

## Chapter 3

# Immigrant integration: Labour market outcomes and human capital

*This chapter first reviews indicators on the volume of employment of immigrants in the ten partner countries of the project Assessing the Economic Contribution of Labour Migration in Developing Countries as Countries of Destination. It then turns to indicators on the nature and quality of employment. The focus is on sectoral and occupational change for both native-born and foreign-born workers. The chapter also examines occupational change based on a demographic decomposition method which allows for various comparisons including those between immigrant workers and native-born entrants to the labour market. Finally, the chapter compares the educational attainment of the native-born and the foreign-born and looks into mismatches between jobs and skills.*

The volume and quality of foreign-born employment largely determine the economic contribution of immigrant workers according to the project *Assessing the Economic Contribution of Labour Migration in Developing Countries as Countries of Destination*. An immigrant is defined as someone who was born abroad and is currently living in the country of destination (see Chapter 1).

Five of the ten partner countries are classified as upper-middle-income countries (Argentina, Costa Rica, Dominican Republic, South Africa and Thailand), three are lower-middle-income countries (Côte d'Ivoire, Ghana, and Kyrgyzstan) and the remaining two belong to the low-income group (Nepal and Rwanda). Self-employment is more widespread among these countries than high-income countries, and employment in agriculture often accounts for a large share of the workforce. Most of the partner countries have undergone important structural changes in the past 10-15 years, which affect the employment of both native-born and foreign-born workers.

To assess the labour market integration of immigrants in the dynamic context of structural change, this chapter reviews a series of key labour market indicators (ILO, 2016a).<sup>1</sup> The chapter compares outcomes of the foreign-born with those of the native-born, and labour market outcomes of the latter are thus implicitly adopted as the benchmark (OECD/European Union, 2015). In this way, the chapter also sets the stage for the subsequent chapters in this report on the employment impact of immigration (Chapter 4) and the linkages between immigration and economic growth (Chapter 5) and public finance (Chapter 6).

Foreign-born workers, and in particular young workers, often are well-integrated into the partner countries in terms of employment rates. In half the partner countries, foreign-born workers are relatively young and help counter ageing of the workforce to the extent that they constitute a considerable share of the workforce. Nevertheless, the numbers of immigrant workers are low enough in most partner countries for native-born new young entrants to the labour force to drive labour market changes.

At the same time, sectors and occupations of foreign-born workers are usually associated with low quality employment. For example, immigrant workers have a strong presence in low-skill occupations in most partner countries and are typically overrepresented in construction and in accommodation and food service activities. Low levels of education among immigrant workers often result in low-skill employment. A mismatch between skills and jobs is an additional risk for immigrant workers particularly in medium-skill occupations.

The findings in this chapter suggest that the quality of work performed by immigrants and their access to jobs should be of concern to policy makers. Diversifying the sectors immigrants work in and the occupations themselves could improve the quality. Training immigrant workers and reducing mismatches between skills and jobs are other solutions. Equally important is to ensure that unions and other organisations adequately represent migrant workers. In addition, female immigrant workers often face challenges with regard not only to the quality of employment but also to access to employment.

## Overall labour force growth

Population growth is an important determinant of the size of the labour force. Among the partner countries, population growth was highest in two of the sub-Saharan African countries, Ghana and Rwanda, at an annual rate of 2.7%. It was lowest in Argentina and Thailand, at 1.0 and 0.7%, respectively. These rates apply to the periods listed in Table 3.1, and most of the analysis in this chapter focuses on these periods.<sup>2</sup>

Average annual growth rates of the foreign-born labour force exceeded those of the native-born labour force in most of the partner countries. The exceptions were Côte d'Ivoire, Kyrgyzstan and Nepal. Thailand experienced the highest growth rate (29.1%) as the foreign-born labour force increased from 144 000 people in 2000 to 1.8 million in 2010. The foreign-born labour force reached 1.6 million in South Africa in 2011, over 1 million in Côte d'Ivoire in 2008 and 0.9 million in Argentina in 2010. The number of foreign-born workers in each of the remaining countries did not exceed a quarter of million around 2010. The foreign-born population accounted for less than 5% of the population in all countries except Costa Rica and Côte d'Ivoire. Kyrgyzstan and Nepal experienced annual declines in the foreign-born labour force due to declining foreign-born labour force participation rates.

The increase in the immigrant labour force affected the growth rates of the native-born labour force and the overall labour force in the partner countries differently. In the Dominican Republic, South Africa and Thailand, the growth rates of the native-born labour force rose significantly. In Argentina, Nepal and Rwanda, the native-born rates equalled those of the total labour force, indicating a limited influence by immigrants. In the remaining countries, the difference between the growth rates of the native-born and overall labour forces was small (0.2 percentage points or less in Costa Rica and Ghana) or negative (in Côte d'Ivoire and Kyrgyzstan).

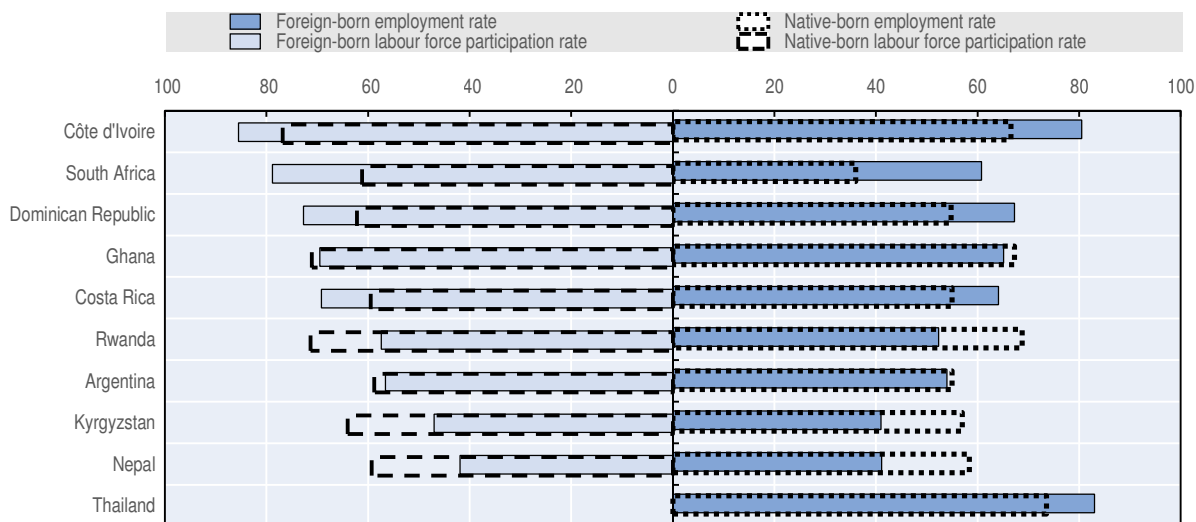
### ***Immigrant workers often have access to employment***

Immigrant workers are often well-integrated into labour markets in terms of labour force participation and employment and unemployment rates. The employment rate for the foreign-born population exceeds the rate for the native-born in five of the partner countries (Costa Rica, Côte d'Ivoire, Dominican Republic, South Africa and Thailand), and the difference between the rates is minimal in two others (Argentina and Ghana) (Figure 3.1). However, in Kyrgyzstan, Nepal and Rwanda, employment rates are considerably lower for foreign-born workers, and labour force participation rates follow the same pattern. The relatively high employment rates of foreign-born workers in most partner countries contrast with relatively low rates in many high-income countries.<sup>3</sup> Relatively high employment rates of the native-born in some countries, including Nepal and Rwanda, may be due to the low incomes per capita and a dominant role of agricultural employment.

Employment rates in all partner countries are lower for women than for men, and in some countries the rates differ according to whether they are foreign- or native-born (Figure 3.2). For example, in Ghana and Nepal foreign-born women have a much lower employment rate than native-born women, while the opposite is true for men in Nepal and to some extent in Ghana. The difference between female foreign-born and native-born employment rates is negligible in Côte d'Ivoire and the Dominican Republic, while there are large differences in the corresponding male employment rates in these countries.

Figure 3.1. **Foreign-born workers' employment and participation rates often exceed those of the native-born**

Labour force participation rate and employment-to-population ratio for foreign-born and native-born workers, most recent time period (%)



Note: No labour force participation data are available for Thailand. For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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Table 3.1. **Immigrant labour force growth usually exceeds native-born labour force growth**

Annual growth rates of the population and labour force by place of birth

	Time periods	Foreign-born population (latest year, %)	Annual population growth (%)	Annual labour force growth (%)		
				All	Native-born	Foreign-born
<b>Kyrgyzstan</b>	1999-2009	4.5	1.7	1.9	2.4	-5.2
<b>Nepal</b>	2001-11	1.9	1.5	0.9	0.9	-2.7
<b>Côte d'Ivoire</b>	1995-2008	7.1	2.6	4.1	4.5	1.7
<b>Costa Rica</b>	2000-11	9.1	1.1	2.3	2.1	3.4
<b>Argentina</b>	2005-15	4.4	1.0	2.9	2.9	3.5
<b>Rwanda</b>	2002-12	3.1	2.7	2.4	2.4	3.6
<b>Ghana</b>	2000-10	1.3	2.7	2.7	2.6	8.5
<b>South Africa</b>	2001-11	4.2	1.8	2.4	1.9	8.9
<b>Dominican Republic</b>	2002-10	4.2	2.1	0.2	-0.4	16.7
<b>Thailand</b>	2000-10	3.8	0.7	1.5	1.0	29.1

Note: Labour force data for Thailand are not available and therefore refer to employment only.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

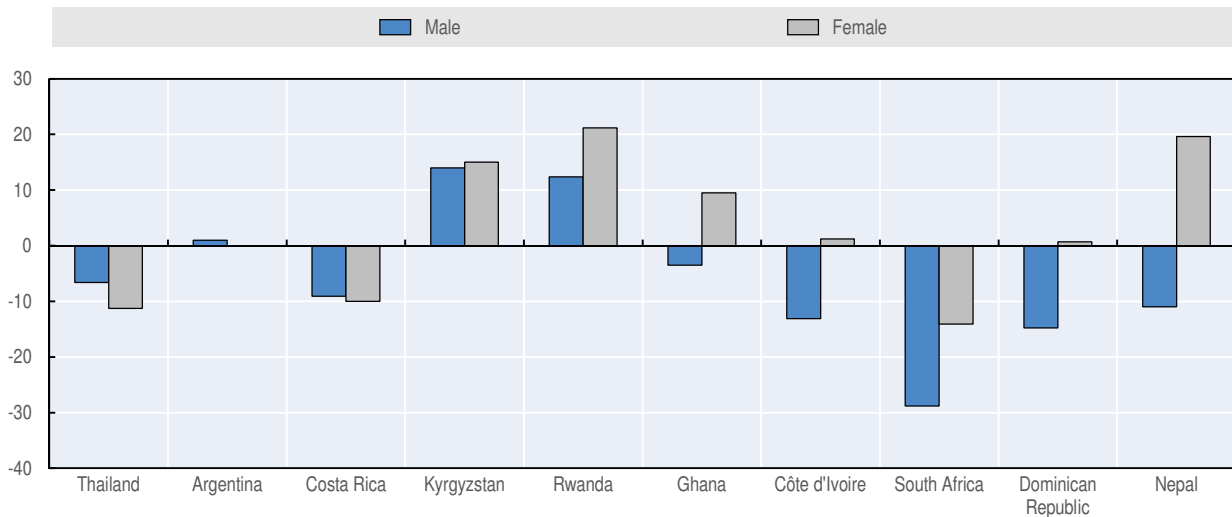
Unemployment rates are often relatively favourable for foreign-born workers. The rate is higher for native-born workers in four partner countries (Argentina, Côte d'Ivoire, Dominican Republic and South Africa), while differences between the two groups are small in Ghana and Nepal (Figure 3.3). In Costa Rica, the two unemployment rates were the same (7.5%). South Africa demonstrated the highest unemployment rates for both the native-born (41.1%) and the foreign-born (22.8%) and also showed the largest difference between the two rates.

