Chapter 4

Individual characteristics and the resilience of students with an immigrant background

This chapter examines some of the individual characteristics of students with an immigrant background that are related to their academic, social, emotional and motivational resilience. The magnitude of linguistic and cultural differences between an immigrant student's country of origin and the country in which his or her family settled is associated with these students' likelihood of integrating well into the host community. Other characteristics considered in the chapter are whether or not these students work for pay, whether they have participated in pre-primary education, and their gender.
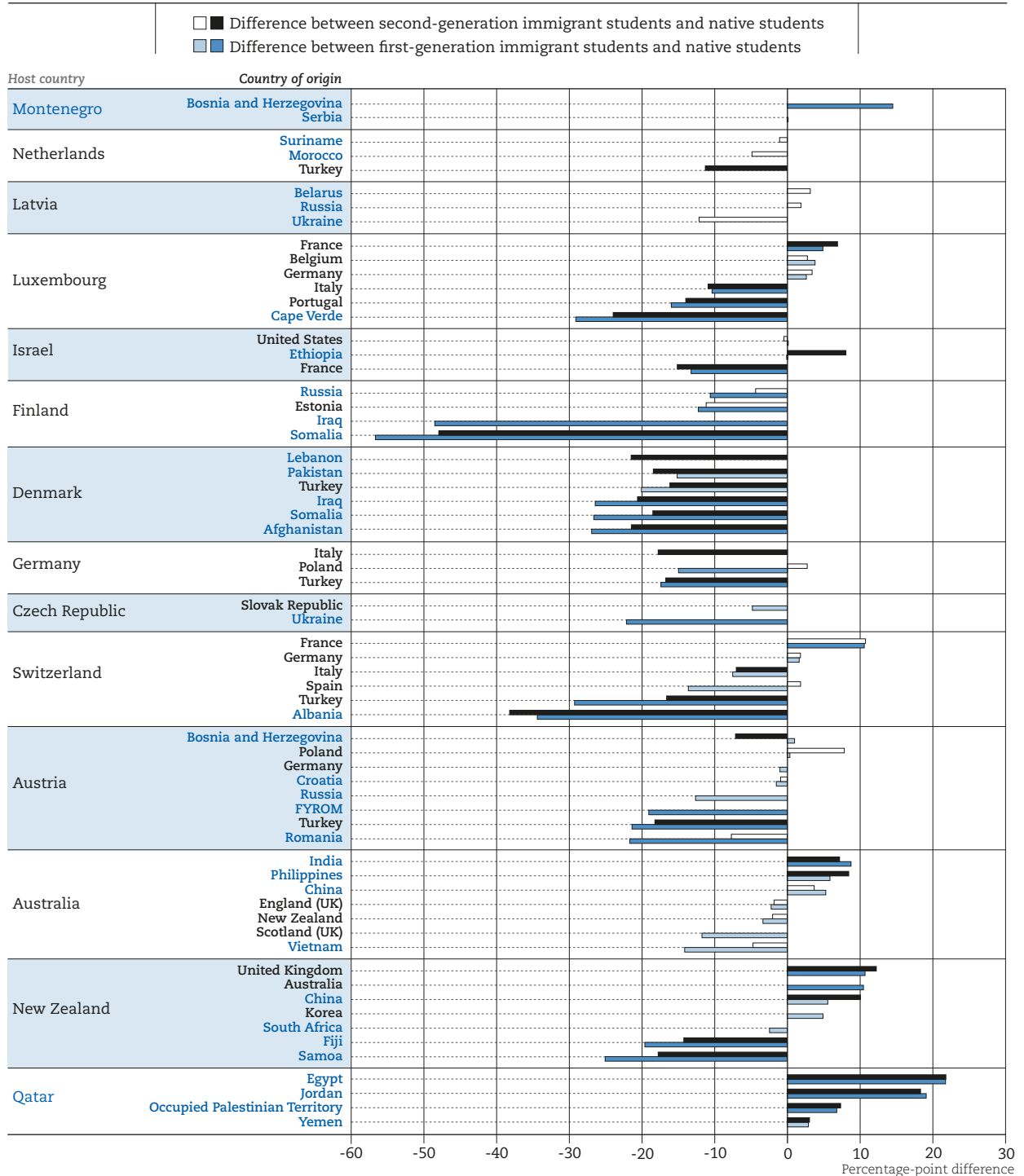
What the data tell us

- The country students migrated from, and the country in which they settled, influence the likelihood that these students will be academically, socially and emotionally resilient. For example in Finland, first-generation immigrant students from Somalia are about eight percentage points less likely than those from Iraq to be academically resilient, but they are equally likely be socially resilient. By contrast, they are about 46 percentage points less likely to be academically resilient and eight percentage points less likely to be socially resilient than first-generation immigrant students from the Russian Federation.

- Immigrant students with the same heritage but living in different host countries are not equally likely to be academically or socio-emotionally resilient, after accounting for socio-economic status. For example, South African first-generation immigrant students who settled in Australia were almost 50 percentage points more likely to be academically resilient than first-generation immigrant students from South Africa who settled in New Zealand.

- Immigrant students are more likely than native students to work for pay or work in the household. The difference in likelihood to work for pay is a particularly strong mediating factor between immigrant background and academic performance in Brazil, Bulgaria, the Slovak Republic and Turkey.

- On average across OECD countries with available data, immigrant students are 12 percentage points less likely than native students to have participated in pre-primary programmes (13 percentage points less likely across EU countries). The difference is larger than 20 percentage points in the United Kingdom and Ireland.

Country of birth effects

The academic performance of students with an immigrant background in a given host country is significantly related to their country of origin. While socio-economic and linguistic differences across countries partly explain this relationship, other factors, such as cultural similarities and the quality of host- and origin-country education systems are likely to play a role. Figure 4.1 illustrates these points by pooling data from PISA 2006, 2009, 2012 and 2015. The figure shows, for a selected group of countries with available information, how immigrant students in the same host country and with similar socio-economic status perform depending on their country of origin. Specifically, it compares the percentage of students who attain baseline levels of proficiency in the core PISA subjects[1] among native students and first- and second-generation immigrant students from different countries. In this chapter, native-born students of foreign-born parents are considered second-generation immigrant students from a given country, when both their parents were born in that country, or one parent for students living in single-parent households. Native-born students of foreign-born parents born in two different countries are not considered in the analyses by country of origin.

In Luxembourg, for example, first-generation immigrant students from Cape Verde are 29 percentage points less likely to attain baseline levels of academic proficiency than native students, while first-generation immigrant students from Portugal are only 16 percentage points less likely. Conversely, French first-generation immigrant students are five percentage points more likely to attain baseline academic proficiency than Luxembourger native students. While differences across countries of origin are narrower for second-generation immigrant students than for first-generation immigrant students, the variation is still remarkably large. For example, the gap between students without an immigrant background in Luxembourg and second-generation immigrant students from Italy whose parents settled in Luxembourg is about 13 percentage points larger than the same gap observed among second-generation immigrant students in Luxembourg whose parents were born in Cape Verde. In Finland, academic performance varies even more depending on immigrant students' country of origin. First-generation immigrant students from Somalia are 56 percentage points less likely than native students to attain baseline academic proficiency, while students from the Russian Federation (hereafter "Russia") are only ten percentage points less likely.

Figure 4.1 ▪ **Attaining baseline academic proficiency, by country of origin**

Difference between immigrant and native students in the percentage of students attaining baseline academic proficiency

□■ Difference between second-generation immigrant students and native students
■ Difference between first-generation immigrant students and native students

Notes: Estimates are obtained by pooling data from the PISA 2006, 2009, 2012 and 2015 Databases.

Statistically significant differences are marked in a darker tone.

Only countries with at least 30 immigrants attending at least 5 different schools from a minimum of 2 foreign countries were included in the analysis.

All estimates control for the socio-economic status of students.

Students who attain baseline academic proficiency are those who attain at least proficiency Level 2 in all three core PISA subjects: science, reading and mathematics.

Source: OECD, PISA 2006, 2009, 2012 and 2015 Databases.

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In New Zealand, first-generation immigrant students from Australia and the United Kingdom are over 10 percentage points more likely than native students to attain baseline academic proficiency, while first-generation immigrant students from Samoa are 25 percentage points less likely than native students.

