3

The Challenge of Diversity

This chapter examines various aspects of students' and schools' characteristics that have an impact on education outcomes, including family structure, parents' job status, school location, immigrant background and language spoken at home. It also discusses trends in immigrant students' mathematics performance up to 2012.

Socio-economic status is only one aspect of a student's background that is related to mathematics performance. Other factors include family structure, school location, immigrant background and language spoken at home (as compared with the language of assessment in PISA). All of these factors have an impact on the work of schools and teachers, and the way in which schools and teachers address them has an impact on education outcomes. They are also in many cases closely related to the socio-economic status of students and schools. This chapter discusses the relationship between student performance and these factors.

Across OECD countries, around 14% of 15-year-old students come from single-parent families (Table II.3.1); more than 10% from families where the father or mother does not work (Table II.3.2); 11% have an immigrant background (Table II.3.4a); 6% are immigrant students who usually speak a language at home that is different from the one in which they are taught at school (Table II.3.5); and 9% attend schools in small rural communities (Table II.3.3a). This chapter explores equity in education across groups of students who share some of these individual and school characteristics. Analysing equity across different groups of students can help policy makers target or adjust education and social policy to the needs of an increasingly diverse student population.

What the data tell us

- The share of immigrant students in OECD countries increased from 9% in 2003 to 11% in 2012 while the performance disadvantage of immigrant students as compared to students without an immigrant background but with similar socio-economic status shrank by 11 score points during the same period.
- Across OECD countries, students who attend schools where more than one in four students are immigrants tend to perform worse than those in schools with no immigrant students; but after accounting for the socio-economic background of students and schools, the 19-point difference in mathematics scores is more than halved, to 7 score points.

FAMILY STRUCTURE AND STUDENT PERFORMANCE

The family is usually the first place where students can be encouraged to learn. Parents may read to their young children, assist them with homework, and/or participate in school activities (OECD, 2012a). For every student, supportive parents can offer encouragement and meet with teachers or school administrators to keep track of their child's progress in school.[1]

Among OECD countries, around 14% of the 15-year-old students who participated in PISA 2012 were from single-parent families. Many of them also come from socio-economically disadvantaged backgrounds. On average across OECD countries, students from single-parent families are disadvantaged when compared with students from other types of families generally because their parents have lower educational attainment or work in occupations of lower status, or the family has fewer home possessions as reported by the students themselves (Table II.3.1).

Figure II.3.1 depicts the average mathematics performance of students who live in a single-parent household compared to students in other types of families,[2] before and after accounting for socio-economic status. Across OECD countries, the performance gap between students from single-parent families and those from other types of families is 15 score points – or the equivalent of almost half a year of schooling – before taking socio-economic status into account.