Several factors can help explain the integration of immigrant workers in terms of employment and unemployment rates. For example, part of foreign-born employment is pre-arranged, temporary or seasonal, and workers do not stay in the countries of destination

beyond the planned end-date. More limited access to or eligibility for social protection including unemployment benefits may also play a role (see Chapter 2). Yet another reason is that groups of immigrant workers are able to tap into networks of people from a particular country of origin, which increases the likelihood of finding employment (see e.g. OECD/ILO (forthcoming a)).

Figure 3.2. **Male foreign-born employment rates are more likely to exceed native-born employment rates than are female rates**

Differences in male and female employment rates by place of birth (native-born rate minus foreign-born rate, percentage points, most recent period)



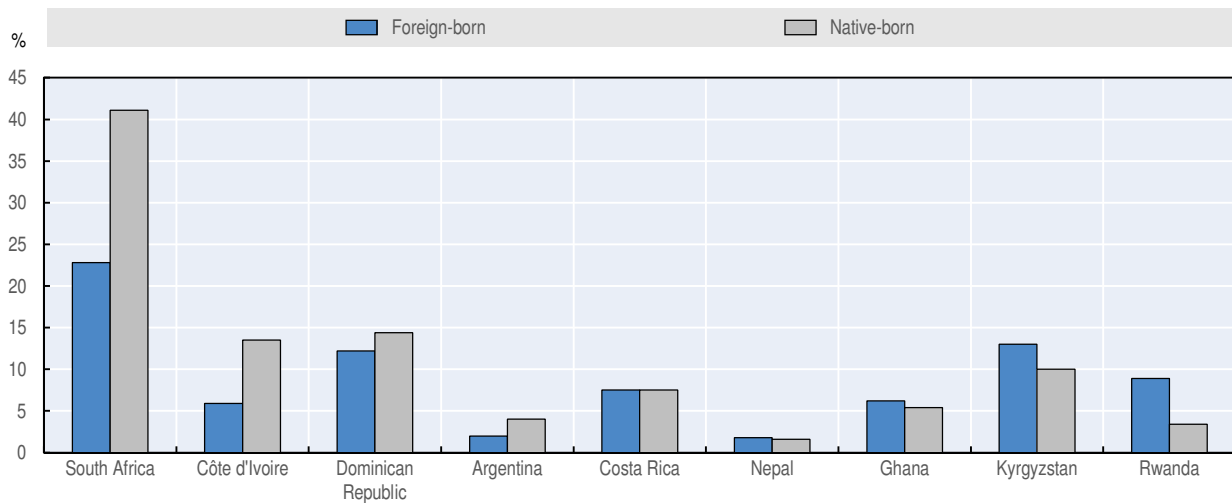
Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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Figure 3.3. **Immigrant unemployment rates are close to or below native-born rates in most countries**

Unemployment rate, by place of birth (%), most recent period)



Note: No unemployment data are available for Thailand. For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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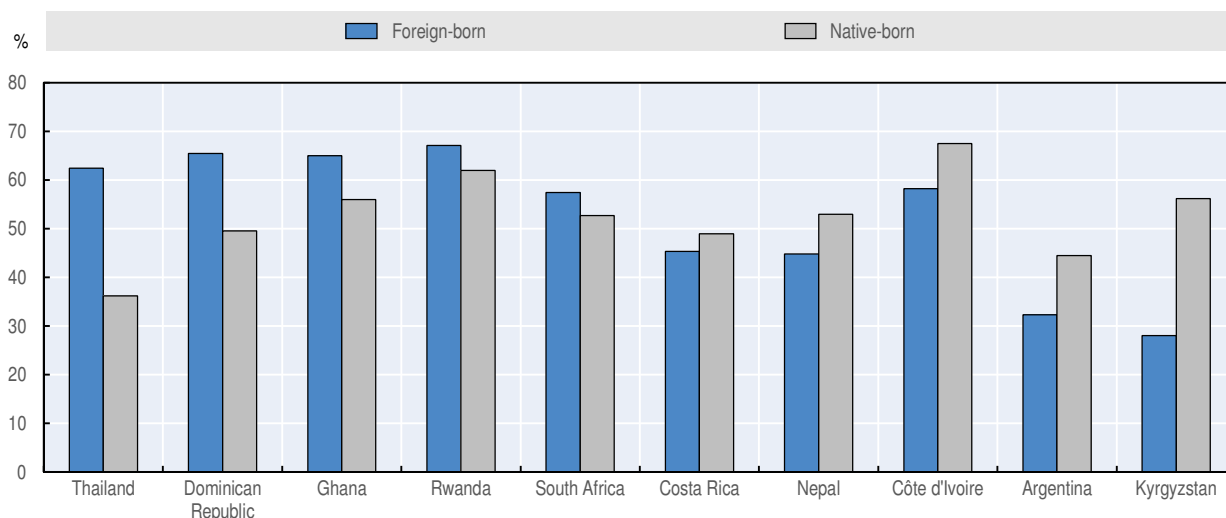
### **Immigrants could play a role in countering ageing of the labour force in some countries**

The total dependency ratio of all countries decreased by 5 to 18 percentage points over the periods indicated in Table 3.1. This ratio is defined as the ratio of people younger than 15 or older than 64 to the population aged 15-64. The decline is largely due to a decreasing share of people aged less than 15 in the population: the child dependency ratio decreased by 6 to 15 percentage points depending on the country. The old-age dependency ratio, on the other hand, remained the same or increased by up to 4 percentage points in all countries except Ghana and Kyrgyzstan, where it fell. Nevertheless, the increase in the old-age dependency ratio did not offset the decline in the child dependency ratio.

Immigration could help counter population ageing and ensure a steady supply of younger workers. According to the United Nations Statistical Department, the total dependency ratio is forecasted to decline within the next 50 years in 5 of the 10 partner countries. However, an increase is expected in Argentina, Costa Rica, the Dominican Republic and Thailand.<sup>4</sup> In the latter two countries, the share of the foreign-born population aged 15-34 is already relatively large. The same is true in an additional three partner countries that are expecting a decline in their dependency ratios (Ghana, Rwanda and South Africa, see Figure 3.4).

**Figure 3.4. Immigrant workers are relatively young in half of the partner countries**

Share of the population aged 15-34 in the population of working age (15 and above), by place of birth (% , most recent period)



Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

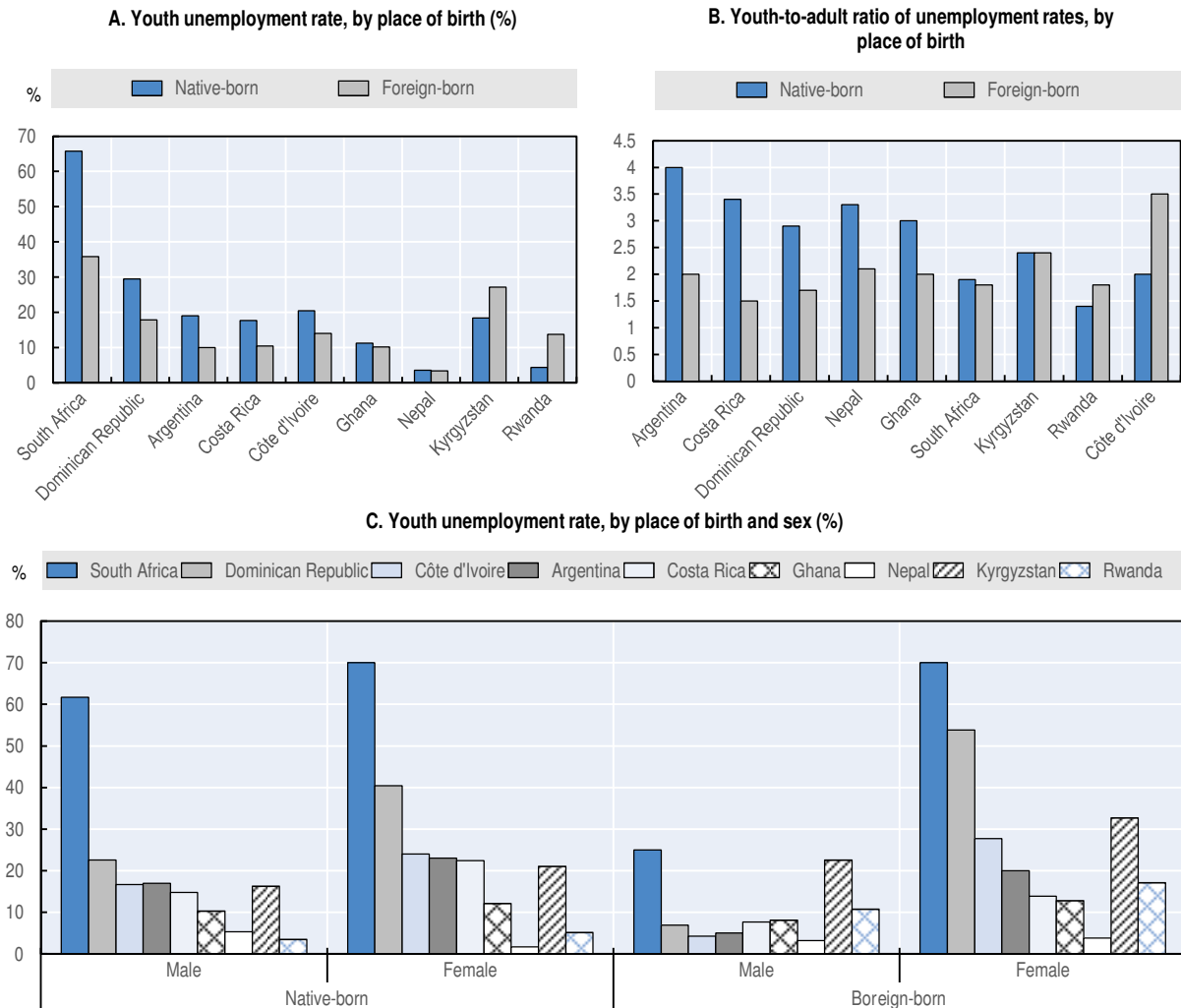
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### **Youth unemployment is less prevalent among immigrant workers**

Youth unemployment is a major concern in most countries around the world. But in the partner countries, it seems less prevalent among immigrant workers than among native-born workers. This again points to labour market integration in terms of access to employment in the partner countries. Only in Kyrgyzstan and Rwanda is the unemployment rate higher for foreign-born youth than for native-born youth (Figure 3.5A). In South Africa, even though levels of youth unemployment are extremely high for all groups of workers, the difference

of unemployment rates between native-born youth (66%) and foreign-born youth (36%) is large as well. Differences between these two groups are not the same for men and women. Although in most countries the male youth unemployment rate is higher for native-born workers, the opposite pattern is seen for female youth (Figure 3.5C). Only in Argentina and Costa Rica are the youth unemployment rates for female native-born workers higher than the rates for female foreign-born workers.

Figure 3.5. **Youth unemployment rates are often lower for foreign-born workers, but not for female youth**



Note: No unemployment data are available for Thailand. For time periods, see Table 3.1. Figures 3.5.A-C are based on the most recent time period for which data was available.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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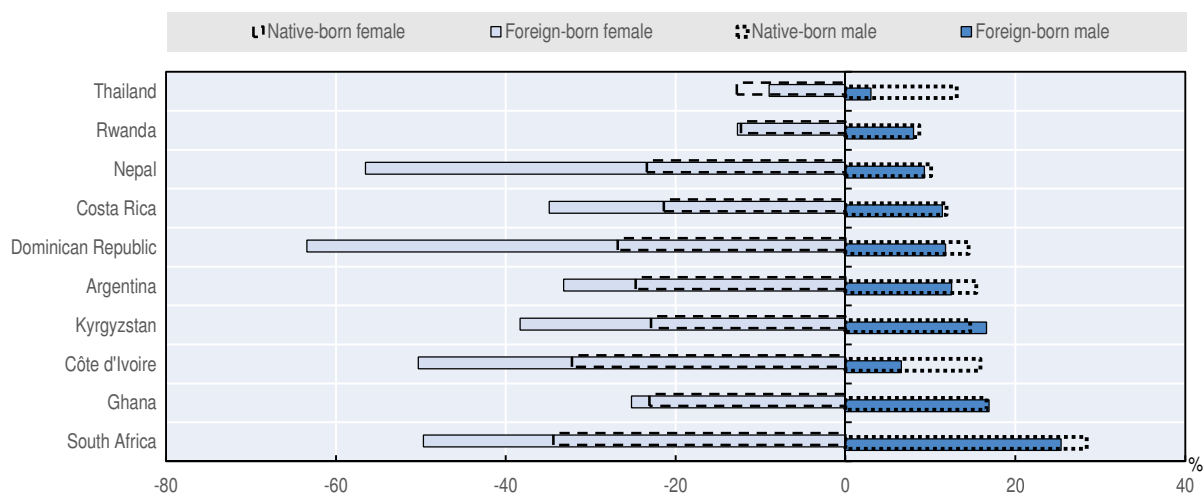
In addition, the lower youth-to-adult ratio of youth unemployment rates for the foreign-born suggests that foreign-born youth have a relatively favourable labour market position in comparison with native-born youth in most countries (Figure 3.5B). However, this ratio does not take the quality of employment into account, and both native-born and foreign-born youth are at a disadvantage in the labour market compared to adults.