Clearly, socio-economic disparities between immigrant students from different countries account for a significant part of the academic gaps, yet they are not the sole explanation. First, all estimates presented account for students' socio-economic status. Second, in some countries, immigrant students from economically diverse countries have similar academic performance. For example, in Denmark, second-generation immigrant students from Afghanistan, Iraq, Lebanon, Pakistan, Somalia and Turkey are all between 16 and 22 percentage points less likely than native students to attain baseline academic proficiency. First-generation immigrant students in Denmark from Afghanistan, Iraq and Somalia are between 26 and 27 percentage points less likely than native students to attain baseline academic proficiency. In Germany, second-generation immigrant students from Italy are 18 percentage points less likely than native students to attain baseline academic proficiency, while those from Turkey are 17 percentage points less likely than native students.

Linguistic differences are also likely to explain some of the academic gaps, such as the marked difference between French and Turkish immigrant students in Switzerland. However, they do not explain all differences. Iraqi and Somali first-generation immigrant students in Finland are, respectively, 48 and 57 percentage points less likely than native students to attain baseline academic proficiency, and Arabic is a national language in both countries of origin. In the Czech Republic, first-generation immigrant students from the Slovak Republic are as likely as native students to attain baseline academic proficiency, while first-generation immigrant students from Ukraine are 22 percentage points less likely than native students to do so. In all three countries, the national language is of Slavic origin.
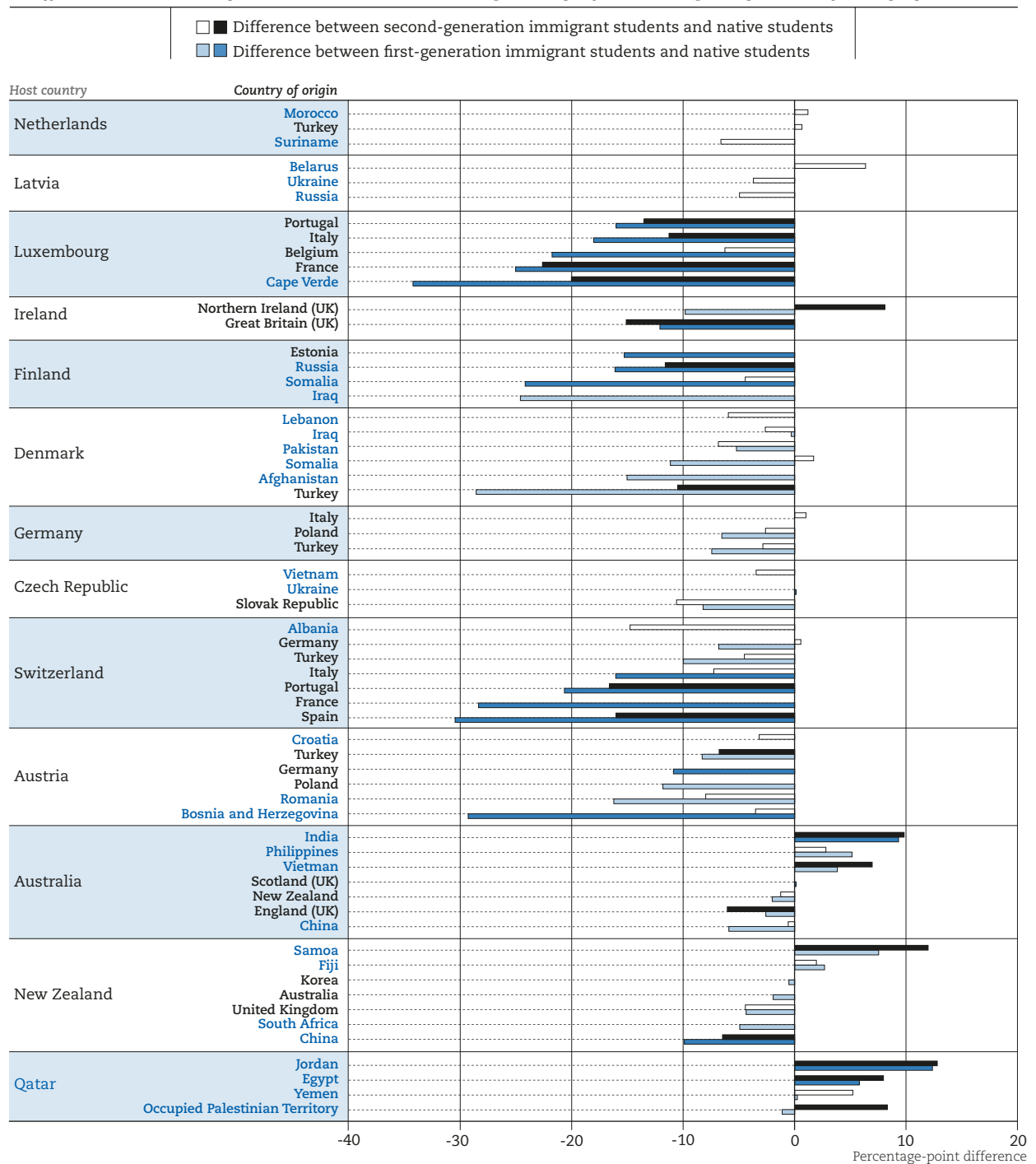
The culture and education acquired before migrating are strongly related to the performance of first-generation immigrant students. In Luxembourg, Italian and Portuguese first-generation immigrant students are likely to experience similar socio-economic and linguistic difficulties; however, the former groups of students is 10 percentage points less likely than native students to attain baseline academic proficiency, while the latter are 16 percentage points less likely. Similarly, in Montenegro, first-generation immigrant students from Serbia are as likely as native students to attain baseline academic proficiency, while those from Bosnia Herzegovina are 15 percentage points more likely to do so. Differences can be explained by varying cultural affinity between host countries and countries of origin, as well as by differences in education before the students migrated.

The barriers to academic achievement faced by immigrant students tend to be lower for second-generation immigrants. However, the extent to which they are varies greatly across countries of origin and destination countries. In Switzerland, compared to native students, Turkish first-generation immigrant students are 29 percentage points less likely to attain baseline academic proficiency, while second-generation immigrants are only 17 percentage points less likely. In Denmark, first-generation immigrant students from both Somalia and Afghanistan are 27 percentage points less likely to attain baseline academic proficiency than native students are. While second-generation immigrant students from Afghanistan are 21 percentage points less likely to attain baseline academic proficiency than native Danish students, Somalian second-generation immigrant students are 18 percentage points less likely. In some cases there is only a marginal difference between first- and second-generation immigrant students in their academic performance, implying that barriers to achievement do not change across generations. For example, in Luxembourg, first- and second-generation immigrant students from Italy are 10 and 11 percentage points, respectively, less likely than native students to attain baseline academic proficiency.

PISA shows that the social well-being of immigrant students in a given host country also varies markedly according to students' country of origin. Figure 4.2 compares, for a selected group of countries with available information, the percentage of students who reported a sense of belonging at school[2] among native students and immigrant students from different countries. All estimates account for the socio-economic status of students and are obtained from pooled PISA 2003, 2009, 2012 and 2015 data.

Figure 4.2 ▪ **Difference between immigrant and native students' sense of belonging at school, by country of origin**

Difference between immigrant and native students in the percentage of students reporting a sense of belonging at school

□■ Difference between second-generation immigrant students and native students
□■ Difference between first-generation immigrant students and native students

Notes: Estimates are obtained by pooling data from the PISA 2003, 2012 and 2015 Databases.

Statistically significant differences are marked in a darker tone.

Only countries with at least 30 immigrants attending at least 5 different schools from a minimum of 2 foreign countries were included in the analysis.

All estimates control for the socio-economic status of students.

Students who report a sense of belonging at school are those who reported that they "agree" or "strongly agree" with the statement "I feel like I belong at school" and "disagree" or "strongly disagree" with the statement "I feel like an outsider at school".

Source: OECD, PISA 2003, 2012 and 2015 Database.

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Important determinants of the social well-being of immigrant students are cultural differences between the heritage and host country's culture. In Finland, first-generation immigrant students coming from Russia and Estonia are 16 and 15 percentage points, respectively, less likely than native students to report a sense of belonging at school. By contrast, first-generation immigrant students from Somalia are 24 percentage points less likely to report so than native Finnish students. Clearly, the adversity that Somalian immigrants have to overcome to become socially integrated is greater than that faced by Russians or Estonians in this case, because the culture in Finland is more distant from Somalians' heritage.