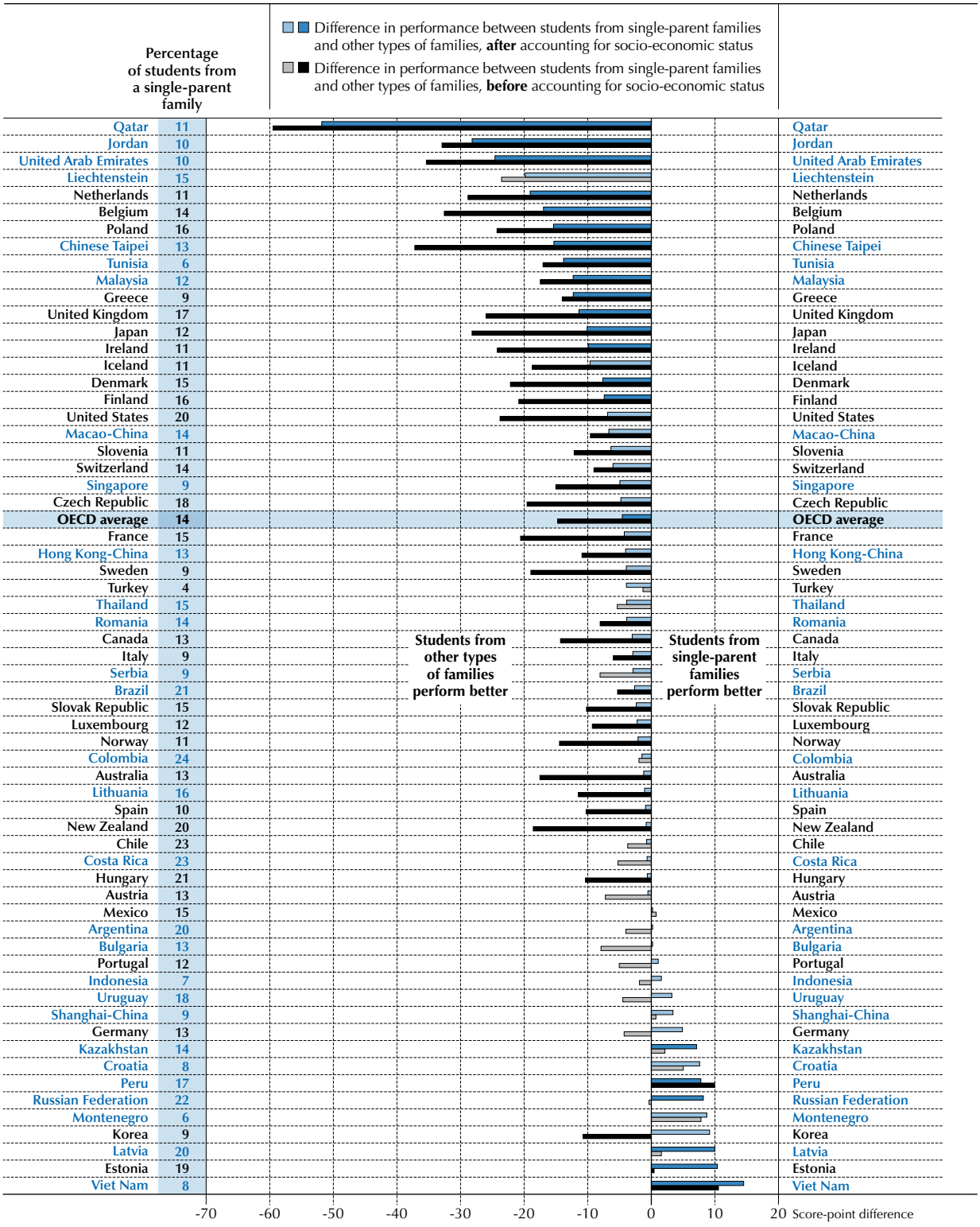
Students from single-parent families are 1.23 times more likely to score in the bottom quarter of mathematics performance in their country than students from other types of families; this is known as the "relative risk" for students from single-parent households compared with that for students from other types of families (Table II.3.1). Box II.3.3 presents another way of evaluating the relevance of risk factors, such as family structure or immigrant background, in the entire student population.

In general, accounting for socio-economic status reduces, and in some cases eliminates, the performance gap observed between students from single-parent families and those from other types of families. While family structure is related to socio-economic status, analysis of PISA data cannot disentangle the separate impact of each of these variables on student performance. That performance differences remain marked even after accounting for students' socio-economic status suggests that there is an independent relationship between family structure and education opportunities.

■ Figure II.3.1 ■

Difference in mathematics performance, by type of family

Differences in performance before and after accounting for socio-economic status



	Percentage of students from a single-parent family
Qatar	11
Jordan	10
United Arab Emirates	10
Liechtenstein	15
Netherlands	11
Belgium	14
Poland	16
Chinese Taipei	13
Tunisia	6
Malaysia	12
Greece	9
United Kingdom	17
Japan	12
Ireland	11
Iceland	11
Denmark	15
Finland	16
United States	20
Macao-China	14
Slovenia	11
Switzerland	14
Singapore	9
Czech Republic	18
OECD average	**14**
France	15
Hong Kong-China	13
Sweden	9
Turkey	4
Thailand	15
Romania	14
Canada	13
Italy	9
Serbia	9
Brazil	21
Slovak Republic	15
Luxembourg	12
Norway	11
Colombia	24
Australia	13
Lithuania	16
Spain	10
New Zealand	20
Chile	23
Costa Rica	23
Hungary	21
Austria	13
Mexico	15
Argentina	20
Bulgaria	13
Portugal	12
Indonesia	7
Uruguay	18
Shanghai-China	9
Germany	13
Kazakhstan	14
Croatia	8
Peru	17
Russian Federation	22
Montenegro	6
Korea	9
Latvia	20
Estonia	19
Viet Nam	8