Considering the common activities of youth – work or study – it is worthwhile to look at the share of young people not in education, employment or training (NEET). In most countries, the share is higher for native-born males in comparison with immigrant males, but the opposite is true for females (Figure 3.6). A lower unemployment rate among immigrants can be expected because many migrate to the partner countries in search of employment or arrange employment prior to departure. Lower family incomes or barriers to schooling, for example in terms of language skills, may also force young immigrants to work. Added emphasis should be placed on integrating females, as they tend to occupy more disadvantaged positions, in terms of a number of key labour market indicators, in most partner countries.

Figure 3.6. Rates of young foreign-born males not in education, employment or training are low but not those of foreign-born females

NEET rates, by place of birth and sex (% , most recent period)



Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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### Deficits in decent work

Even though immigrant workers seem to be well-integrated in terms of access to employment, integration in terms of employment quality is usually more challenging. Immigrants often face a lack of decent work. This section examines a number of indicators that are important to identify such deficits.

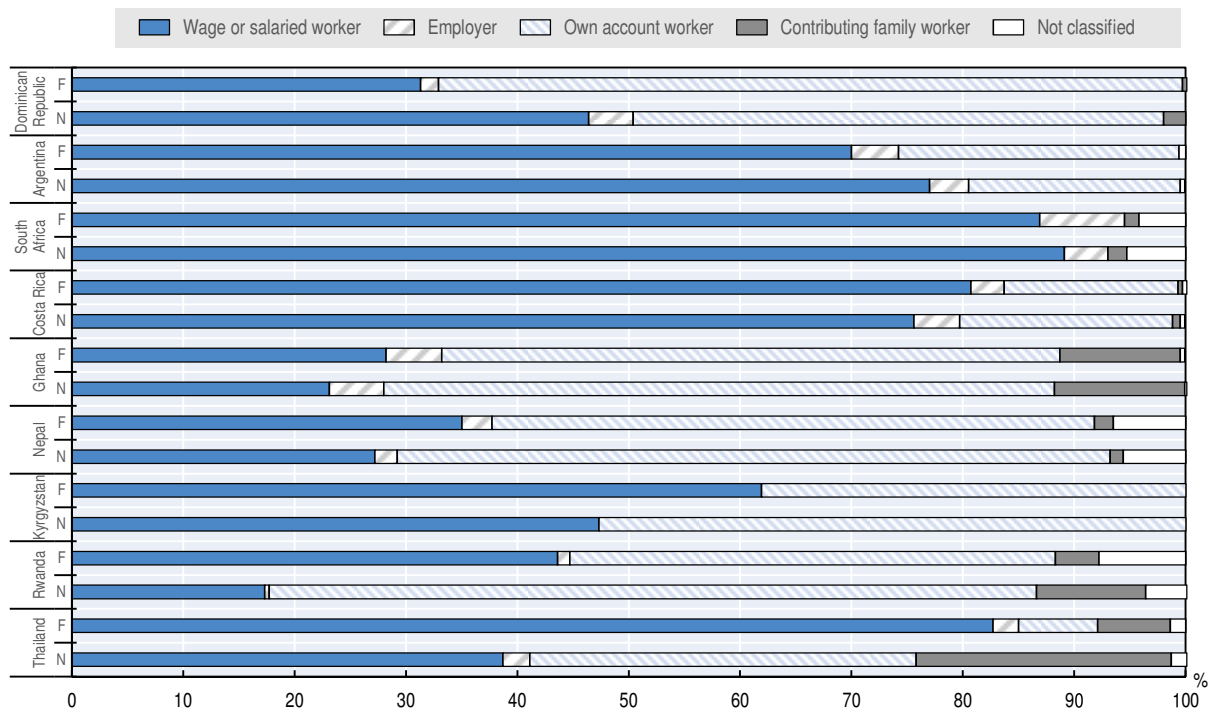
A widely used method to assess the quality of jobs is to consider the evolution of vulnerable and non-vulnerable employment, which is a distinction based on the classification by status in employment. Vulnerable employment consists of the sum of own-account workers and contributing family workers. These workers are less likely to have formal work arrangements. Particularly in low-income countries, and in the absence of social protection, own-account work often serves as a last resort (ILO, 2016b; Sparreboom and Albee, 2011). Nevertheless, non-vulnerable employment may also fall short of decent work if, for example, an important part of wage employment is casual, informal or of limited duration. Deficits in decent work may also be due to poorly enforced labour standards or employment associated with insecurity, which is often the case with non-standard employment (Box 3.1).



### Wage employment is prevalent among immigrant workers but the quality varies

Perhaps surprisingly, in most partner countries vulnerable employment rates for native-born workers exceed those for their foreign-born counterparts in the most recent period. This is due to a relatively high level of wage employment among foreign-born workers (Figure 3.7). In Rwanda and Thailand, the differences in the share of wage employment between the two groups amount to 26 and 44 percentage points, respectively. Exceptions are Argentina and the Dominican Republic, where own account work is relatively prevalent among foreign-born workers. South Africa has the highest rate of wage employment for both native- and foreign-born workers (89.1% and 86.9%, respectively). The lowest rates of wage employment for native-born workers are found in Ghana (23.1%) and Rwanda (17.3%), while the commensurate rates for foreign-born workers in these countries are 28.2% and 43.6%, respectively. In most countries, vulnerable employment decreased over the period under consideration, and foreign-born workers usually benefited to a greater extent than native-born workers (Figure 3.8). One reason for this pattern is the lower dependency of foreign-born workers on employment in agriculture, as will be shown in the next sub-section below.

Figure 3.7. **Wage employment is more prevalent among immigrant workers**  
Status in employment by place of birth (% , most recent period)



Note: F = foreign-born; N = native-born. The share of employers in South Africa includes own account workers. For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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The prevalence of wage employment among the foreign-born reflects several factors. These include arrangements for migrant work such as bilateral agreements (e.g. in Thailand), seasonal wage work among migrant workers in border areas (e.g. in Ghana, South Africa and Thailand) and restrictions on the establishment of enterprises by immigrant workers

(e.g. in Ghana). Nevertheless, the share of employers is relatively high for foreign-born workers in about half of the partner countries, pointing to significant contributions by immigrants to entrepreneurship, in particular in Argentina, Nepal and Rwanda. It therefore appears that own-account work and contributing family work serve less as employment of last resort for foreign-born workers than is often seen, particularly in low-income economies (Sparreboom and Albee, 2011). Only in Nepal is the share of contributing family workers among the foreign-born (marginally) higher than among native-born workers.

Nevertheless, foreign-born workers frequently earn lower wages and have poorer working conditions. For example, foreign-born workers face wage penalties in countries such as Argentina and South Africa (see Chapter 4). Immigrants may also suffer from their concentration in particular sectors and occupations as discussed below.

Figure 3.8. **Immigrant workers benefit from a decrease in vulnerable employment in most partner countries**



Note: Time periods correspond to those in Table 3.1 except for Argentina (2010-15).

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

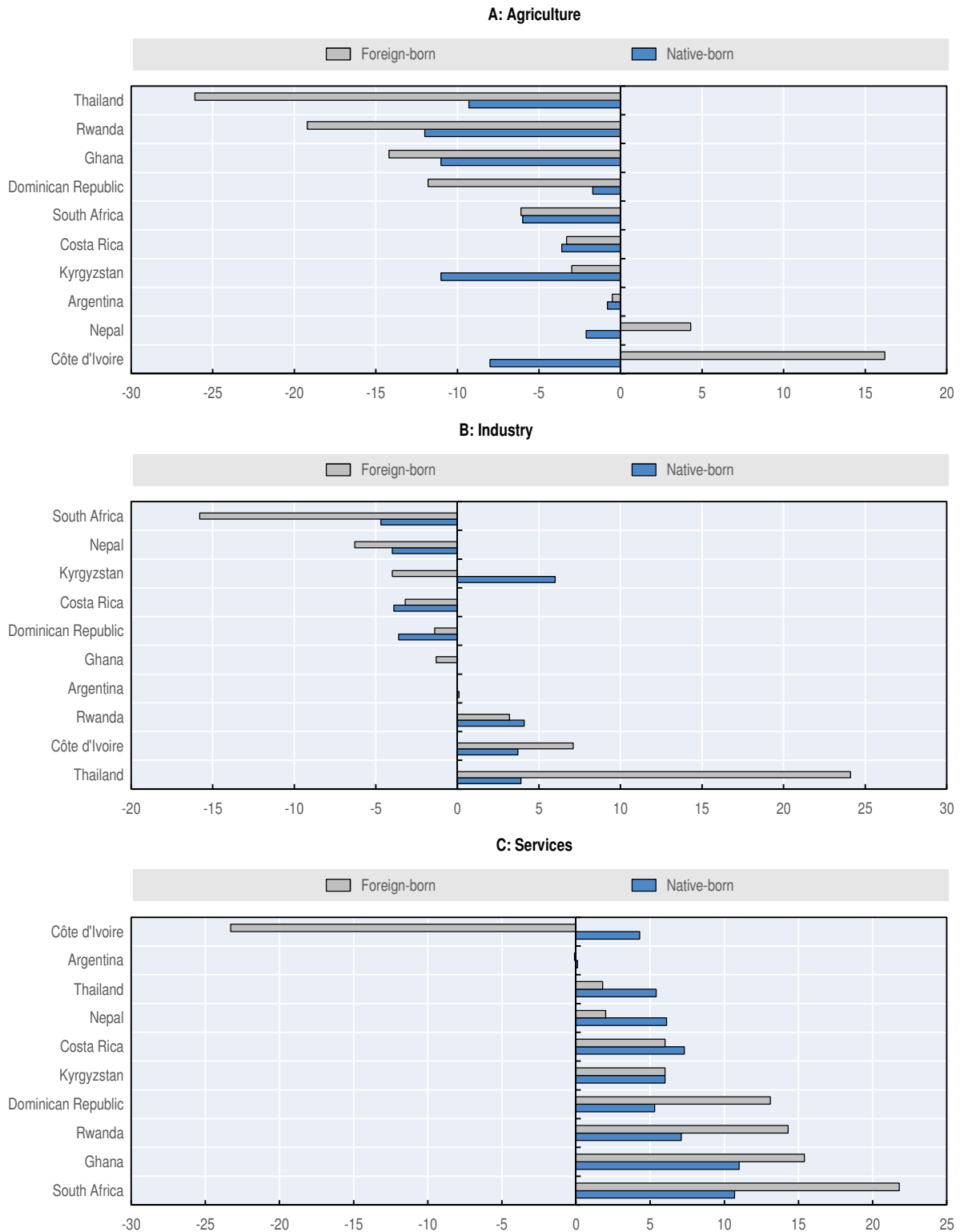
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### **Immigrants increasingly work in the service sector**

The standard development discourse suggests that, with economic growth, the vulnerable employment rate declines and own-account work in traditional, subsistence agriculture gives way to wage employment in industry and services (ILO, 2016a). Agriculture has indeed become less important for both native-born workers and foreign-born workers in all partner countries except Côte d'Ivoire and Nepal (Figure 3.9A). In these countries, employment in agriculture increased for foreign-born workers, although it decreased for native-born workers, considerably so in Côte d'Ivoire. Employment in industry rose in several countries (Figure 3.9B).

