STATS SA (2001), *Census 2001*, Statistics South Africa, Pretoria.
- Trax, M., S. Brunow and J. Suedekum (2015), "Cultural diversity and plant-level productivity", *Regional Science and Urban Economics*, Vol. 53, pp. 85-96, <https://doi.org/10.1016/j.regsciurbeco.2015.05.004>.
- UN DESA (2016), *International Migration Report 2015: Highlights*, United Nations Department of Economic and Social Affairs, Population Division, New York.
- Van Stel, A., M. Carree and R. Thurik (2005), "The effect of entrepreneurial activity on national economic growth", *Small Business Economics*, 24, pp. 311-321, <https://doi.org/10.1007/s11187-005-1996-6>.
- Vorderwülbecke, A. (2012), "Entrepreneurship and migration", *Global Entrepreneurship Monitor 2012 Global Report*, pp. 42-50, www.gemconsortium.org/report/48545.
- World Bank (2016), *Global Monitoring Report 2015/2016: Development Goals in an Era of Demographic Change*, World Bank, Washington, DC.
- Zhou, M. (2006), "Revisiting ethnic entrepreneurship: Convergencies, controversies, and conceptual advancements", *International Migration Review*, Vol. 38/3, pp. 1040-1074, <https://doi.org/10.1111/j.1747-7379.2004.tb00228.x>.

ANNEX 5.A1

*Interviews and focus group discussions conducted for the sector studies*Table 5.A1.1. **Interviews and focus group discussions conducted for the sector studies**

	Research institution	Interviews with key informants	Interviews with enterprise representatives	Focus group discussions
Côte d'Ivoire	Laboratoire de Sociologie Économique et d'Anthropologie des Appartenances Symboliques de l'Université Félix Houphouët-Boigny d'Abidjan	28	22	20
Ghana	Centre for Migration Studies, University of Ghana	37	23	19
Kyrgyzstan	Dialecticon LLC	19	60	10
Nepal	Centre for the Study of Labour and Mobility	54	29	24

Source: OECD/ILO (2017a and forthcoming a, b and c).



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