Note: Score-point differences that are statistically significant are marked in a darker tone.

Countries and economies are ranked in ascending order of the score-point difference between students from single-parent families and other types of families, after accounting for socio-economic status.

Source: OECD, PISA 2012 Database, Table II.3.1.

StatLink http://dx.doi.org/10.1787/888932964832

Box II.3.1. **Population relevance or attributable risk**

One way of measuring the importance of risk factors is through "population relevance". Population relevance expresses the proportion of the total outcome, such as low mathematics scores, that is associated with membership in a potentially vulnerable population. In the context of single-parent families, the population relevance would measure the extent to which the incidence of poor performance in mathematics among the entire student population would be reduced if the risk of low performance among students from single-parent households were the same as that among students from other types of families. Analysis suggests that if public policy were able to reduce the risk of low performance among students from single-parent families to the same as that among students from other types of families, then the proportion of low-performing students would be reduced by 3% (Table II.3.1). While the relative risk of low performance simply suggests the degree of vulnerability to poor performance a student from particular population is, population relevance provides an absolute measure of how prevalent this source of vulnerability is for the entire student population. The population relevance depends on the relative risk associated with membership in the vulnerable group and on the relative size of the vulnerable group.

On average, after accounting for socio-economic status, students from single-parent families score five points lower in mathematics than students from other types of families. More than 20% of students in Brazil, Chile, Colombia, Costa Rica, Hungary and the United States come from single-parent families and they perform at the same level as their peers from other types of families, after accounting for socio-economic status (before the adjustment, however the performance is lower in the United States, Hungary and Brazil). In Latvia and the Russian Federation, they also constitute more than 20% of the student population and perform better than their peers. As Figure II.3.1 shows, however the gap between these two groups of students is particularly large in Qatar, Jordan, the United Arab Emirates and the Netherlands where, after accounting for socio-economic status, the difference is 19 score points or more. In Poland, Chinese Taipei, Tunisia, Malaysia, Greece, the United Kingdom and Japan, the difference is greater than 10 score points (Table II.3.1). In Qatar, Poland, the United States, Jordan, Denmark, the United Arab Emirates and Finland the population relevance is higher than 6%; that means that the proportion of low-performing students would decrease by more than 6% if the risk of low performance among students from single-parent households were as low as that of students from other types of families (population relevance) (Table II.3.1).

While the evidence that students from single-parent families perform relatively poorly is discouraging, the variation in performance differences across countries suggests that the relationship is not inevitable. Public policy, in general, and education policies, in particular, can narrow the gaps by making it easier for single parents to support and foster their children's education (Pong, Dronkers and Hampden-Thompson, 2004). School systems and individual schools can consider, for example, how and what kinds of parental engagement are to be encouraged among single parents who have limited time to devote to school activities. Education policies need to be examined in conjunction with other policies, such as those related to welfare and childcare.