Employment in services increased for native-born workers in all countries and for foreign-born workers in all except Argentina and Côte d'Ivoire (Figure 3.9C). In four countries – the Dominican Republic, Ghana, Rwanda and South Africa –, growth in services was considerably greater for foreign-born workers than for native-born workers. In another two – Argentina and Kyrgyzstan –, there was little difference between the two groups, implying a growing role of employment in services for foreign-born workers.

**Figure 3.9. Employment in services has increased, in particular for immigrant workers**  
 Changes in broad sectoral employment shares (percentage points)



Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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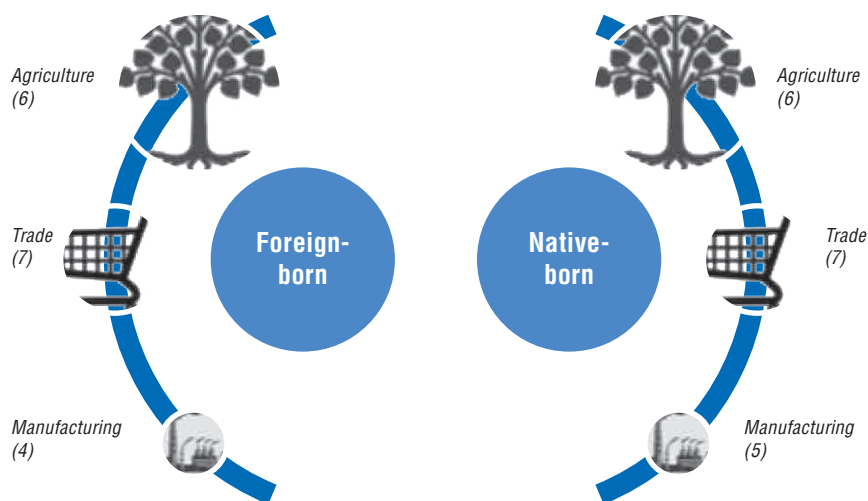
The reasons for the relative importance of employment in services for foreign-born workers are likely to be country-specific. In Rwanda, for example, foreign-born workers are highly-educated and are in demand in the expanding services sector (OECD/ILO, forthcoming d). In Ghana, the services sector has been showing strong growth and for this reason attracted immigrant workers. This contrasts with Argentina, where the economy has demonstrated less structural change and immigration has probably been linked to a lesser extent to growth in particular sectors (OECD/ILO, forthcoming a and b).

Although agriculture is becoming less important, it employs the largest number of workers in most partner countries (Figure 3.10 and Annex 3.A3). In Côte d'Ivoire, Ghana, Kyrgyzstan, Nepal and Rwanda, both foreign- and native-born workers are primarily employed in this sector. In these countries, agriculture employs 42% to 61% of native-born workers, while this share ranges from 31% to 48% for the foreign-born.

In the remaining partner countries, agriculture is less dominant as a source of employment. In Argentina, the largest shares of both native-born and foreign-born workers are in wholesale and retail trade. In Costa Rica, the Dominican Republic, South Africa and Thailand, the largest sectors differ between native-born workers (trade, trade, private household services and agriculture, respectively) and foreign-born workers (private household services, agriculture, trade and manufacturing, respectively).

**Figure 3.10. Among the majority of countries, the largest share of foreign- and native-born workers are employed in agriculture**

The three largest sectors of employment, by place of birth (most recent period)



Note: The numbers in the figure represent the number of partner countries concerned. For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

### **Foreign-born workers are often employed in sectors prone to non-standard employment**

Globally, immigrant workers are more likely to be employed in certain sectors such as construction, seasonal agricultural work, private household services, hotel and restaurant services, and the cleaning sector (ILO, 2016c). Indeed, the private household service sector featured in the top five sectors having the largest gap in the employment shares

of foreign-born workers compared with native-born workers in six of the ten partner countries. The same was true for trade and construction in seven and six countries, respectively (Table 3.2). These are also sectors with a high incidence of non-standard employment (ILO, 2016c).

Non-standard employment differs from standard employment in one or more arrangements, such as the time periods or number of parties involved. Non-standard employment is often associated with insecurity, for example if it is casual or temporary, including temporary agency work, or is involuntarily limited in hours (part-time). One reason why many immigrants are subject to non-standard employment is their initial recruitment by international temporary employment agencies. Such agencies play a prominent role in arranging employment for immigrants in, for example, South Africa and Thailand (OECD/ILO, 2017b and forthcoming e). Other reasons are the lack of language skills and the lack of social and professional networks which prevents immigrants from identifying standard jobs that are available (ILO, 2016c). Box 3.1 illustrates the prevalence of non-standard employment in the partner countries.

**Table 3.2. Immigrant workers have a strong presence in construction, trade and private household services**

Sectors in which immigrants are overrepresented (most recent period)

Argentina	Costa Rica	Côte d'Ivoire	Dominican Republic	Ghana	Kyrgyzstan	Nepal	Rwanda	South Africa	Thailand
Private household services	Private household services	Wholesale and retail trade	Agriculture, forestry, fishing and hunting	Wholesale and retail trade	Manufacturing	Wholesale and retail trade	Wholesale and retail trade	Wholesale and retail trade	Manufacturing
Construction	Agriculture, forestry, fishing and hunting	Manufacturing	Construction	Other services	Other services	Manufacturing	Public administration and defence	Construction	Private household services
Wholesale and retail trade	Accommodation and food service activities	Other services	Accommodation and food service activities	Private household services	Wholesale and retail trade	Other services	Education	Accommodation and food service activities	Construction
Manufacturing	Construction	Construction	-	Real estate	Transportation and communication	Private household services	Health and social work	Private household services	Electricity, gas and water
Accommodation and food service activities	Mining	Agriculture, forestry, fishing and hunting	-	Mining	Education	Education	Other services	Agriculture, forestry, fishing and hunting	Mining

Note: The table shows those sectors for which the difference between the share of the sector in all foreign-born employment and the share of the sector in all native-born employment is greatest. For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a-b and forthcoming a-h).

Native- and foreign-born populations often work in different sectors. One way to summarise differences in their sectoral distributions is to calculate the index of dissimilarity based on differences in their respective employment shares (see Annex 3.A1 for methodological details). This also determines the relative concentration of foreign-born workers in particular sectors. Full segregation between native- and foreign-born workers would result in an index of 1 (or 100%), while a value of 0 (or 0%) would indicate no difference in sectoral distributions of native- and foreign-born workers.

### Box 3.1. Non-standard and informal employment of immigrant workers in partner countries

Non-standard employment (NSE) can be defined as employment that deviates in one or more employment arrangements from work that is "... full time, indefinite, as well as part of a subordinate relationship between an employee and an employer" (ILO, 2016c, p. xxi). NSE includes, for example, seasonal, temporary or casual work and part-time work. NSE has become increasingly common in both high-income and developing economies, due to factors associated with globalisation and technological advances, as well as social change (e.g. increased female labour force participation). NSE poses risks for workers and firms, in particular if it is non-voluntary. Workers risk less employment security, less income security, and limited access to representation and social security.

Migrant workers are more likely than other workers to be in NSE. One reason is the fact that a certain proportion of immigrant workers is undocumented in all countries, and this status prevents access to standard jobs on equal footing with native-born workers. Although solid numbers are difficult to find, the numbers of people seeking to regularise their legal status in South Africa and Thailand since 2000 demonstrates that such barriers are significant (see Chapter 2 and OECD/ILO 2017b and forthcoming e).

Cross border employment in Ghana, South Africa and Thailand, which is often seasonal, is another example of NSE. Due to the seasonal character of migration in Thailand, foreign-born workers can often not afford to officially register as immigrant workers if this involves costs (Rukumnuaykit, 2009). Furthermore, non-standard immigrant work arranged through brokers, without a direct relationship between workers and employers, has reportedly been linked to labour exploitation in Thailand (Vasuprasat, 2016).

Labour force survey information in South Africa for 2012 shows that in sectors important for immigrant workers such as construction and trade (see Table 3.2), the proportion of workers with verbal contracts is much higher for foreign-born workers than for native workers. In both sectors, around half of immigrant workers have only a verbal contract (52% in construction and 49% in trade, respectively), compared with 31% of native-born workers in construction and 15% in trade (Statistics South Africa, 2012). Furthermore, in both sectors, union membership is much lower for foreign-born workers than for native-born workers.

In Ghana, at the national level close to 7% of native-born workers had a verbal contract or no contract in 2012, compared to almost 9% of foreign-born workers (GSS, 2013). In the construction sector, which is also important for immigrant workers in Ghana, these percentages are higher for both native-born and foreign-born workers. Foreign-born workers in both low-skill and high-skill occupations are at a particular disadvantage. However, medium-skill occupations show the opposite pattern, with a relatively high percentage of verbal contracts for native-born workers. Similarly, according to labour force survey information for 2008 in Nepal, more than one in five native-born workers had a permanent contract, compared to less than one in ten foreign-born workers.

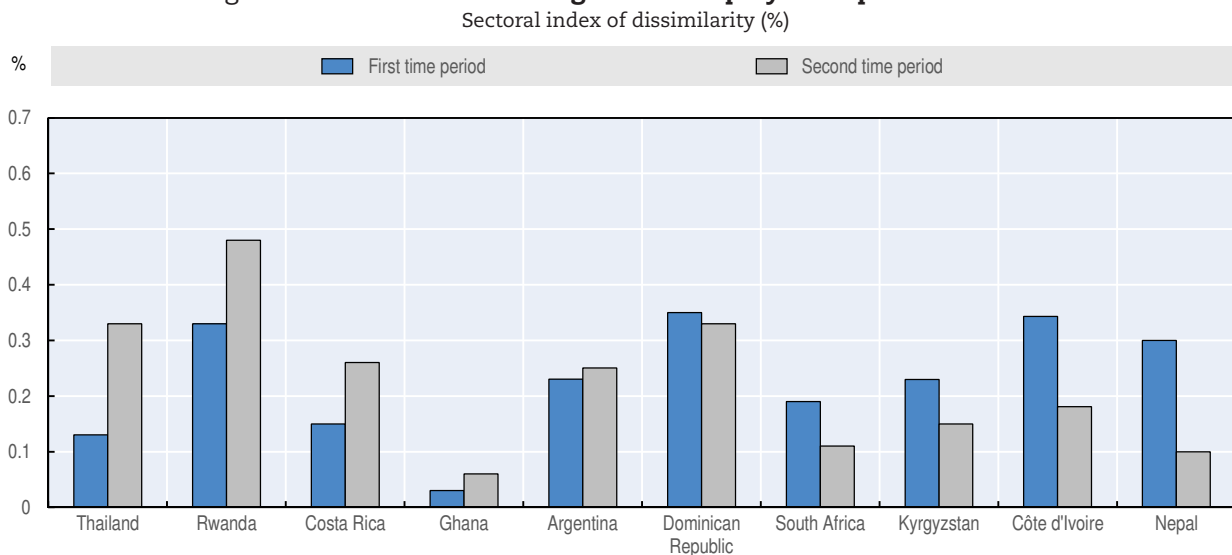
There are overlaps between NSE and informal employment (see ILO, 2016c). According to the guidelines on measuring informal employment adopted by the 17th International Conference of Labour Statisticians in 2003, informal employment includes: (1) own-account workers and employers in their own informal sector enterprises; (2) contributing family workers; (3) members of informal producers' co-operatives; and (4) employees holding informal jobs (ILO, 2003). The guidelines state that "employees are considered to have informal jobs if their employment relationship is, in law or in practice, not subject to national labour legislation, income taxation, social protection or entitlement to certain employment benefits (advance notice of dismissal, severance pay, paid annual or sick leave, etc.)".

Available data on immigrant workers in the partner countries, which are mostly based on population censuses, suggest that categories (1), (2) and (3) are not necessarily more important for immigrant workers than for native-born workers (see Figure 3.7). But the data generally do not allow for a comparison between native-born and foreign-born workers with regard to informal employment under (4). Estimates of informal employment in Argentina and Côte d'Ivoire show a higher rate of informal employment among immigrants than among native workers (OECD/ILO, forthcoming a and f).