The geographical proximity and the historical ties between two countries influence the flow of immigrants between the countries. Past migrant flows are reflected in the size of immigrant communities in host countries, which has an impact on the ease with which immigrant students can integrate and become socially resilient. Although Spain and Italy are culturally close, first-generation immigrants from the two countries experience different degrees of adversity in Switzerland, where Italians are the largest foreign group and Italian is one of the official languages. While immigrant students from Spain are 30 percentage points less likely than native Swiss students to report a sense of belonging at school, those from Italy are only 16 percentage points less likely to report so. Similarly, in Luxembourg, where the Portuguese and Italian communities are among the largest, immigrants from the two countries are significantly more likely to feel like they belong at school compared to French immigrants, even though French is among the official languages in Luxembourg. First-generation immigrant students from Portugal are 16 percentage points less likely than native students to report a sense of belonging at school, while first-generation immigrant students from France are 25 percentage points less likely to report so.

A comparison of Figures 4.1 and 4.2 shows that the interaction of host- and origin-country characteristics influences the academic and social resilience of students in different ways. In Switzerland, French first-generation immigrant students are significantly more likely than Turkish first-generation immigrant students to be academically resilient, while the opposite is true when it comes to social resilience. While the French students could be academically favoured by linguistic and cultural proximity to Luxembourgers, different factors influence the likelihood of feeling a sense of belonging at school. For example, Turkish immigrant students might integrate more easily because they have a more close-knit community in Luxembourg.

Country of destination effects

The discussion above identifies some of the risk and protective factors associated with immigrants with different countries of origin moving to a specific country, such as their socio-economic status, the quality of education in the country of origin, and linguistic and cultural differences between origin and host countries. While these factors clearly matter, the performance of immigrant students is also strongly related to the characteristics of education systems in host countries. To illustrate this point, Figure 4.3 compares the academic performance of immigrant students from the same country of origin in different host countries. For countries of origin that took part in PISA, the result for the students who did not migrate and have native-born parents (the native students) is also displayed. Estimates account for differences in socio-economic status and are obtained by pooling data from PISA 2006, 2009, 2012 and 2015.

Results presented in Figure 4.3 show that immigrant students from the same country of origin (meaning that they were either born in that country or had both parents who were) have very different likelihoods of being academically resilient depending on the country where they settle. On average after accounting for socio-economic status, first-generation immigrant students from Albania who settled in Greece are 11 percentage points more likely to attain baseline academic proficiency than those who settled in Montenegro, and about 8 percentage points more likely than those who sat the PISA test in Albania. Second-generation immigrant students from Arab-speaking countries who settled in Denmark are about 13 percentage points more likely to be academically resilient compared to those who settled in Finland. The difference is even larger when it comes to second-generation immigrants coming from Iraq (15 percentage points). South African first-generation immigrant students in Australia are almost 50 percentage points more likely to be academically resilient than those in New Zealand. Host communities have different capacities to nurture the talents of students with different intellectual and cultural backgrounds.

Figure 4.3 ■ **Attaining baseline academic proficiency, by host country**

Percentage of immigrant students from the same country of origin attaining baseline academic proficiency after accounting for socio-economic status, by host country
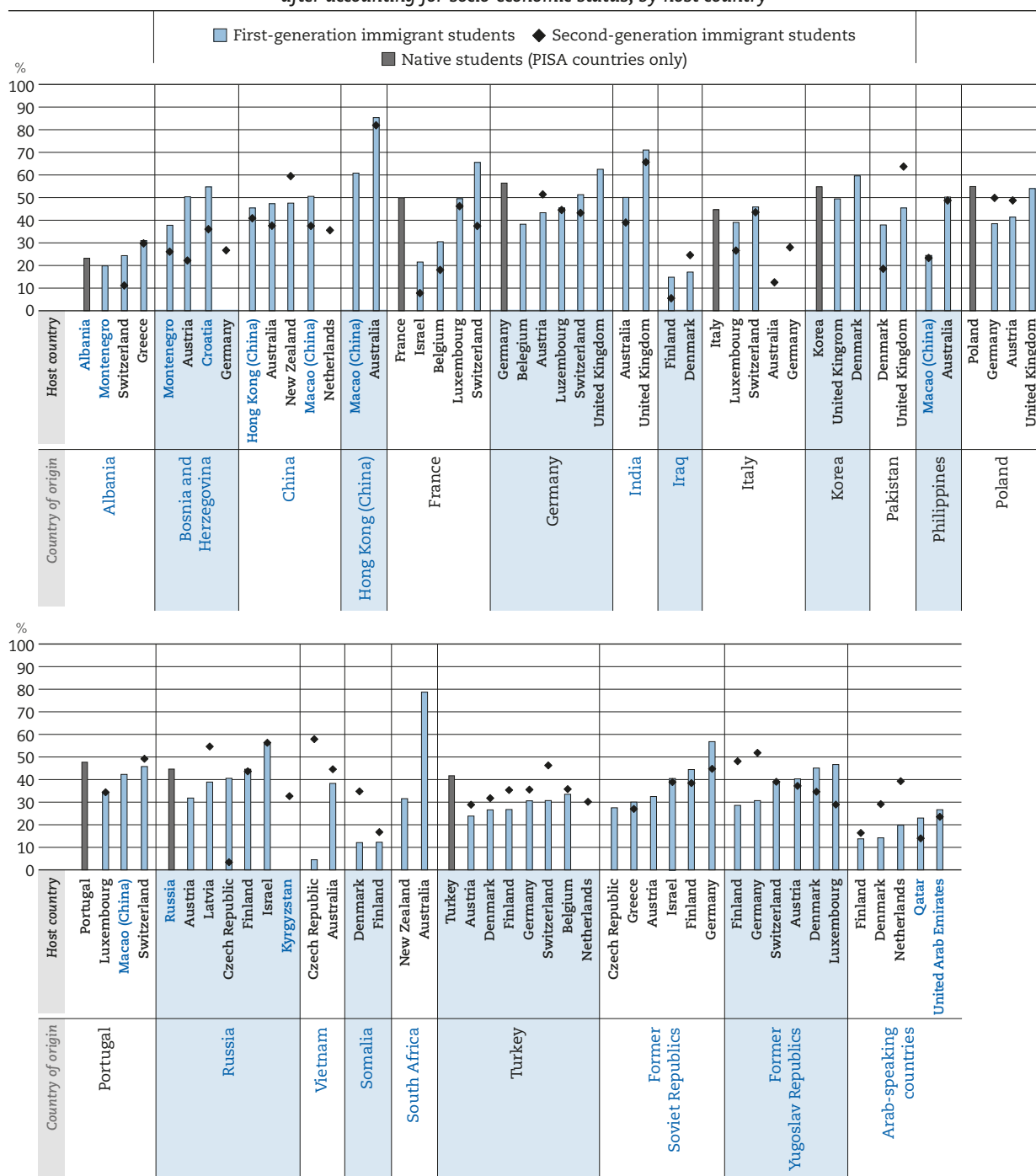
Notes: Estimates are obtained by pooling data from the PISA 2006, 2009, 2012 and 2015 Databases.

The average performance by immigrant group and host country accounts for differences in socio-economic status. It corresponds to the predicted performance of the group if all immigrant students who migrated from that country of origin and all the non-immigrant students across all the host countries shared the same socio-economic status of the average student.

Students who attain baseline academic proficiency are those who attain at least proficiency Level 2 in all three core PISA subjects: science, reading and mathematics.

The coverage of destination countries is limited by the fact that only some countries collect detailed information on immigrants' country of birth. Only destination countries with data on the academic performance of at least 20 immigrant students of the same origin are shown.

Source: OECD, PISA 2006, 2009, 2012 and 2015 Database.

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PISA shows that, in some host countries, education systems manage to promote the academic achievement of immigrants irrespective of their country of origin. For first-generation immigrant students from Germany, India, Pakistan and Poland, the United Kingdom is the destination country where they have the highest likelihood of being academically resilient (among those countries/economies for which there is available data from PISA). Similarly, Australia and Switzerland are among the countries where immigrant students from all countries of origin with available data perform best. The ability of such countries to nurture students from diverse backgrounds stems from several factors, including the selectivity of their immigration policies, the overall quality of their education systems, the language of instruction, and the extent to which their societies have, historically, been open to diversity.