PARENTS' JOB STATUS: TARGETING EDUCATION POLICIES THROUGH SOCIAL POLICY FOR THE UNEMPLOYED

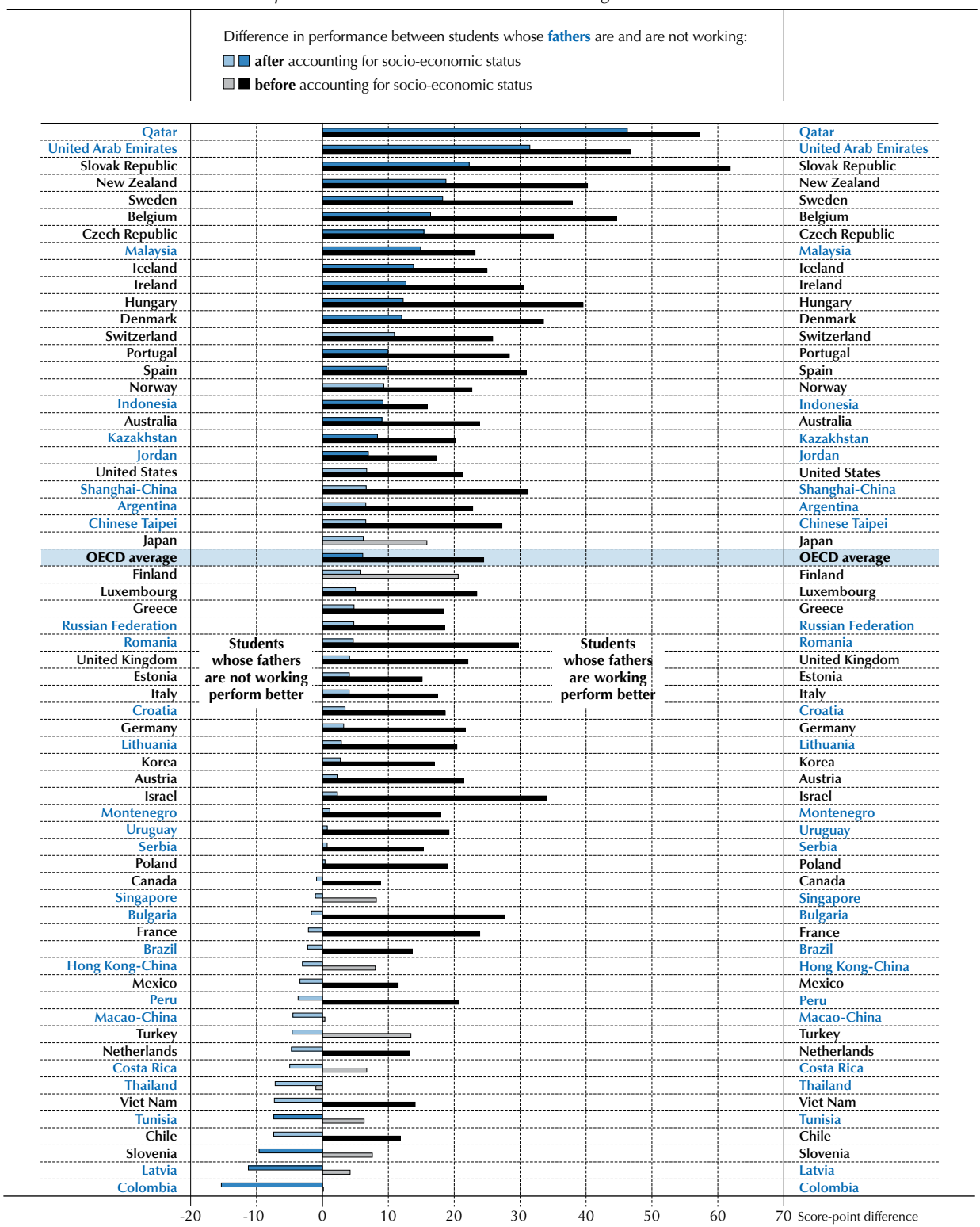
Education and other social policies play an important role in improving student learning at school. Differences across countries and economies in the impact of parents' unemployment on student performance suggest that some countries/economies manage to mitigate the potentially negative effects that unemployment has on education outcomes.