Sectoral dissimilarity in the most recent period was at least 25% in five countries (Argentina, Costa Rica, Dominican Republic, Rwanda and Thailand) and increased in four of them in the periods listed in Table 3.1 (see Figure 3.11). The increase in Thailand, for example, was to an important extent driven by overrepresentation of immigrant workers in manufacturing and the relatively low proportion in agriculture. Whereas in 2000 foreign-born workers accounted for around 1% of all workers in manufacturing in Thailand, in 2010 they represented close to 13%. Manufacturing accounted for more than a third of foreign-born employment (37%), compared with a share of 12% of Thai-born employment in the most recent period.

Côte d'Ivoire, the Dominican Republic, Kyrgyzstan, Nepal and South Africa experienced a decrease in sectoral dissimilarity, and in Ghana it remained at a low level. The increase in foreign-born agricultural employment in Nepal noted before, together with a decrease in foreign-born employment in manufacturing, accounted for much of the decrease in dissimilarity in this country.

Figure 3.11. **Native- and foreign-born employment patterns differ**



Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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## Occupational change

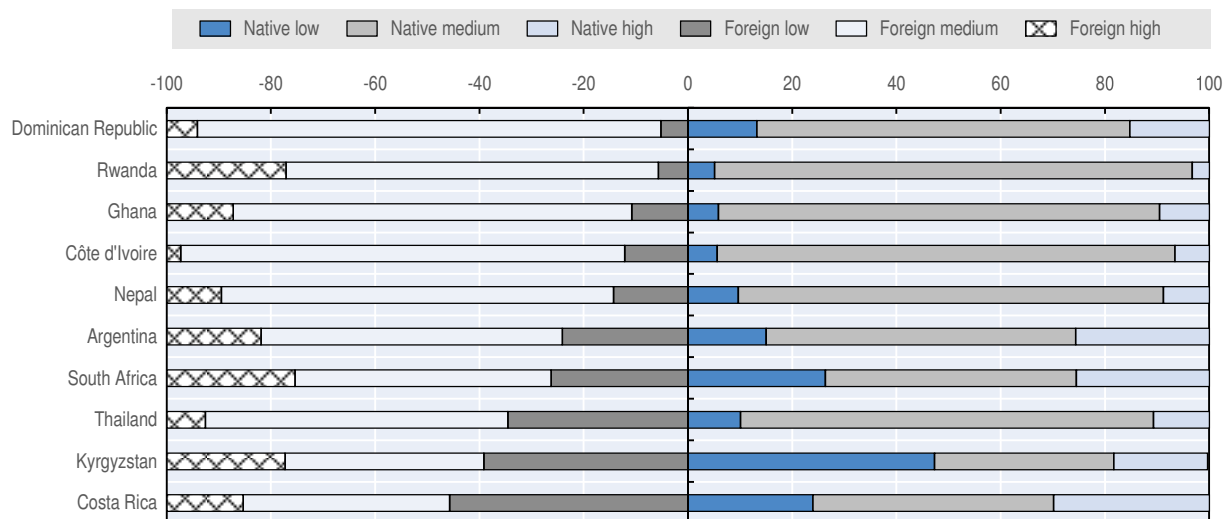
Occupational statistics provide the information on the tasks and duties performed by workers which serves to identify changes in the skills needs in the labour force. Following ILO (2014), this chapter distinguishes between low-skill occupations (e.g. farm labourers), medium-skill occupations (e.g. service workers) and high-skill occupations (e.g. professionals).<sup>5</sup> The relative importance of these three groups differs across the partner countries, reflecting factors such as the structure of the economy and labour market. The share of low-skill occupations is low in native-born employment in Côte d'Ivoire, Ghana, Nepal and Rwanda, and only in Kyrgyzstan and South Africa does it account for more than a quarter of the employed. Medium-skill occupations account for the large majority of native-born workers in all partner countries except Costa Rica, Kyrgyzstan and South Africa.



In Côte d'Ivoire, Ghana, Nepal and Rwanda, the share of high-skill occupations in native-born employment is below 10%. However, high-skill occupations account for more than a quarter of workers in Argentina, Costa Rica and South Africa (Figure 3.12).

**Figure 3.12. Foreign-born workers are often overrepresented in low-skill occupations**

Employment shares by place of birth and occupational skill level (% , most recent period)



Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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The native-born distribution is usually quite different from the foreign-born. In particular, in comparison with the native-born, foreign-born workers are overrepresented in low-skill occupations in most of the partner countries (see Figure 3.12). The exceptions are the Dominican Republic, Kyrgyzstan and South Africa. Costa Rica and Thailand show the largest gaps in the shares of employment in low-skill occupations between two groups of workers. In Thailand the difference is almost 25 percentage points: almost 35% of foreign-born workers are in low-skill occupations, compared with 10% of native-born workers.

Foreign-born workers in high-skill occupations are overrepresented in Ghana, Kyrgyzstan, Nepal and Rwanda. In Rwanda, high-skill occupations account for 23% of foreign-born workers, compared to 3% of native-born workers.

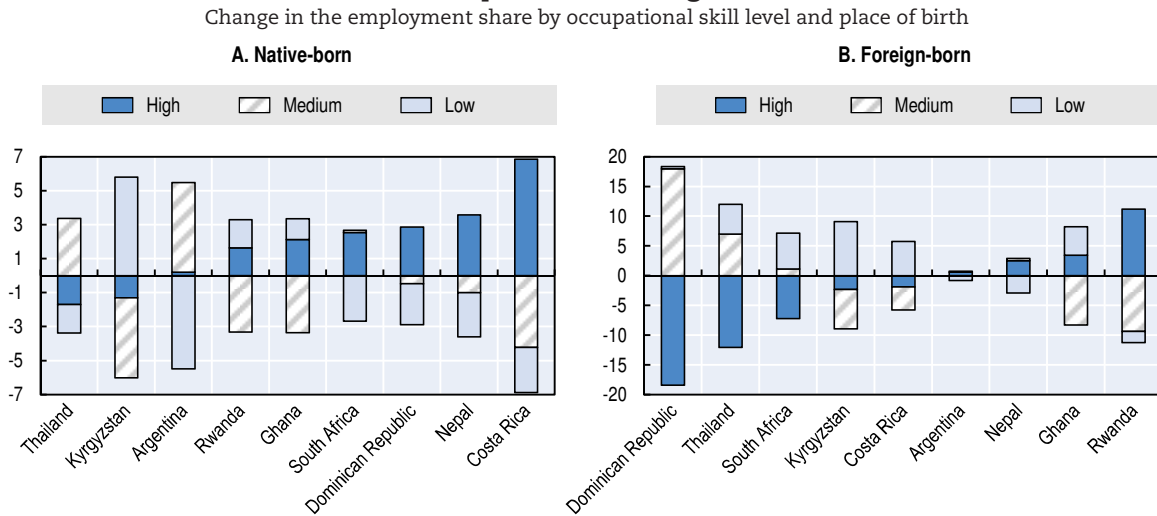
Globally, the share of high-skill occupations tends to increase, driven by several factors including globalisation, technological change and policy choices (ILO, 2015a). Partner countries mostly follow the same pattern, with the exceptions of Kyrgyzstan and Thailand (see Figure 3.13A). At the same time, the share of low-skill occupations in native-born employment declined in all countries except Ghana, Kyrgyzstan and Rwanda. By contrast, the share in foreign-born employment increased in six out of nine countries, and the share of high-skill occupations decreased in five countries (Figure 3.13B).

### **Immigrant workers play a limited role in facilitating occupational change in most countries**

This subsection examines how the employment in different occupational groups is evolving over time and the contribution of immigrants to this evolution. The analysis suggests that the entry of young workers into the labour market largely drives employment growth

in partner countries. It also demonstrates that immigrant workers are overrepresented in occupational groups that are not dynamic or declining over time.

Figure 3.13. **In contrast to native-born workers, foreign-born workers' shares in low-skill occupations tend to grow**



Note: The change in the employment share by occupational skill level and place of birth could not be computed for Côte d'Ivoire due to data limitations.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

StatLink <http://dx.doi.org/10.1787/888933648879>

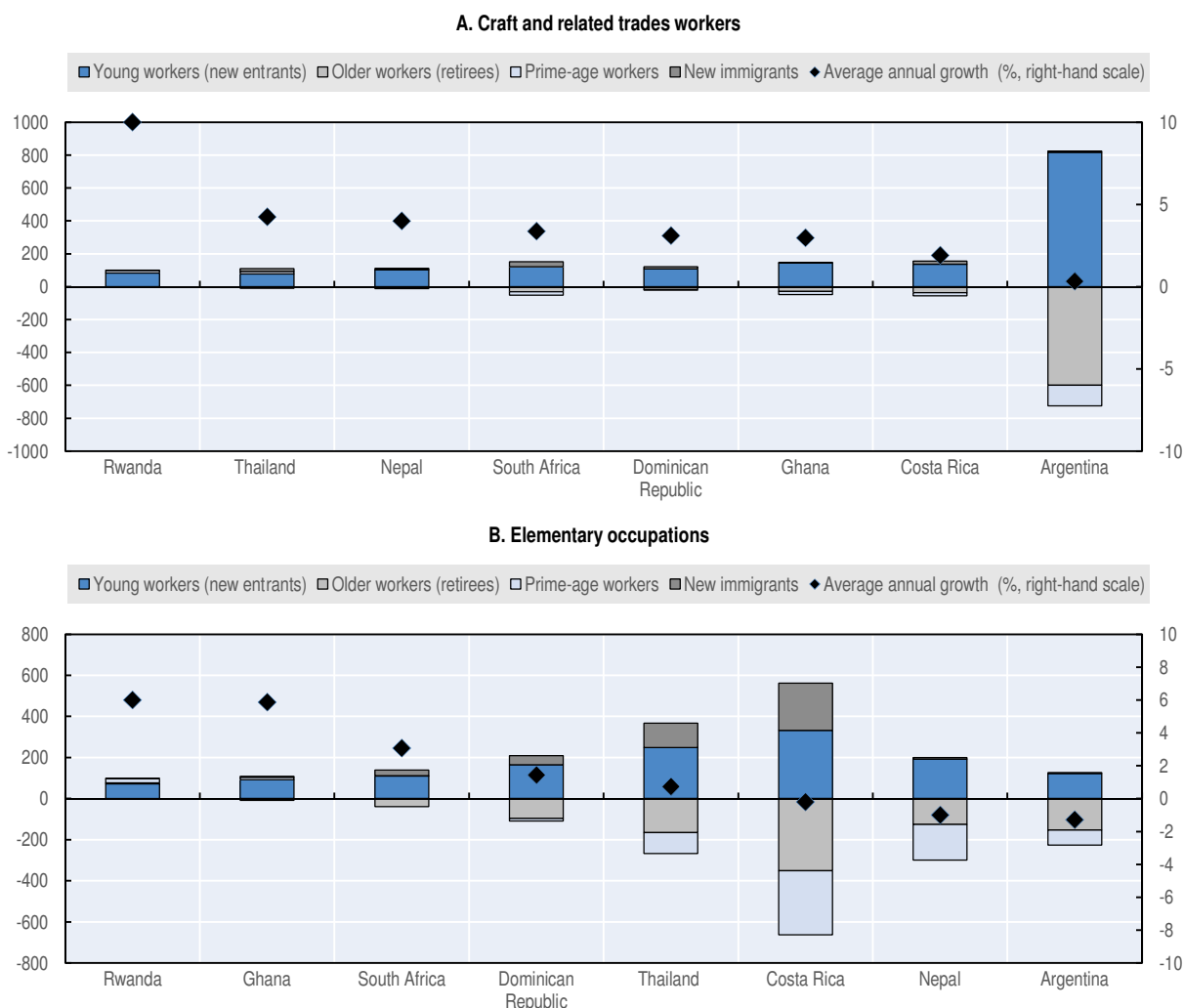
The analysis is based on a demographic accounting framework, which decomposes the net occupational change over the periods listed in Table 3.1 into contributions from young workers (new entrants), new immigrants (i.e. immigrants who have been in the country for less than ten years<sup>6</sup>), prime-age workers and older workers (retirees). These age-related components of the net change are estimated by comparing the situation of so-called “pseudo age cohorts” between two periods (see Annex 3.A2 for methodological details). First, the analysis focuses on two particular major occupational groups. They are the groups where the difference between the numbers of new entrants to the labour force and the numbers of new immigrants is smallest. Second, it looks at the number of growing occupational groups with a relatively large share of new immigrants.