In other destination countries, education systems are more effective with immigrant students from certain countries with which they have more in common culturally, historically or linguistically. For example, first- and second-generation immigrant students from Russia have the highest likelihood of being academically resilient in Israel, among the destination countries with available data. By contrast, first- and second-generation immigrant students from France have the lowest likelihood of being academically resilient in Israel compared to other destination countries.

An interesting comparison is that between students who migrated and those who did not migrate from the same country of origin. The comparison emphasises the adversity related to migration and the difficulties in overcoming it. Figure 4.3 indicates that native students in Albania tend to perform on a par academically compared to Albanian students of similar socio-economic status and who migrated to Switzerland. By contrast, first-generation immigrant students from Albania who moved to Greece have higher chances of attaining baseline academic proficiency than native Albanian students. Compared to Albanian first-generation immigrants in Switzerland, they show greater adjustment to the initial adversity associated with migrating.

After accounting for socio-economic status, for Russian students, only second-generation immigrants who settled in Latvia and first- and second-generation immigrants who settled in Israel are more likely to attain baseline academic proficiency than those who stayed in their country of origin. Polish students who sat the PISA assessment in their home country had similar chances of attaining baseline academic proficiency as second-generation immigrant Polish students living in Germany and Austria, and as first-generation immigrants in the United Kingdom. However, these results should be interpreted with caution because they represent the predicted outcome if all immigrant students from the same country of origin and the native students in the host countries had the socio-economic status as the average student. This implies that the predicted value for native students often corresponds to the academic performance of the most socio-economically advantaged students who remained in the country of origin, since destination countries tend to be better-off, economically, than countries of origin.

Figure 4.4 is similar to Figure 4.3 but it represents the percentage of immigrant students from the same country of origin in different host countries who reported a sense of belonging at school. Estimates account for differences in socio-economic status and are obtained by pooling data from PISA 2003, 2012 and 2015. Results show that the social well-being of immigrant students varies remarkably according to the country in which they (or their parents) settle. First-generation immigrant students from Russia who settled in Latvia are over 45 percentage points more likely than those who settled in the Czech Republic to report a sense of belonging at school. Second-generation immigrant students from Arab-speaking countries who settled in Australia are about 37 percentage points more likely than those who settled in Qatar to report a sense of belonging at school, despite the linguistic differences between the two countries.

Results presented in Figure 4.4 show that 89% of second-generation immigrant students from Iraq who live in Finland report a sense of belonging at school, while only 63% of those who live in Denmark report the same. Similarly, 82% of Somalian second-generation immigrant students who live in Finland reported a sense of belonging at school, while only 63% of those living in Denmark reported so. While 83% of second-generation immigrant students from Arab-speaking countries living in Finland report a sense of belonging at school, only 63% of those living in Denmark report so. These results suggest that the psychological well-being of immigrant students is affected not only by cultural or linguistic differences between the country of origin and the host country, but also by how schools and communities help these students deal with daily problems of living, learning and communicating.

Figure 4.4 ▪ **Sense of belonging, by host country**

Percentage of immigrant students from the same country of origin reporting a sense of belonging after accounting for socio-economic status, by host country
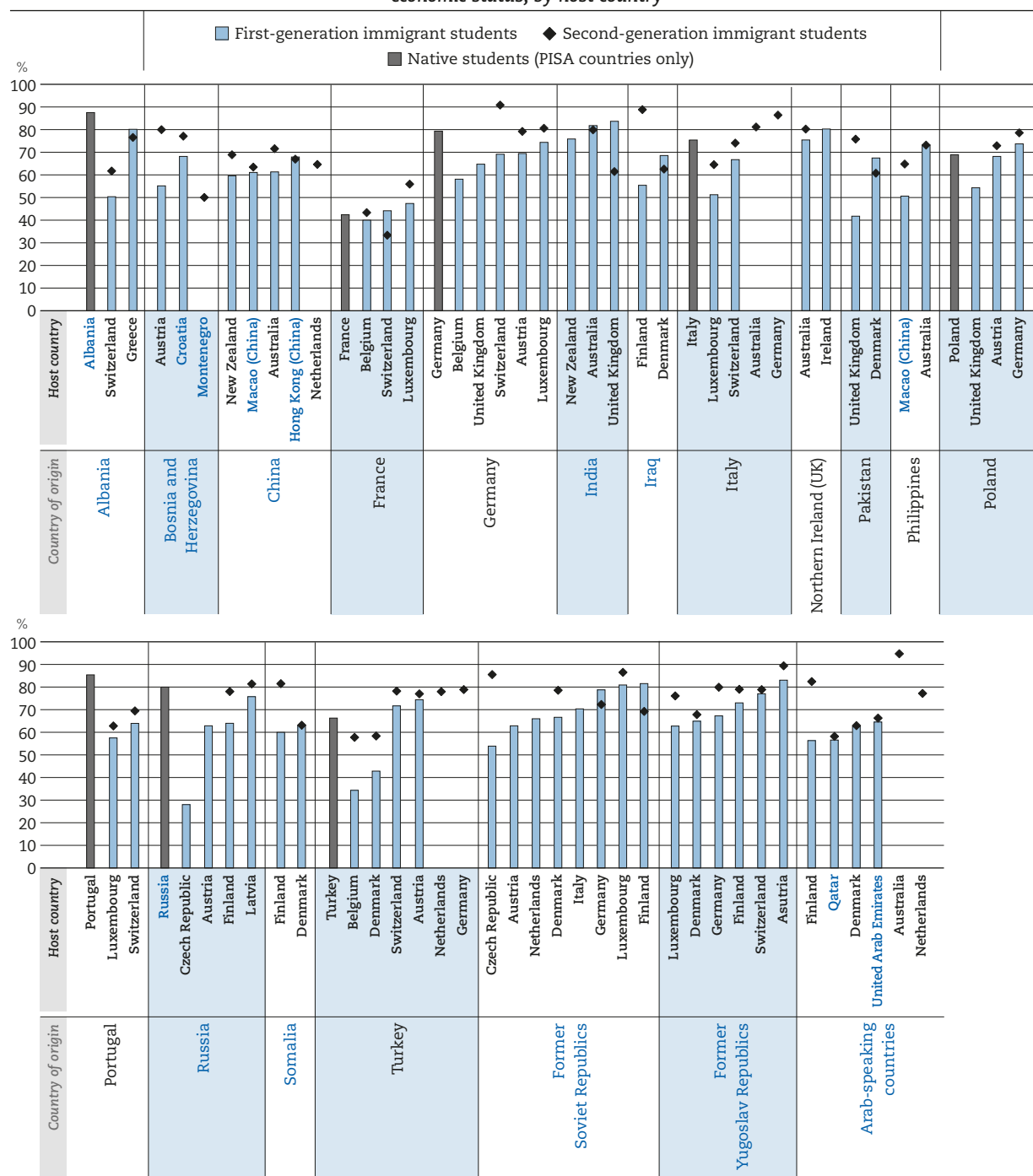
Notes: Estimates are obtained by pooling data from the PISA 2003, 2012 and 2015 Databases.

The average sense of belonging by immigrant group and host country accounts for differences in socio-economic status. It corresponds to the predicted sense of belonging of the group if all immigrant students who migrated from that country of origin and all the non-immigrant students across all the host countries shared the same socio-economic status of the average student.

Students who report a sense of belonging at school are those who reported that they "agree" or "strongly agree" with the statement "I feel like I belong at school" and "disagree" or "strongly disagree" with the statement "I feel like an outsider at school".

The coverage of destination countries is limited by the fact that only some countries collect detailed information on immigrants' country of birth. Only destination countries with data on the sense of belonging of at least 20 immigrant students of the same origin are shown.

Source: OECD, PISA 2003, 2012 and 2015 Database.

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The figure also shows that, for most of the countries of origin that participated in PISA, native–born students who remained in the country, are more likely to report a sense of belonging at school than those who have parents who migrated but especially compared to those who themselves migrated. This reflects the social and emotional disadvantage that result from displacement. However, the results also show that some immigrant students manage to adjust to such adversity and, in some cases, are more likely to report a sense of belonging at school than their peers who had not migrated.