On average, 11% of 15-year-old students across OECD countries reported that their fathers' current job status is "other than working" (full or part time). They reported that their fathers are either currently unemployed (not working but looking for a job) or they hold another job status (home duties, retired, etc.). Some 28% of 15-year-olds reported similar job status for their mother. Parents' job status is closely linked to socio-economic status, with large gaps in performance between students whose parents are working and those whose parents are not. However, even after accounting for socio-economic status, students in OECD countries who reported that their fathers are not working score six points lower than those who reported that their fathers are working. Students who reported that their mothers are not working score eight points lower than those who reported that their mothers are working. The relative risk of low performance among students with one parent who isn't working, regardless of which parent it is, is more than 1.4 times greater than for other students. The population relevance is almost 5% when a student's father is not working and more than 9% when a student's mother is not working (Table II.3.2).

■ Figure II.3.2 [Part 1/2] ■

Difference in mathematics performance, by parents' work status

Differences in performance before and after accounting for socio-economic status



Note: Score-point differences that are statistically significant are marked in a darker tone.

Countries and economies are ranked in descending order of the score-point differences between students whose fathers/mothers are/are not working, after accounting for socio-economic status.

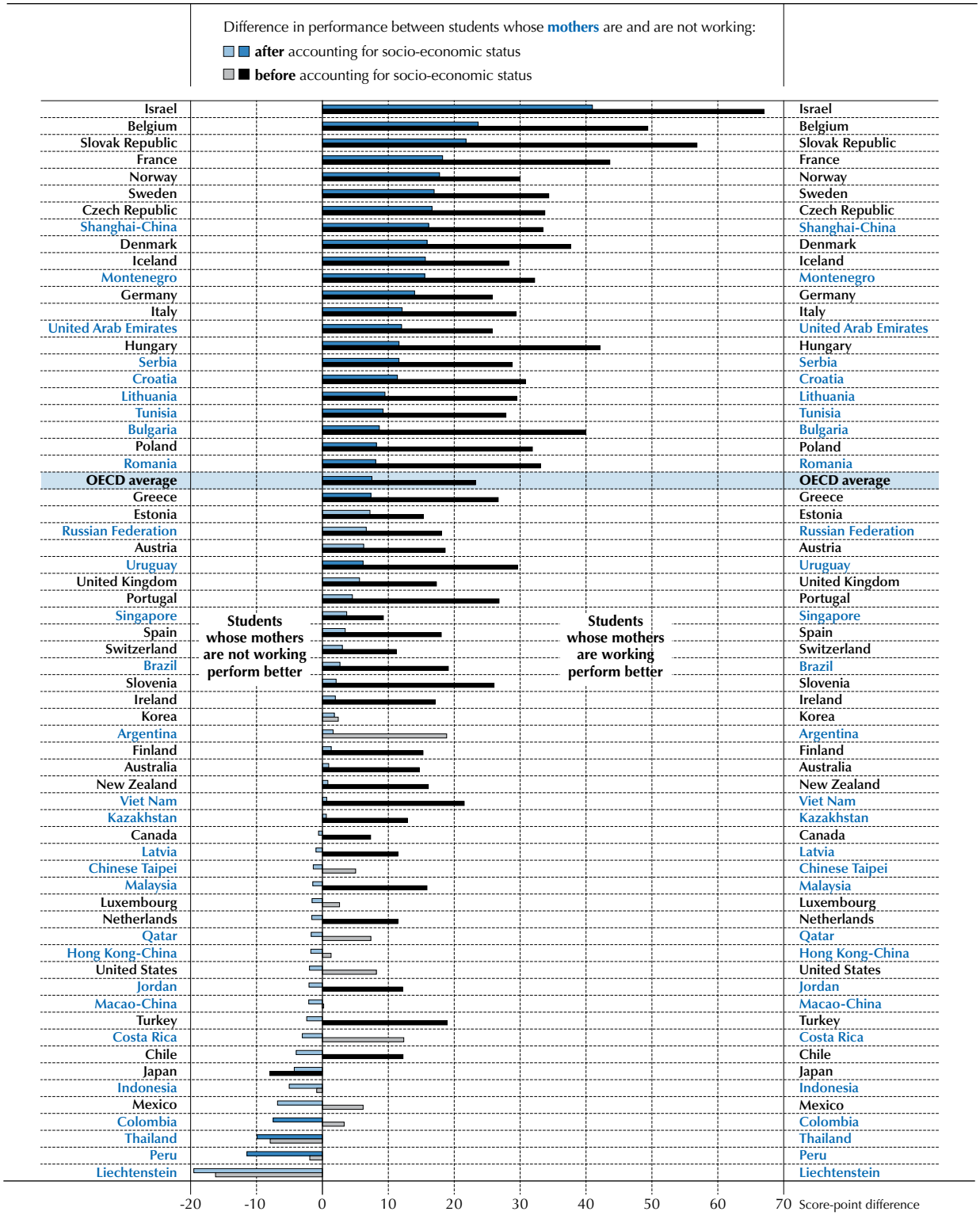
Source: OECD, PISA 2012 Database, Table II.3.2.