The two occupational groups with the smallest difference between new entrants and new immigrants are craft workers (such as workers in building, metal or electrical trades) and workers in elementary occupations (such as cleaners and agricultural labourers). For these groups, employment growth was positive in all countries except Argentina. For both Costa Rica and Nepal, employment growth was negative for elementary occupations and positive only for craft and related trades workers (Figure 3.14A and B). New immigrants contribute considerably to the employment growth of these occupations in several countries. For example, new immigrants contributed about half as much as new entrants to the growth of elementary occupations in Thailand, and a quarter as much as new entrants in the Dominican Republic. Nevertheless, even in these two groups employment growth in all countries is driven mostly by the entry of young workers and the role of immigrant workers is limited.

In most partner countries, the number of growing occupational groups in which new immigrants are more strongly represented than new young entrants to employment is small (Figure 3.15). Argentina, Costa Rica, the Dominican Republic, Nepal and South Africa had only one growing occupational group with relatively strong inflows of new immigrants, while Thailand had two. Ghana had four such groups, while Rwanda had five. Across all occupations, Rwanda also had the largest difference between the share of new immigrants in growing occupations and the commensurate share of new young entrants (46.7 percentage points, see Annex 3.A3). In contrast, new immigrants in the Dominican Republic and South Africa were far more likely to enter into declining occupations than new young entrants.

Figure 3.14. **Most of the occupational growth is due to young workers**

Demographic components of net occupational change in selected occupations (%)



Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

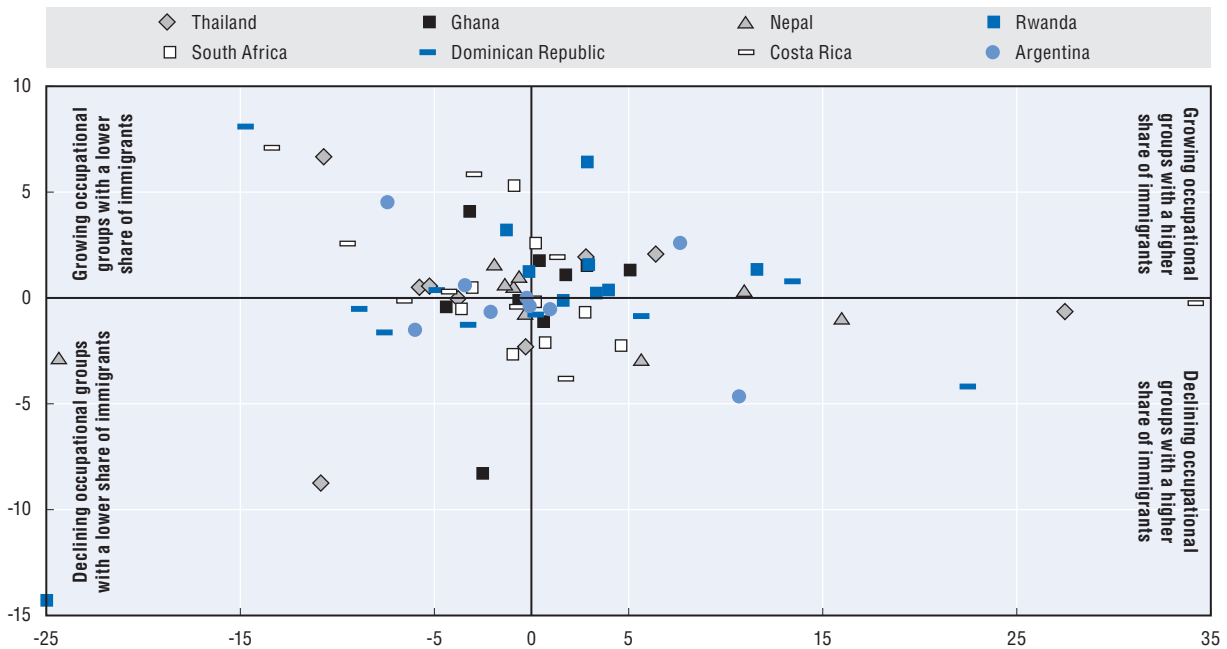
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As occupational groups evolve in partner countries, it appears that immigrants remain in the same occupations and do not move to those where new entrants are moving. In most partner countries, neither the development of the occupational distribution of foreign-born workers, nor the inflow of new immigrants into the labour force, accords with the occupational

development of the native-born workforce. Differences between the two groups reflect at least to some extent complementarities between the native- and foreign-born workforces, but at the same time may reinforce segmentation of the labour market over time.

Figure 3.15. **Occupational patterns differ between new immigrants and new entrants to employment**

Entry of new immigrants in comparison with new entrants to employment into growing and declining occupational groups, by country (percentage points [horizontal axis] and annual growth rates in per cent [vertical axis])



Note: For each of the nine major occupational groups (ILO, 2016a), the figure shows the difference in the share of new immigrants minus the share of new entrants on the horizontal axis, while the change in the employment share over a ten-year period is represented on the vertical axis. A positive difference in shares on the horizontal axis means that proportionally more new immigrants entered the group.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

StatLink  <http://dx.doi.org/10.1787/888933648917>

This segmentation may be unfavourable given that immigrant workers are more likely to be concentrated in low-skill occupations. These low-skilled workers are relatively easily replaced, strongly associated with non-standard employment and typically deprived of bargaining power (ILO, 2015b). The large share of foreign-born workers in low-skill occupations is a particular concern in Costa Rica, Kyrgyzstan and Thailand.

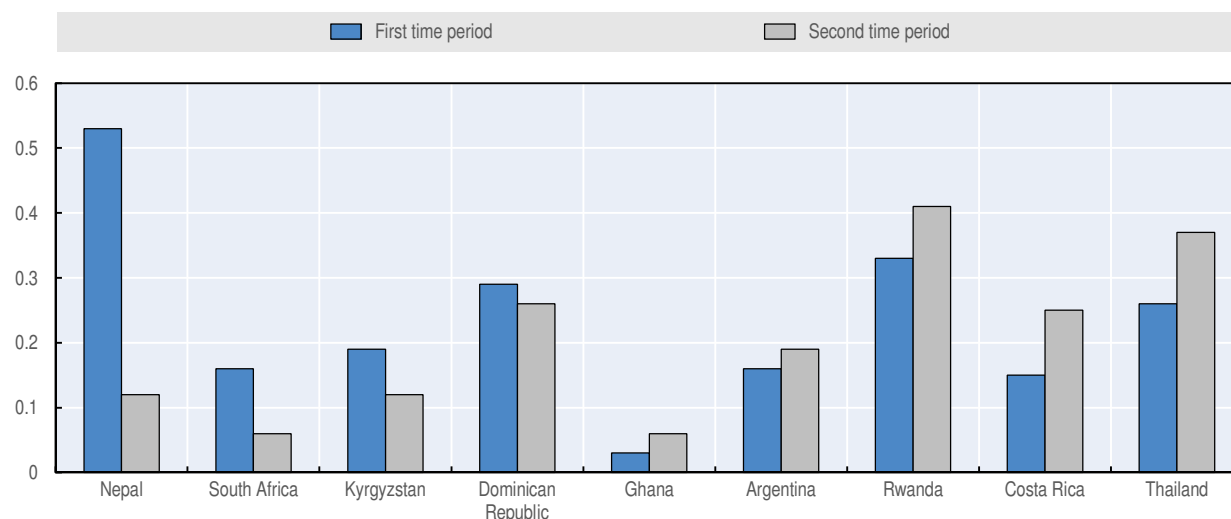
Occupational differences measured by the dissimilarity index are relatively high in Rwanda and Thailand in the most recent period (Figure 3.16), albeit for different reasons. In Rwanda, high-skill occupations are important for foreign-born employment, while in Thailand many foreign-born workers are in low-skill occupations. In Costa Rica, the Dominican Republic, Rwanda and Thailand the index exceeded 20%. Five countries experienced an increase in occupational differences between the periods under consideration. The largest decline was seen in Nepal (Figure 3.16).

In summary, the two major occupational groups where the difference between the numbers of new entrants to the labour force and the numbers of new immigrants is smallest are crafts and elementary occupations. Both of these are growing occupational groups in most partner countries. Similarly, taking all countries together, there are few growing

occupational groups in which new immigrants are relatively strongly represented compared to new young entrants. Finally, the differences between distributions of foreign- and native-born workers across occupational groups increased in most partner countries, though some convergence was also seen.

**Figure 3.16. Occupational differences between foreign- and native-born workers are greatest in Rwanda and Thailand**

Occupational dissimilarity index, 1<sup>st</sup> and 2<sup>nd</sup> period



Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a-b and forthcoming a-h).

StatLink  <http://dx.doi.org/10.1787/888933648936>

## Educational attainment

Education and skills of workers influence the patterns of occupational change discussed in the previous section, both for foreign- and native-born workers. This section examines the development of levels of education among foreign-born workers in comparison with native-born workers in the context of changing labour market needs.

Around 2000, on average 45% of workers in partner countries (excluding Côte d'Ivoire) had completed at least a secondary education. In the most recent period (see Table 3.1), this number had increased to 55%. The proportion was lowest in Rwanda, at 12%, and less than 3% had obtained a tertiary education. In Kyrgyzstan and South Africa, on the other hand, more than 80% of workers had obtained at least a secondary education (Figure 3.17).

### **Overqualification is low in comparison with underqualification**

The pattern of educational attainments suggests that the foreign-born workforce is less educated than the native-born workforce in most partner countries, which helps explain the relatively high share of immigrant workers in low-skill occupations. The proportion of foreign-born workers with less than a primary education is relatively high in eight countries, and the share with a secondary education is low in six countries. Furthermore, the number of countries with relatively high shares of primary educated workers is the same as the number with relatively low shares. There are slightly more countries in which the proportion of workers with at least a secondary education is lower for the foreign-born. But in six out of the ten countries the share of tertiary educated workers is higher (Kyrgyzstan, Ghana, Nepal, Rwanda, South Africa and Thailand; see Figures 3.17 and 3.18).

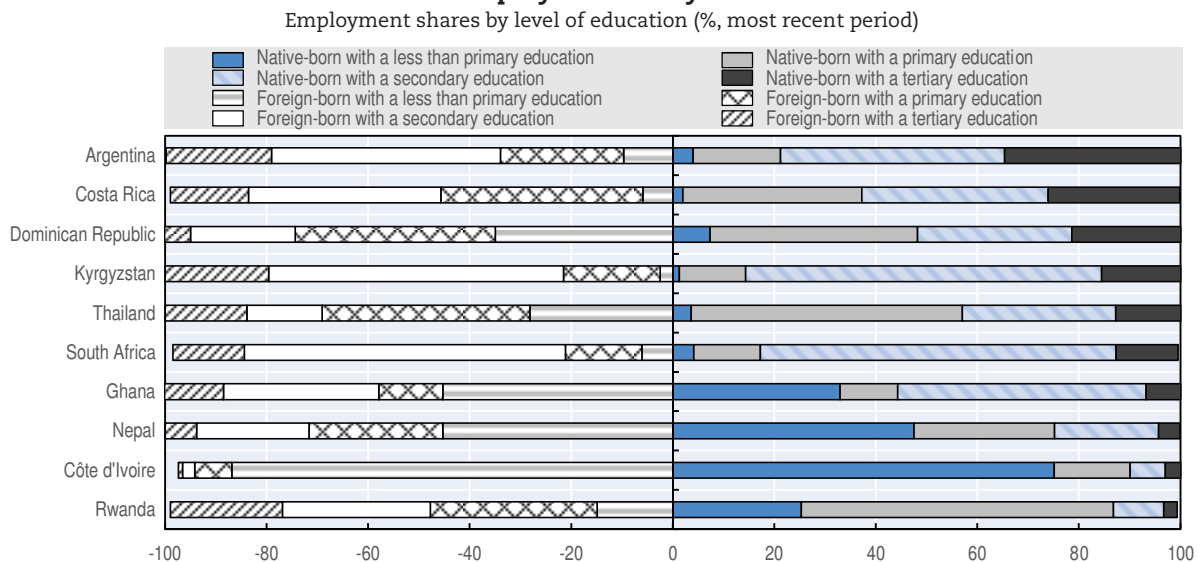
Another reason for the high shares of immigrant workers in low-skill occupations might be a mismatch between their levels of education and their occupations. This is a common type of skills mismatch, and immigrant workers are often found to be at risk in high-income countries (Sparreboom and Tarvid, 2017).<sup>7</sup> If levels of education of workers do not match the jobs they perform, this mismatch imposes costs on individuals and enterprises. For example, rates of return to education are lower for overeducated workers, and enterprise productivity may suffer or turnover among staff may increase due to skills mismatches among workers.