Working for pay and doing unpaid work

Working in a paid or unpaid job are two important factors shaping students' academic and well-being outcomes and can be a mediating factor between immigrant background and resilience. The probability of working in the household or working for pay can be affected by family characteristics and socio-economic status (Gager, Cooney and Call, 1999). The demand for adolescents to work tends to be greater in single parent and multi-generational households and when the number of siblings is greater (Gager, Cooney and Call, 1999). PISA 2015 shows that more boys than girls work for pay and fewer boys than girls do unpaid household work. Furthermore, across OECD countries disadvantage students are about 6 percentage points more likely to work for pay than advantage students. Students who work for pay tend to score lower in science are more likely to report feeling like an outsider at school, having low expectations for further education, arriving late for school, and skipping school (OECD, 2017).

PISA 2015 measured whether students did paid work by asking students if they worked for pay before or after school during the most recent day they attended school. Similarly, students' involvement in unpaid work was measured by asking students if they worked in the household or took care of other family members before or after school during the most recent day they attended school.

Figure 4.5 ■ **Students working for pay, by immigrant background**
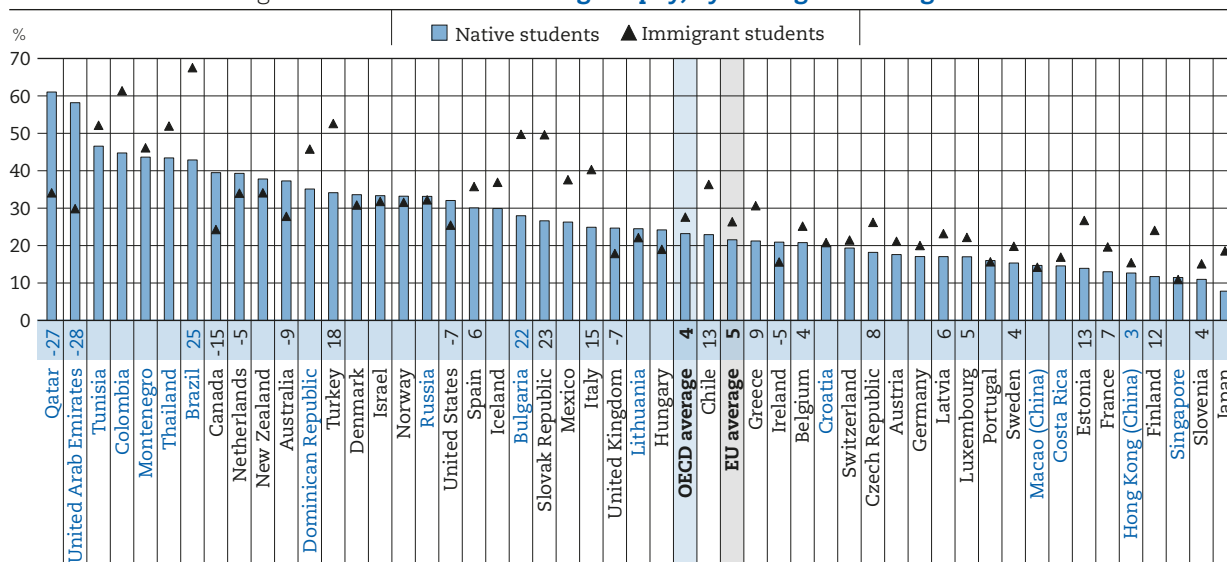
Notes: Only countries with valid values for immigrant students are shown.
Students who work for pay are those who reported that they had worked for pay before or after school during the most recent school day.
Statistically significant differences in the percentage of students who work for pay between immigrant and native students are shown next to the country/economy name.
Countries and economies are ranked in descending order of the percentage of native students who work for pay.
Source: OECD, PISA 2015 Database, Table 4.1.
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Figure 4.5 shows that, in most countries and economies, the proportion of students who worked for pay in 2015 was greater among immigrant students than among native students (results on other categories of students with an immigrant background are available in Table 4.1 available on line). On average across OECD countries, the proportion of immigrant students who reported that they had worked for pay before or after school during the most recent day was four percentage points larger than that of native students

(5 percentage points greater across EU countries). In 18 countries and economies, a greater percentage of immigrant students than native students worked for pay. This difference was greater than 15 percentage points in Brazil, Bulgaria, Italy, the Slovak Republic and Turkey. By contrast, in eight countries and economies, native students were more likely to work for pay than immigrant students. The difference was particularly large in Canada, Qatar and the United Arab Emirates, where the percentage of students who worked for pay was at least 15 percentage points larger among native students than among immigrant students.

PISA reveals that the difference between native and immigrant students in the likelihood of working for pay is an important mediating factor between immigrant background and academic resilience. Figure 4.6 shows the difference in the percentage of students attaining baseline academic proficiency among native and immigrant students, before and after accounting for whether they worked for pay during the most recent school day. In 16 countries and economies, the performance gap between native and immigrant students shrank after participation in paid work was accounted for. On average across OECD and EU countries, the difference between native and immigrant students in the percentage of students who attained baseline academic proficiency in 2015 decreased by one percentage point after accounting for the difference in the percentage of students who work for pay. The narrowing of the performance gap was larger than five percentage points in Brazil, Bulgaria, the Slovak Republic and Turkey.

Figure 4.6 ▪ **Difference between immigrant and native students in attaining baseline academic proficiency, before and after accounting for paid work**
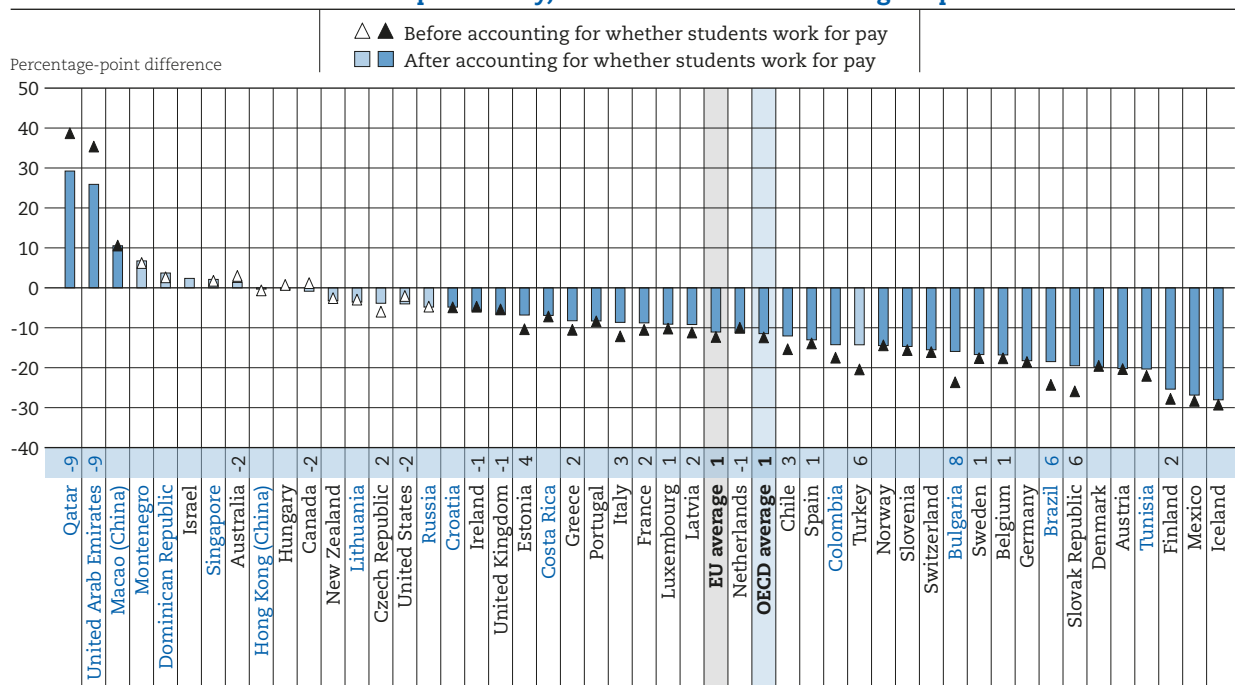
Notes: Statistically significant differences are marked in a darker tone.
Only countries/economies with valid data on the immigrant-native gap in attaining baseline academic proficiency are shown.
Students who work for pay are those who reported that they had worked for pay before or after school during the most recent school day.
Statistically significant differences in the immigrant-native gaps calculated before and after accounting for whether students work for pay are shown next to the country/economy name.
Countries and economies are ranked in descending order of the percentage-point difference between immigrant and native students in the percentage of students attaining baseline academic proficiency, after accounting for whether students work for pay.
**Source:** OECD, PISA 2015 Database, Table 4.3.
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Figure 4.7 shows that, in most countries, immigrant students are more likely than native students to work in the household or take care of family members. On average across OECD and EU countries, the percentage of students who in 2015 reported that they did unpaid work at home during the most recent school day was two percentage points larger among immigrant students than among native students

(results for other categories of students with an immigrant background are available in Table 4.2 available on line). Overall, differences between native and immigrant students in participation in unpaid work activities are smaller than those related to paid work. The difference was larger than 10 percentage points only in Costa Rica, Greece and the Netherlands. In Latvia, Lithuania and the United Arab Emirates, native students were more likely than immigrant students to report that they do unpaid work in the household. Interestingly, in a set of countries where immigrant students were less likely than native students to work for pay, the opposite was true when considering work in the household. This was the case in Australia, Canada, the Netherlands, the United Kingdom, the United States and Qatar.