StatLink http://dx.doi.org/10.1787/888932964832

■ Figure II.3.2 [Part 2/2] ■

Difference in mathematics performance, by parents' work status

Differences in performance before and after accounting for socio-economic status



Note: Score-point differences that are statistically significant are marked in a darker tone.

Countries and economies are ranked in descending order of the score-point differences between students whose fathers/mothers are/are not working, after accounting for socio-economic status.

Source: OECD, PISA 2012 Database, Table II.3.2.

StatLink http://dx.doi.org/10.1787/888932964832

In the Slovak Republic, Sweden, Belgium, the Czech Republic, Iceland, Hungary and Denmark, parents' job status (of both the father and the mother) is associated with performance gaps ranging from 12 score points in Denmark when students' fathers are not working to 24 and 22 score points in Belgium and the Slovak Republic when students' mothers are not working, after accounting for socio-economic status (Figure II.3.2). In Norway, Germany, France, as well as in Croatia, Montenegro, Serbia and Shanghai-China large differences are observed only in relation to mothers' job status. Israel shows the largest performance gap related to mothers' job status (41 score points), but there is no gap related to fathers' job status. Population relevance is highest in the Slovak Republic, Romania, the United Arab Emirates, Hungary, where the proportion of low-performing students would shrink by more than 10% if the risk of low performance among students whose fathers are not working were as low as that of students whose fathers are working; and in Israel, Montenegro, the Slovak Republic, the United Arab Emirates, where the proportion of low-performing students would shrink by more than 20% if the risk of low performance among students whose mothers are not working were as low as that of students whose mothers are working (Table II.3.2).

SCHOOL LOCATION AND VARIATION IN PERFORMANCE ACROSS GEOGRAPHICAL AREAS

In some countries, student performance and the socio-economic or organisational profile of school systems vary considerably according to where schools are located. To capture variation in student performance among school systems and regions within countries, some countries have collected information from PISA at regional levels. Results from these regions are presented in Annex B2 of this volume. Box II.2.2 describes how much of the variation in performance takes place between regions for those countries that collected this information in PISA.

Another way to analyse variation in performance related to geographical characteristics is by school location. Countries vary widely in the densities, characteristics and distributions of populations across different types of communities (Table II.3.3a), and these differences need to be borne in mind when interpreting how students in these different communities perform. Large cities or densely populated areas tend to offer important advantages for schools, such as a richer cultural environment, a more attractive workplace for teachers, more school choice, and better job prospects that can help to motivate students. At the same time, they often pose greater socio-economic challenges. In addition, not all students can enjoy the advantages that large urban centres offer. They may, for example, come from socio-economically disadvantaged backgrounds, speak a different language at home than the one spoken at school, or have only one parent to turn to for support and assistance.