Based on the normative measure which matches occupations and levels of education (ILO, 2014),<sup>8</sup> the proportion of overqualified workers in partner countries ranges from 1% to 47%, while underqualification ranges from 12% to 91% (Table 3.3). This means that a considerable proportion of workers have obtained levels of education which are either higher or lower than the skill requirements for their jobs. The relatively high levels of underqualification in comparison with overqualification are to an important extent due to the low levels of education in most partner countries.

Except in the countries with levels of overqualification below 5% (Côte d'Ivoire, Nepal and Rwanda), levels of overqualification are higher for women in all countries and on average exceed the level for men by 3 to 4 percentage points. The average rate of underqualification is lower for women in four countries. Relatively high levels of overqualification and low levels of underqualification for women suggest that men tend to obtain higher-level positions than women with the same level of education. This corresponds to patterns found in high-income countries (Sparreboom and Tarvid, 2017).

However, this is not true for most partner countries with regard to underqualification, which is higher for women in six countries. The relatively large share of underqualified women in agriculture is likely to explain part of this pattern.

Figure 3.17. **Workers with a primary education or less account for large shares of the employed in many countries**



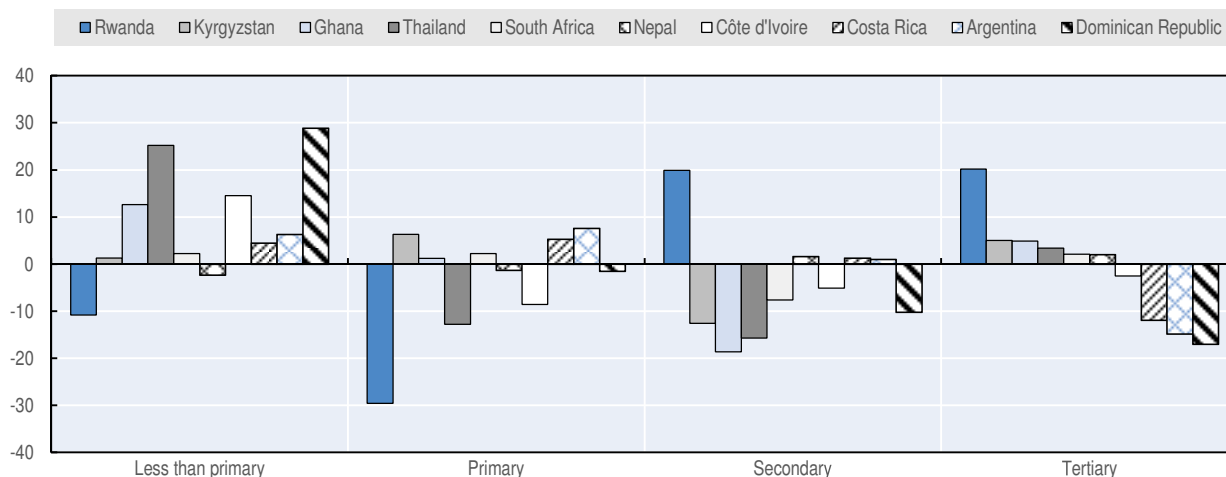
Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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**Figure 3.18. Foreign-born workers tend to be less educated than native-born workers but also have a strong presence among the tertiary educated**

Differences in employment shares by level of education (foreign-born share minus native-born share, percentage points, most recent period)



Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h).

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**Table 3.3. Overqualification is low in comparison with underqualification**

Incidence of overqualification and underqualification (percentage of employed population, most recent period)

Country	Overqualification			Underqualification		
	All	Men	Women	All	Men	Women
Argentina	24.1	19.2	30.8	37.8	46.7	25.6
Costa Rica	15.1	12.2	19.7	28.5	34.7	18.8
Côte d'Ivoire	1.8	2.4	0.9	90.8	87.4	95.5
Dominican Republic	13.9	11.4	18.4	37.7	44.6	25.4
Ghana	5.5	5.4	5.6	47.6	40.9	54.0
Kyrgyzstan	46.9	45.5	48.8	11.8	11.5	12.3
Nepal	2.3	3.3	1.1	77.8	71.5	86.1
Rwanda	1.0	1.3	0.7	86.0	82.2	89.5
South Africa	22.4	18.1	27.8	27.6	29.1	25.6
Thailand	8.4	7.8	8.9	54.1	53.3	54.9
<i>Average</i>	14.1	12.7	16.3	50.0	50.2	48.8

Note: For time periods, see Table 3.1.

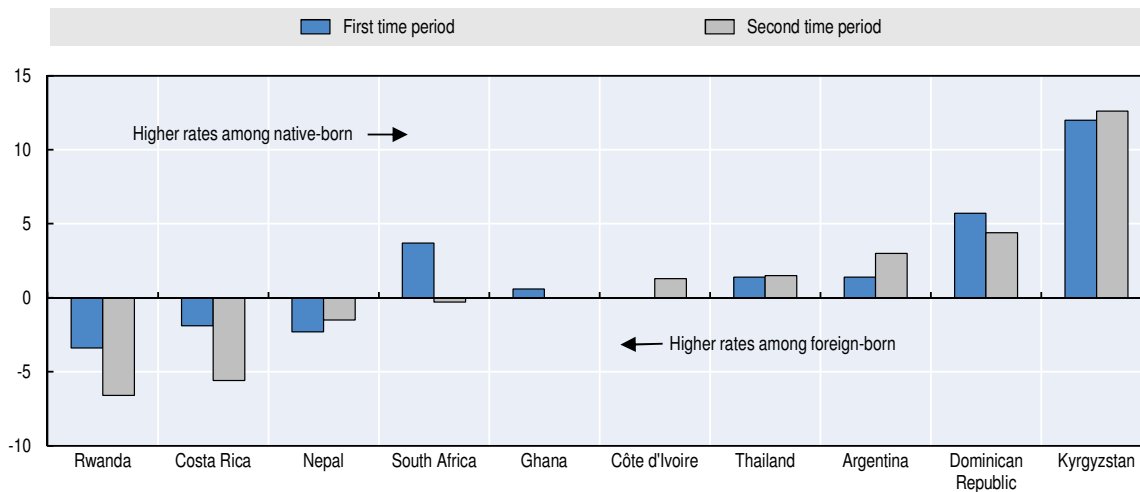
Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h); for Kyrgyzstan the *Life in Kyrgyzstan* data (IZA, 2016) was used.

In the most recent period, foreign-born workers were more likely to be overqualified in Costa Rica, Nepal, Rwanda and South Africa, but less so in Argentina, Côte d'Ivoire, the Dominican Republic, Kyrgyzstan and Thailand (Figure 3.19). At first sight there does not appear to be a consistent pattern of overqualification among the foreign-born, and differences between foreign- and native-born workers seem to be country-specific. Disaggregation by level of skill of the occupations seems to point in the same direction. In almost all countries the overqualification rate for workers in low-skill occupations exceeds the rate in medium-skill occupations, but the pattern is similar for foreign-born and native-born workers (Figure 3.20).



Figure 3.19. **Overqualification is not necessarily greater for immigrant workers at the national level**

Differences in rates of overqualification, by time period (native-born share minus foreign-born share, percentage points)



Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h); for Kyrgyzstan the *Life in Kyrgyzstan* data (IZA, 2016) was used for the second time period.

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Figure 3.20. **Overqualification is usually higher in low-skill occupations, but less so for foreign-born workers**

Rates of overqualification by place of birth and occupational skill level (% , most recent period)



Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h); for Kyrgyzstan the *Life in Kyrgyzstan* data (IZA, 2016) was used for the second time period.

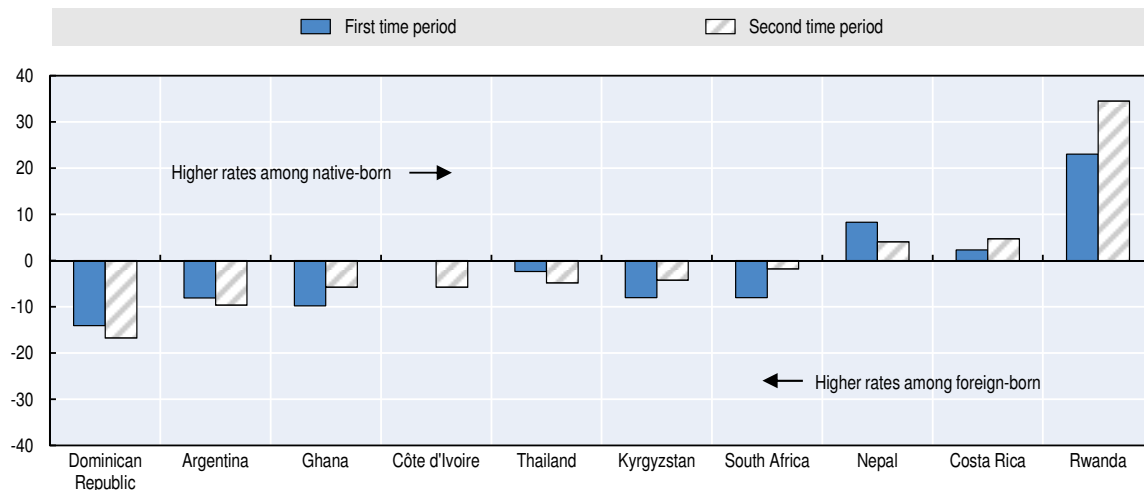
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In relative terms, overqualification of foreign-born workers seems more of an issue for medium- than low-skill occupations. Overqualification rates of workers in elementary occupations are lower for immigrant workers than for native-born workers in most of the partner countries. One reason is likely that some low-skill jobs are not attractive for native-born workers, and employers are less demanding in terms of formal qualifications. On the other hand, the overqualification rate in medium-skill occupations for foreign born workers

surpasses the rate for native-born workers in six countries (the exceptions are Argentina, Côte d'Ivoire, the Dominican Republic and Kyrgyzstan).

The pattern of underqualification seems clearer than that of overqualification. The rate of underqualification is higher for foreign-born workers in seven of the partner countries (Figure 3.21). Similar to the relatively low rate of overqualification of workers in elementary occupations, the high rate of underqualification of immigrant workers in these occupations may be indicative of dirty, demeaning and dangerous jobs (Figure 3.22).

**Figure 3.21. Underqualification rates are higher for foreign-born workers in most partner countries**  
Differences in rates of underqualification, by time period (native-born rate minus foreign-born rate, percentage points)

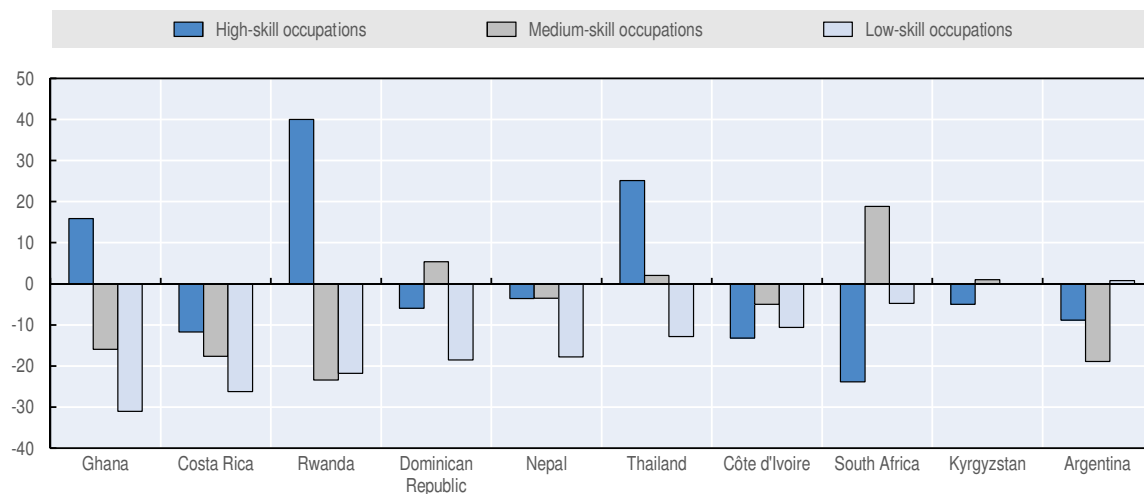


Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a and b and forthcoming a-h); for Kyrgyzstan the *Life in Kyrgyzstan* data (IZA, 2016) was used for the second time period.  
StatLink <http://dx.doi.org/10.1787/888933649031>

**Figure 3.22. Underqualification rates are almost always higher for immigrant workers in elementary occupations**

Differences in underqualification rates between native- and foreign-born, by skill level of occupation (native-born rate minus foreign-born rate, percentage points, most recent period)



Note: For time periods, see Table 3.1.