Figure 4.7 ▪ **Students doing unpaid work, by immigrant background**
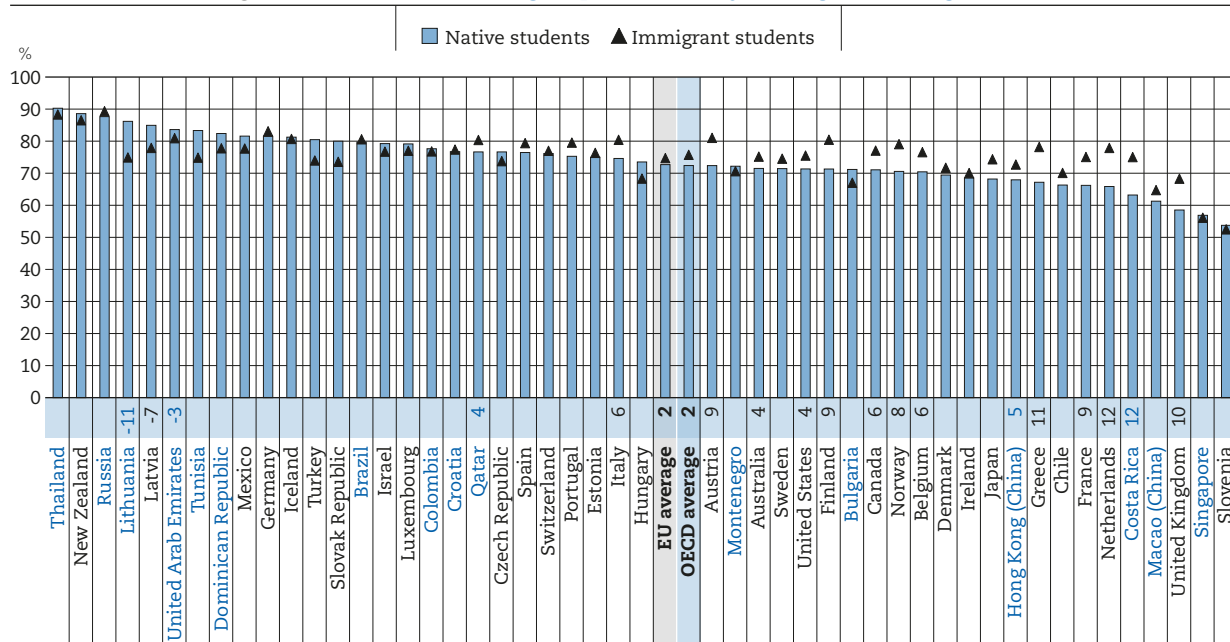
Notes: Only countries with valid values for immigrant students are shown.

Students who do unpaid work are those who reported that they had worked in the household or taken care of other family members before or after school during the most recent school day.

Statistically significant differences in the percentage of students doing unpaid work between immigrant and native students are shown next to the country/economy name.

Countries and economies are ranked in descending order of the percentage of native students doing unpaid work.

Source: OECD, PISA 2015 Database, Table 4.2.

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Table 4.3 (available on line) shows that accounting for the likelihood of doing unpaid work in the household reduces the academic gap between immigrant and native students only slightly. On average across OECD and EU countries, the percentage-point difference in the likelihood of attaining baseline academic proficiency between native and immigrant students decreased by 0.1 percentage point. The change was greater than 0.5 percentage point in Austria, Greece and the United Kingdom, where immigrant students were at least nine percentage points more likely than native students to work in the household.

Participation in pre-primary education

Attendance at pre-primary education is strongly associated with the academic proficiency and well-being of students and can be a mediating factor between immigrant background and academic resilience. Research shows that when students do not attend school, inequalities in education tend to increase (Downey, Von Hippel and Broh, 2004). By the time children first enter formal schooling many of these inequalities are already evident and tend to persist as students progress through education (Berlinski, Galiani and Gertler, 2009; Entwisle, Alexander and Olson, 1997; Mistry et al., 2010). Earlier entry into pre-primary school helps students to be better prepared for entry into formal schooling (Chetty et al., 2011).

However, to reduce inequalities in education it is essential that access to pre-primary education is universal and learning opportunities across pre-primary schools are of high quality and relatively homogeneous (PISA 2015). PISA 2015 shows that, across OECD countries, attendance at pre-primary school is associated with better performance at the age of 15, even after accounting for students' socio-economic status. Furthermore, among students who had attended pre-primary education, disadvantaged students are more likely to have attended pre-primary education for shorter periods of time.

In 2015 PISA administered a questionnaire among the parents of students participating in the study asking, among other things, if their children had taken part in pre-primary education.[3] Figure 4.8 shows that the rate at which immigrant students participate in pre-primary programmes varies significantly across countries. In Spain in 2015, 94% of immigrant students had parents who reported that their children had attended a pre-primary programme as youngsters, while in Germany only 46% of them did. In 11 countries and economies out of the 16 included in the analysis, the rate of participation in pre-primary programmes was considerably lower among immigrant students than among native students (results for other categories of students with an immigrant background are available in Table 4.4 available on line). On average across OECD countries, 88% of the parent of native students reported that their children had participated in a pre-primary programme, while only 76% of immigrant students had parents who so reported (a difference of 12 percentage points; 13 percentage points on average across EU countries). The difference was greater than 15 percentage points in Belgium, Ireland, Italy, Malta and the United Kingdom.

Figure 4.8 ▪ **Students who had attended pre-primary education, by immigrant background**
Percentage-point difference between immigrant and native students in the proportion of students who had attended pre-primary education
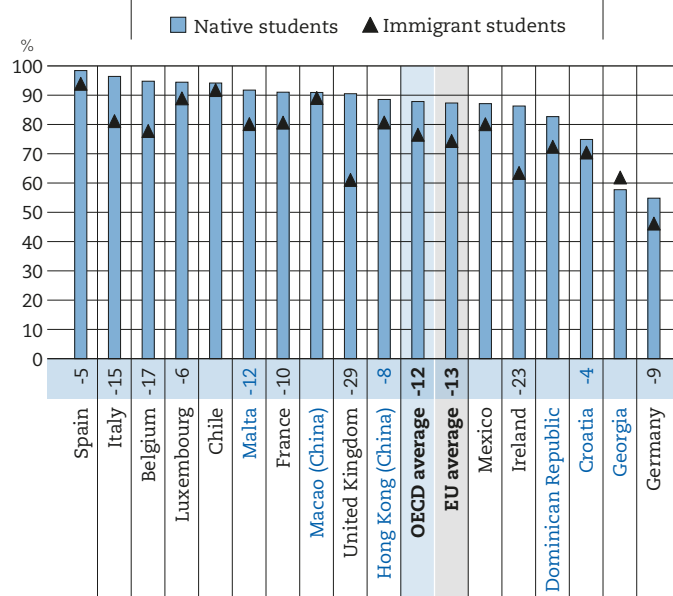
Notes: Only countries that distributed the parental questionnaire are shown.
Statistically significant differences in the percentage of students who attended pre-primary education between immigrant and native students are shown next to the country/economy name.
Countries and economies are ranked in descending order of the percentage of native students who had attended pre-primary education.
Source: OECD, PISA 2015 Database, Table 4.4.
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The difference in participation rates is attributable to different factors in each country. In some countries, it may be due to limited access to such programmes in immigrant students' countries of origin. Table 4.4 (available on line) shows that, in most countries and economies, second-generation immigrant students were more likely to have participated in a pre-primary programme than first-generation immigrant students. The difference between the two groups of immigrant students was nine percentage points across OECD countries (ten percentage points across EU countries). Second-generation immigrant students were

thus only eight percentage points less likely to have attended pre-primary education than native students (seven percentage points across EU countries). In Croatia and Luxembourg, second-generation immigrant students were as likely as native students to have participated in a pre-primary programme, and were over 13 percentage points more likely than first-generation immigrant students to have done so.