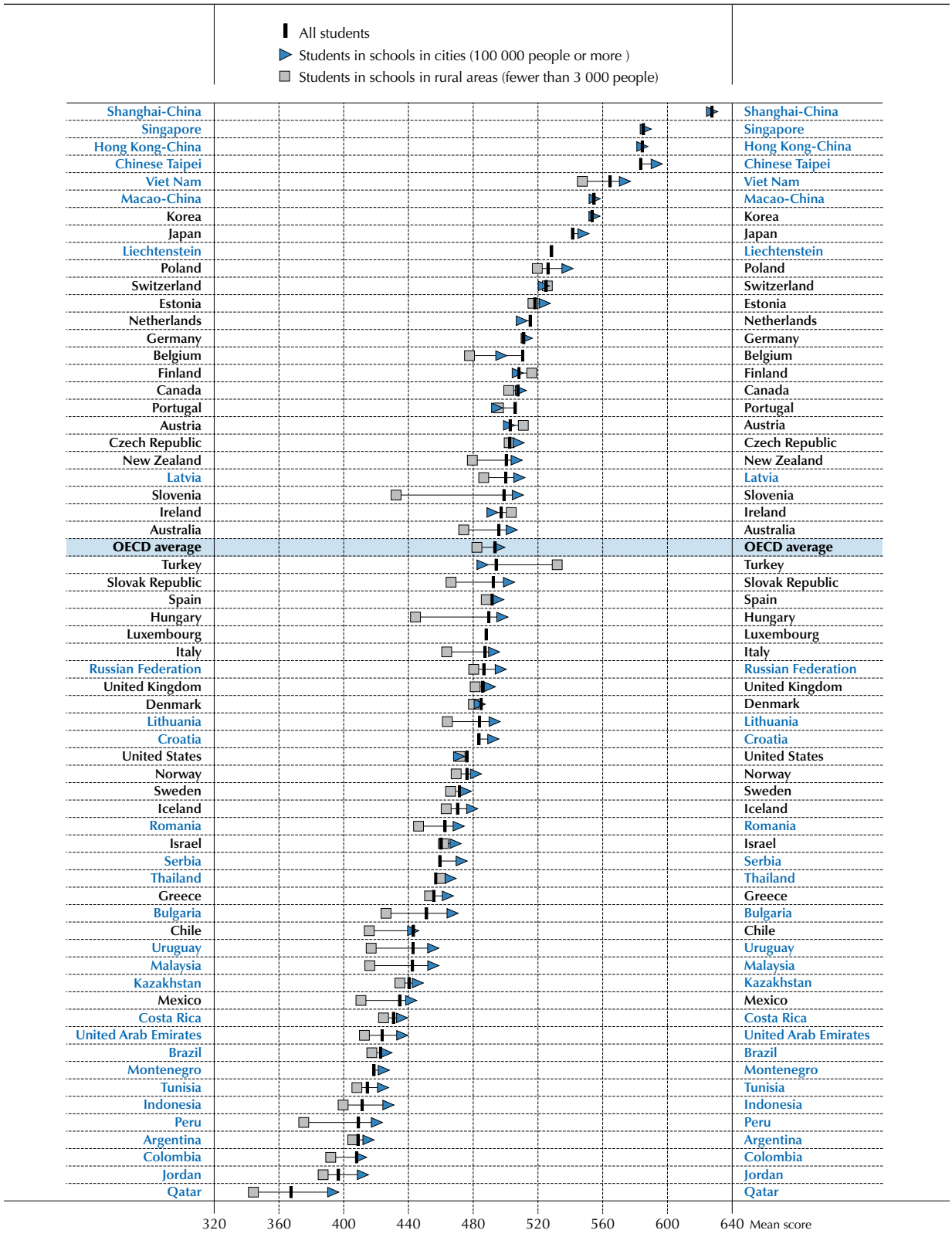
On average across OECD countries, students in schools located in towns (3 000 to about 100 000 inhabitants) outperform students in rural schools (fewer than 3 000 inhabitants) by 11 score points, after taking socio-economic status into account. Students in city schools (more than 100 000 inhabitants) outperform students in town schools by 4 score points, after taking socio-economic status into account (Table II.3.3a).

As Figure II.3.3 shows, after accounting for socio-economic status, students in all schools, regardless of their location, perform above the OECD average in Shanghai-China, Singapore, Hong Kong-China, Chinese Taipei, Viet Nam, Macao-China, Korea, Japan, Liechtenstein, Poland, Switzerland, Estonia, Germany, the Netherlands, Finland, Canada, Austria, and the Czech Republic. In all of these countries except Viet Nam, Japan and Poland, the difference in performance between students in rural schools and those in schools located in large cities is less than 10 score points (Table II.3.3a).