Source: Authors' own work based on population census data from the Minnesota Population Center (2017) or national statistical offices (see OECD/ILO 2017a-b and forthcoming a-h); for Kyrgyzstan the *Life in Kyrgyzstan* data (IZA, 2016) was used for the second time period.  
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## Conclusions and policy implications

The review of certain key labour market indicators in this chapter suggests that integration of immigrant workers in terms of the volume of employment is less a concern for policy makers than integration in terms of quality of work. In most partner countries, foreign-born workers have relatively higher employment rates, usually driven by male rates. However, in some countries females face a double challenge: apart from the shortfall in employment in comparison with males, there is also a shortfall in comparison with native-born females. This is particularly relevant for young foreign-born females, who are more likely than other groups to be unemployed or not in education, employment or training.

The overall picture is less favourable with regard to the quality of employment. Immigrant workers are more often at risk of not finding decent work. This is largely due to a high incidence of non-standard employment, the relative concentration of immigrant workers in certain sectors and occupations in most countries, and greater exposure to informal employment and wage penalties in some countries. In turn, the high incidence of non-standard employment may be explained by a range of factors. These include the undocumented status of some immigrants, the incidence of temporary or agency work, a lack of recognition of qualifications, language barriers and lower human capital, but also outright discrimination.

Diversifying immigrant work in terms of sectors and occupations could help improve the quality of work. Immigrant workers are typically overrepresented in sectors prone to low-quality work (i.e. construction and trade) and in occupations that are vulnerable to exploitation such as low-skill work.

Ensuring equal treatment of immigrant workers is essential. This can be done by enforcing labour standards, by ensuring adequate representation of migrant workers, in particular in trade unions, and by fighting discrimination. Many migrant workers are in a difficult position to make their voices heard, for example due to their irregular status or to the temporary or seasonal nature of their work. Additional pathways for legal immigration are also important to decrease irregularity and non-standard employment for migrants.

Reducing the mismatch between skills and jobs is another way to widen sectoral and occupational choices of immigrant workers. Improving mechanisms for skills recognition and investing in skills development are two solutions.

Assessing the full extent of decent work deficits is hampered by data gaps. In many countries, comparable data sources are limited to population censuses. Other data collection exercises are needed to consistently capture information on immigrant workers. In several countries, for example South Africa and Thailand, an additional question on nationality or citizenship in the regular labour force survey would greatly expand the information base on immigrant workers.

### Notes

1. The selection of indicators is limited by the sources of labour market data available in the partner countries for both the native-born and the foreign-born. For most countries, the population census constitutes the main source.
2. For most countries, the periods listed in Table 3.1 are determined by the years for which population census data are available. Argentina is partially based on survey data from urban areas only.
3. For example, in the European OECD countries the average employment rate of the foreign-born population was 62.1% in 2015, compared to 65.1% for the native-born population. However, in the United States the employment rate for foreign-born workers (67.5%) was just above the rate for the native-born (67.2%) (OECD, 2016).

4. The number cited in the text corresponds to the medium variant scenario in UN (2016).
5. High-skill occupations consist of these major groups: (1) legislators, senior officials and managers; (2) professionals; and (3) technicians and associate professionals. Medium-skill occupations consist of these major groups: (4) clerks; (5) service workers and shop and market sales workers; (6) skilled agricultural and fishery workers; (7) craft and related trades workers; and (8) plant and machine operators and assemblers. Low-skill occupations are defined as one major group: (9) elementary occupations.
6. For both Argentina and Thailand, the specified time period was five years instead of ten.
7. Other types of skills mismatch include mismatch by level of education, by field of study, by years of on-the-job training/ or work experience, of job-specific/technical skills, of basic skills, and of transversal/core/soft/portable skills (ILO, 2017).
8. The normative measure of skills mismatch is based on the International Standard Classification of Occupations (ISCO-88 or ISCO-08). The method first divides major occupational groups into three groups. It then assigns a level of education to each group in accordance with the International Standard Classification of Education (ISCED-97). Workers in a particular group who have the assigned level of education are considered well-matched, while those who have a higher or lower level of education are considered overeducated or undereducated. For example, a graduate from a medical university working as a clerk is overeducated, while a secondary school graduate performing the duties of a medical doctor is undereducated (see ILO, 2014).

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## ANNEX 3.A1

### *Methodology to assess sectoral and occupational employment patterns*

The similarity of sectoral employment patterns between native-born and foreign-born workers can be assessed using an index of dissimilarity. The index represents the proportion of a group, either native- or foreign-born, that would need to move in order to create an equal distribution. The index is calculated based on the following equation:

$$\text{Dissimilarity (D)} = \frac{1}{2} \sum_{i=1}^s \left| \frac{n_i}{N_T} - \frac{f_i}{F_T} \right|$$

where  $n_i$  is the number of native-born workers per sector,  $N_T$  is the total number of native-born workers across all sectors,  $f_i$  is the number of foreign-born workers per sector,  $F_T$  is the total number of foreign-born workers across all sectors and  $s$  is the number of sectors.

Full segregation between native- and foreign-born workers would result in an index of 1 (or 100%), while a value of 0 (or 0%) would indicate that there is no difference in sectoral distributions of native- and foreign-born workers.

The same index can be applied to occupational and other distributions.

## ANNEX 3.A2

*Methodology of demographic decomposition*

Following Chapters 3 and 4 in *Matching Economic Migration with Labour Market Needs* (OECD/European Union, 2014), the decomposition used in this chapter is based on a demographic accounting method, applied to changes in the distribution of workers by occupation.

This method builds on the following equation concerning the measure of change in a particular variable between two points in time:

$$\Delta(T) = E + I + \Delta(PA) - R;$$

$\Delta(T)$  = the total change observed in the variable over the period

E = non-immigrant entrants over the period

I = new immigrants who arrived over the period

$\Delta(PA)$  = change in the non-immigrant prime-age group over the period

R = non-immigrant retirees over the period

This equation shows that total change over the period equals inflows minus outflows, while deaths and emigration are included implicitly. The table below summarises how these components are obtained based on data on the labour force from the 2000 and 2010 population censuses.

Table 3.A2.1. **Definition of components for the demographic accounting decomposition**

(1) = (2)-(3)	(2) 2010 population census	(3) 2000 population census
<b>Non-immigrant entrants (E)</b>	LF (aged 15-34 excluding foreign-born without long-term residence)	LF (aged 15-24)
<b>Retirees (-R)</b>	LF (aged 55+ excluding foreign-born without long-term residence)	LF (aged 45+)
<b>Change in the prime-age group (<math>\Delta(PA)</math>)</b>	LF (aged 35-54 excluding foreign-born without long-term residence)	LF (aged 25-44)
<b>New immigrants (I)</b>	LF (foreign-born without long-term residence aged 15+)	0
<b>Total change :</b>	LF (aged 15+)	LF (aged 15+)
<b><math>\Delta(T) = E + I + \Delta(PA) - R</math></b>		

Note: LF = labour force.

Non-immigrant entrants to the labour market are calculated by subtracting the labour force aged 15-24 in 2000 from the labour force aged 15-34 in 2010. This assumes that all persons aged 15-24 who were part of the labour force in 2000 are still in the labour force ten years later (when they were aged 25-34). Similarly, retirees are those in the labour force



who were aged 45 and above in 2000 minus those aged 55 and above in 2010 (temporary withdrawals and re-entries prior to definitive retirement are implicitly netted out). The change in the size of the prime-age group equals the labour force aged 35-54 in 2010 minus the labour force aged 25-44 in 2000. Finally, the number of new immigrants is calculated as immigrants with a duration of residence of less than ten years (with the exception of Argentina and Thailand, in which the duration of residence used was less than five years due to data limitations), and such immigrants are excluded from the other components to avoid double counting. As can be verified from the table, these four components add up to the labour force in both 2000 and 2010.

The same methodology can be used to decompose sub-groups of the labour force (such as the employed, educational and occupational groups).

## ANNEX 3.A3

## Additional tables

Table 3.A3.1. The three largest sectors of employment, by place of birth (% , most recent period)

	Largest share		2nd largest share		3rd largest share	
	Foreign-born	Native-born	Foreign-born	Native-born	Foreign-born	Native-born
Rwanda (2012)	Agriculture (35.5)	Agriculture (76.4)	Trade (12.7)	Trade (4.7)	Public administration (7.9)	Construction (3.4)
Thailand (2010)	Manufacturing (36.5)	Agriculture (47.4)	Agriculture (24.8)	Trade (13.1)	Trade (12.1)	Manufacturing (12.0)
South Africa (2011)	Trade (13.3)	Private household services (11.4)	Private household services (12.4)	Trade (10.3)	Construction (10.8)	Manufacturing (9.9)
Nepal (2011)	Agriculture (37.9)	Agriculture (61.4)	Trade (19.0)	Trade (7.5)	Manufacturing (12.2)	Manufacturing (5.5)
Ghana (2010)	Agriculture (34.4)	Agriculture (42.1)	Trade (26.1)	Trade (18.7)	Manufacturing (10.2)	Manufacturing (10.7)
Argentina (2015)	Trade (19.2)	Trade (16.9)	Construction (17.9)	Manufacturing (13.1)	Private household services (16.6)	Public administration (9.5)
Kyrgyzstan (2009)	Agriculture (31.4)	Agriculture (45.7)	Trade (15.4)	Trade (13.2)	Manufacturing (8.9)	Construction (7.4)
Côte d'Ivoire (2008)	Agriculture (48.0)	Agriculture (47.9)	Trade (24.4)	Trade (16.4)	Manufacturing (7.8)	Manufacturing (6.3)
Dominican Republic (2010)	Agriculture (34.1)	Trade (21.5)	Trade (19.2)	Manufacturing (11.7)	Construction (15.4)	Agriculture (11.0)
Costa Rica (2011)	Private household services (16.8)	Trade (20.3)	Trade (15.9)	Manufacturing (12.1)	Agriculture (15.9)	Agriculture (10.9)

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

Table 3.A3.2. Employment shares in growing and declining occupations by demographic groups

	Share of all new immigrant entries				New immigrant share of all new entries		
	In growing occupations	In declining occupations	Difference	Difference for new young entrants	In growing occupations	In declining occupations	Difference
	A	B	C	D	E	F	G
	Percentage		Percentage points		Percentage		Percentage points
Rwanda	69.1	30.9	38.2	-8.5	1.9	0.9	1.1
Nepal	59.3	40.8	18.5	68.3	1.5	1.0	0.5
Thailand	50.6	49.5	1.1	33.7	5.0	4.9	0.1
Ghana	50.3	49.7	0.6	-13.2	1.2	1.2	0.0
Argentina	47.6	52.4	-4.7	2.2	0.7	0.7	-0.1
Dominican Republic	36.8	63.2	-26.4	-12.4	2.9	4.9	-2.1
Costa Rica	32.6	67.4	-34.8	16.2	2.6	5.4	-2.8
South Africa	36.1	63.9	-27.8	-20.4	5.6	10.0	-4.3

Note: All entries include new immigrants, new young entrants, and the net occupational change of prime-aged individuals and retirees if positive. Calculations for Côte d'Ivoire and Kyrgyzstan were not possible due to data limitations.

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



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