In some countries, participation in pre-primary education was low among both first- and second-generation immigrant students. This could be due to parents' resistance to pre-primary education, possibly because these parents had little experience of these types of programmes in their country of origin. However, as shown in Table 4.4 (available on line), returning foreign-born students were also less likely than native students to have participated in a pre-primary programme. On average across OECD countries, they were six percentage points less likely to have done so (eight percentage points across EU countries); in France, Italy, Luxembourg and Malta, they were over 10 percentage points less likely.

In other countries, these differences could reflect a broader socio-economic divide. PISA finds that socio-economically disadvantaged students are considerably less likely than their more advantaged peers to have attended pre-primary education. Table 4.4 (available on line) reports the percentage-point difference in the percentage of native students and students with different immigrant backgrounds who had attended pre-primary programmes, before and after accounting for their socio-economic status. On average across OECD countries, controlling for socio-economic status reduces the gap between native and immigrant students in the percentage of students who had enrolled in pre-primary programmes from 12 to 11 percentage points (results for other categories of students with an immigrant background are available in Table 4.4 available on line). In all countries, accounting for socio-economic status reduces the gap between native and immigrant students by, at most, three percentage points. Differences in socio-economic status between the two groups explain only a small part of the difference in participation rates.

Figure 4.9 ■ **Difference between immigrant and native students in attaining baseline academic proficiency, by pre-primary education**
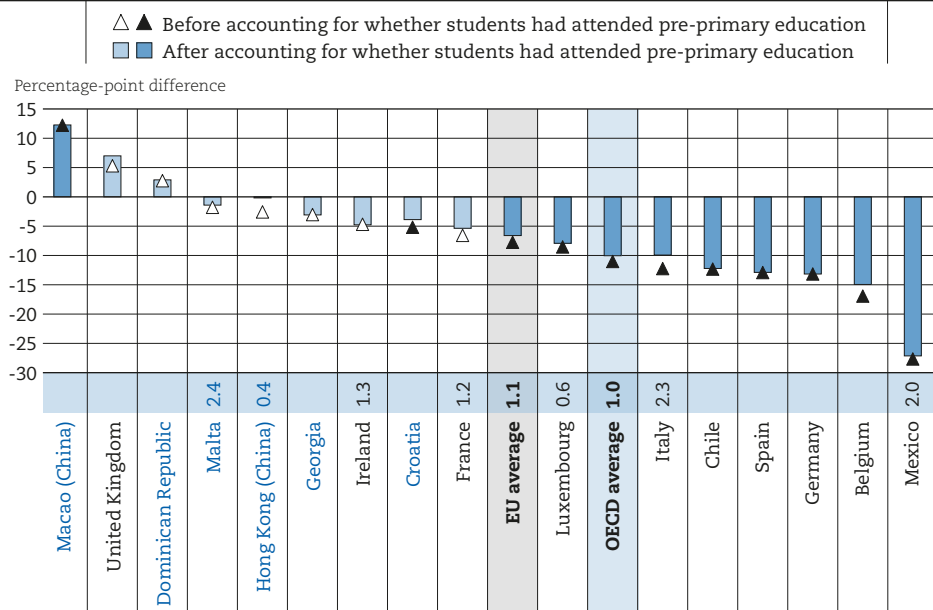
Notes: Statistically significant differences are marked in a darker tone.
Only countries that distributed the parental questionnaire are shown.
Results account for students' socio-economic status as measured by their score on the PISA index of economic, social and cultural status (ESCS).
Statistically significant differences in the immigrant-native gaps calculated before and after accounting for whether students had attended pre-primary education are shown next to the country/economy name.
Countries and economies are ranked in descending order of the percentage-point difference between immigrant and native students in the percentage of students attaining baseline academic proficiency, after accounting for whether students attended pre-primary education.
Source: OECD, PISA 2015 Database, Table 4.5.
StatLink ⟨ℴℯ⟩⟨⟩ http://dx.doi.org/10.1787/888933681426

Figure 4.9 reveals that the gap in participation in pre-primary education between native and immigrant students explains part of the gap in academic performance between the two groups. On average across OECD and EU countries, the difference between native and immigrant students in the percentage of students who attained baseline academic proficiency decreases by one percentage point after accounting for participation in pre-primary education. In Belgium and Italy, the change associated with accounting for participation in pre-primary education socio-economic status was two percentage points.

Gender differences

In many OECD countries over the past few decades, the traditional gender gap in education outcomes, in which boys outperform girls, has been inverted. Evidence suggests that girls have overtaken boys in many academic areas (Breen et al. 2010; Buchmann, DiPrete, and McDaniel 2008). It is particularly striking that girls are consistently more likely than boys to achieve the baseline levels of proficiency in the three core PISA subjects (science, reading and mathematics), the indicator of academic adjustment examined in this report (OECD, 2015). At the same time, in many OECD societies, immigration is predominantly from countries where boys still outperform girls (Fleischmann and Kristen; 2014). Girls' advantage in education appears to be greater among children from socio-economically disadvantaged families (Entwisle, Alexander, and Olson 2007); since immigrant children are over-represented among disadvantaged students, it is possible that the gender gap in favour of girls might be more pronounced among immigrant students than native students.

A key question, therefore, is whether the gender gap among students with an immigrant background mirrors the gender gap that is prevalent among native students. Similarity between gender gaps observed within immigrant communities and gender gaps observed within native populations has been considered an important indicator of assimilation and integration, since gender norms often differ markedly between immigrant communities and native populations (Alba and Nee 1997; Fleischmann and Kristen; 2014).

There is little evidence concerning patterns of gender gaps within immigrant communities, but the evidence available points towards a general pattern of girls' advantage resembling that prevalent within native populations (Dronkers and Kornder 2014; Fleischmann and Kristen; 2014). Nonetheless, there is some heterogeneity related to the specific profile of immigrant communities and broad patterns of gender disparities in countries of destination (Fleischmann and Kristen; 2014).

Results presented in Table 4.7 (available on line) suggest similarities in the relative outcomes of boys and girls with an immigrant background and of native boys and girls. Gender gaps in academic achievement among students with an immigrant background are similar to those observed among native students. Among native students in 30 out of 72 countries, girls were more likely than boys (by around two percentage points across OECD and EU countries) to reach baseline levels of academic proficiency. In all countries except for Macao, Malta, and the United Arab Emirates, the gender gap in favour of girls was similar among all groups of immigrant students, while in Mexico and New Zealand, girls' advantage was even more pronounced among first-generation immigrants.

Gender gaps in social and emotional outcomes are also similar across immigrant backgrounds. In 42 countries and economies, among native students, girls were more likely than boys to report a sense of belonging at school. In Germany, the same was true among second-generation immigrant students, while the opposite was true among native students. In Iceland, native boys and girls expressed a similarly strong sense of belonging while, among first-generation immigrant students, girls were significantly more likely than boys to report a sense of belonging at school. Table 4.9 (available on line) shows that these gender gaps are inverted when it comes to life satisfaction. In 40 out of 46 countries and economies with available data, native boys were more likely than native girls (by around 10 percentage points across OECD and 11 percentage points across EU countries) to report being satisfied with life. In Chile, the gap was reversed among first-generation immigrant students, while in Portugal this gap was even larger among second-generation immigrant students.

In all countries with available data except for the Dominican Republic, Macao (China) and the United Arab Emirates, native girls were less likely than native boys to report low levels of schoolwork-related anxiety. The gap was greater than 10 percentage points in most countries; on average across OECD

and EU countries it was as large as 17 percentage points. In Canada, Chile, Costa Rica, Finland and Ireland, the gap was narrower among first-generation immigrant students; in Australia, Canada, Italy, Luxembourg and the United Kingdom, it was smaller among second-generation immigrant students. Girls also tended to report lower levels of motivation than boys in most countries and economies. On average across OECD countries, among native students, girls were six percentage points less likely to report high levels of achievement motivation (seven percentage points less likely across EU countries). However, among first-generation immigrant students, the gap was four percentage points (six percentage points across EU countries). In Chile, New Zealand and the United Kingdom, among first-generation immigrant students, girls were more likely than boys to report high levels of achievement motivation. In Austria and Belgium the gender gap in achievement motivation was still in favour of boys, but was narrower among first-generation immigrant students than among native students.

In order to identify differences in gender gaps related to the region of origin, analyses were conducted on the pooled sample of immigrant students and of students with an immigrant background who participated in PISA 2015 introducing the students' region of origin (with the European and North American region as the reference group) as a variable, controlling for students' and schools' socio-economic profile and country of destination. Analyses do not reveal any differences in the gender gaps related to region of origin (Table 4.12). Subsample analyses were conducted on foreign-born and native-born students (models 2 and 3 in each table) to identify possible assimilation processes or differences associated with recent arrival from a particular region of the world (Table 4.12). No gender gaps emerge.

Table 4.12 ▪ **Change in the likelihood that students will reach baseline levels of academic proficiency, regression-based coefficients**

	Effect on the likelihood of attaining baseline academic proficiency					
	Students with an immigrant background	Native-born students with an immigrant background	Foreign-born students with an immigrant background	Immigrant students	First-generation immigrant students	Second-generation immigrant students
Female students	1.52 (1.60)	1.34 (1.86)	0.82 (1.79)	1.16 (1.62)	0.81 (2.28)	0.81 (2.28)
Socio-economic status (ESCS)	5.73*** (0.61)	6.24*** (0.73)	3.41*** (1.00)	2.44*** (0.78)	3.91*** (1.06)	1.84* (0.99)
School Socio-economic profile (school average ESCS)	22.49*** (1.47)	22.1*** (1.64)	22.43*** (2.60)	27.9*** (1.97)	28.09*** (2.10)	26.96*** (2.80)
Oceania	-5.14** (2.36)	-4.39 (2.79)	-14.67** (6.20)	-11.63*** (4.46)	-15.37** (6.72)	-6.45 (6.03)
South America	1.99 (3.17)	3.42 (3.57)	1.99 (6.65)	1.22 (5.73)	5.98 (7.82)	-2.26 (6.72)
Africa	-3.06 (2.73)	-1.94 (2.95)	-9.62* (5.58)	-0.66 (3.95)	-6.25 (6.07)	-2.15 (4.56)
East Asia and South East Asia	3.86* (2.23)	8.2*** (2.97)	-7.48 (5.03)	3.28 (3.20)	-11.03** (4.32)	10.98*** (4.13)
Western Asia	-7.53*** (2.75)	-8.24*** (3.06)	-10.48* (5.68)	-10.6*** (3.88)	-10.01 (6.24)	-14.85*** (4.26)
Central America and Caribbean	-8.72 (7.60)	6.28 (8.59)	-3.25 (9.86)	4.68 (8.46)	1.45 (12.30)	5.73 (10.16)
Female*Africa	-2.43 (3.43)	-2.11 (4.06)	2.44 (6.61)	-1.17 (4.73)	2.01 (6.88)	-0.72 (5.74)
Female*Central America and Caribbean	-3.14 (6.60)	-2.95 (7.18)	3.65 (6.98)	-2.76 (3.97)	3.37 (7.82)	-4.57 (5.01)
Female*East Asia and South East Asia	1.91 (2.78)	2.13 (2.82)	2.3 (6.49)	1.12 (2.44)	2.48 (4.35)	0.09 (3.14)
Female*Oceania	3.8 (3.03)	1.58 (2.91)	14.29 (9.49)	4.49 (5.34)	7.29 (7.19)	0.05 (7.65)
Female*South America	-4.28 (2.82)	-4.67 (3.08)	1.96 (9.73)	-3.2 (6.94)	-7.4 (11.02)	-0.1 (9.23)
Female*Western Asia	-0.58 (3.31)	-1.08 (3.59)	6.54 (6.36)	6.53 (4.04)	9.06 (6.93)	5.51 (4.62)
Adjuted R squared	0.230	0.230	0.250	0.243	0.249	0.251
Number of Observations	69148	53105	16043	28482	11569	16913

Notes: Standard error in parentheses.
* p<0.10, ** p<0.05, *** p<0.01
North American and European students are the base case to which students from other regions are compared.
ESCS refers to the PISA index of economic, social and cultural status.
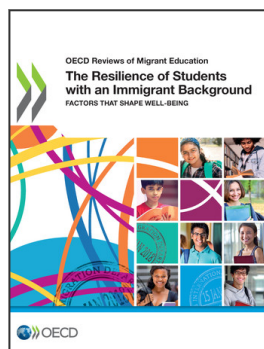**Source:** OECD, PISA 2015 Database.
StatLink ⬛⬛ http://dx.doi.org/10.1787/888933681445

Notes

1. Students who attain at least proficiency Level 2 in all three PISA core subjects – science, reading and mathematics.

2. Students who reported that they "agree" or "strongly agree" with the statement "I feel like I belong at school", and "disagree" or "strongly disagree" with the statement "I feel like an outsider at school".

3. Information on participation in pre-primary education is also asked to the students themselves. However, since students may not adequately remember about their participation in such activities and recollection may vary across groups of students, the analyses presented in this chapter are based on data derived from the parental questionnaire.

References

Alba, R. and **V. Nee.** (1997), "Rethinking assimilation theory for a new era of Immigration" *International Migration Review,* Vol. 31/4, pp. 826-74.

Berlinski, S., S. Galiani and **P. Gertler** (2009), "The effect of pre-primary education on primary school performance", *Journal of Public Economics,* Vol. 93/1, pp. 219-234, www.ifs.org.uk/publications/3583.

Breen, R. et al. (2010), "Long-term trends in educational inequality in Europe: Class inequalities and gender differences." *European Sociological Review,* Vol. 26/1, pp. 31-48.

Buchmann, C., T.A. DiPrete and **A. McDaniel** (2008), "Gender inequalities in education" *Annual Review of Sociology,* Vol. 34, pp. 319-37.

Chetty, R. et al. (2011), "How does your kindergarten classroom affect your earnings? Evidence from Project STAR", *The Quarterly Journal of Economics,* Vol. 126/4, pp. 1593-1660, http://dx.doi.org/10.3386/w16381.

Downey, D., P. Von Hippel and **B. Broh** (2004), "Are schools the great equalizer? Cognitive inequality over the summer months and the school year", *American Sociological Review,* Vol. 69/5, pp. 613-635, www.jstor.org/stable/3593031.

Dronkers, J. and **N. Kornder** (2014), "Do migrant girls always perform better? Differences between the reading and math Scores of 15-year-old daughters and sons of migrants in PISA 2009", *Educational Research and Evaluation,* Vol. 20/1, pp. 44-66.

Entwisle, D.R., K.L. Alexander and **L.S. Olson** (2007), "Early schooling: The handicap of being poor and male", *Sociology of Education,* Vol. 80/2, pp. 114-38.

Entwisle, D., K. Alexander and **L. Olson** (1997), *Children, Schools and Inequality,* Westview Press, Boulder, CO.

Fleischmann, F. and **C. Kristen** (2014) "Gender Inequalities in the Education of the Second Generation in Western Countries", *Sociology of Education,* Vol. 87/3, pp. 143-170.

Gager, C.T., T.M. Cooney and **K.T. Call** (1999), "The effects of family characteristics and time use on teenagers' household labor", *Journal of Marriage and Family,* Vol. 61/2, pp. 982-994, http://dx.doi.org/10.2307/354018.

Mistry, R.S. et al. (2010), "Family and social risk, and parental investments during the early childhood years as predictors of low-income children's school readiness outcomes", *Early Childhood Research Quarterly,* Vol. 25/4, pp. 432-449, http://dx.doi.org/10.1016/j.ecresq.2010.01.002.

OECD (2015), The ABC of Gender Equality in Education: Aptitude, Behaviour, Confidence, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264229945-en.

OECD (2017), PISA 2015 Results (Volume III): Students' Well-Being, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264273856-en.