In general, students who attend schools in rural areas tend to score lower than students in schools in other types of locations. The difference is particularly large when performance is compared to that of students in city schools, although differences are observed between students in rural schools and those in schools located in towns. For example, in Slovenia students in city schools outperform those in rural schools by 74 score points, after accounting for differences in students' socio-economic status; but most of that performance gap (65 score points) is already apparent between students in towns and rural areas. Comparing students of similar socio-economic status, the largest performance gaps between students in rural and city schools are observed in Bulgaria, Hungary, Peru, Qatar and Slovenia (above 41 score points or the equivalent of one year of schooling). Students who attend urban schools are, on average, more socio-economically advantaged than those who attend schools in towns. In Belgium, Denmark, Ireland and Turkey, students in town schools perform better than students in city schools, before taking socio-economic status into account; but the differences are not marked. On average in the United States, students in urban schools underperform when compared to those in rural schools, even when they are more socio-economically advantaged (Table II.3.3a).

■ Figure II.3.3 ■

Mean mathematics performance, by school location, after accounting for socio-economic status



Countries and economies are ranked in descending order of the mean performance of all students, after accounting for socio-economic status.
Source: OECD, PISA 2012 Database, Tables II.2.1 and II.3.3a.
StatLink http://dx.doi.org/10.1787/888932964832

Figure II.3.3 also compares the performance of students in large cities across countries, after accounting for socio-economic status. Shanghai-China, Chinese Taipei, Singapore, Hong Kong-China, Viet Nam, Macao-China, Korea, and Japan show the highest mathematics performance – 548 or more score points, on average, among students in city schools, at least one year of schooling above the OECD average.

The difference in socio-economic status between rural and city schools varies considerably across countries. The differences are greatest in Mexico, Bulgaria, Peru, Chile, Colombia, Viet Nam, Thailand, Brazil, Portugal, Hungary, Tunisia and Costa Rica, where the difference is than larger than one unit on the *PISA index of economic, social and cultural status* (Table II.3.3a).

Differences in performance partly reflect differences in the socio-economic status of students who attend schools in urban and rural areas and/or other factors that may be associated with socio-economic disparities that have an impact on student performance. Comparing performance before and after accounting for socio-economic status shows the extent to which differences in student performance related to school location are associated with disparities in socio-economic status among school locations within countries. A large difference in performance both before and after accounting for socio-economic status indicates a significant difference in the socio-economic profiles of urban and rural areas. For example, across OECD countries on average, the performance gap between students who attend schools in rural areas and those who attend schools in towns is 20 score points, but the gap is reduced to 11 score points when students of similar socio-economic status are compared. The difference is greater between rural and city schools, where the estimated difference shrinks from 31 to 13 score points after accounting for socio-economic status (Table II.3.3a).

In PISA 2003 and among the OECD countries that participated in the PISA 2012 assessment, students in rural schools scored an average of 472 points in mathematics, students in schools located in towns scored 497 points, and students in schools located in cities scored 513 points. By 2012, the mathematics performance of students in rural and town schools had not changed, but that of students in city schools had declined by seven points. Across the countries and economies with comparable data for 2003 and 2012 and that show improvements in mathematics performance during this period, the observed improvement is spread across all types of communities. The only exception is Turkey, where much of the improvement observed in mathematics is concentrated among students in town schools who improved their mathematics scores by 59 points between PISA 2003 and PISA 2012, after taking socio-economic differences into account (Table II.3.3b).

EQUITY IN OUTCOMES FOR IMMIGRANT STUDENTS

Migration is not a new phenomenon; but with ageing populations and the looming threat of labour and skill shortages in many OECD countries, the issue has climbed to the top of the policy agenda. Both within and across countries, students with an immigrant background constitute a heterogeneous group. They differ in their country of origin, language and culture, and bring a wide range of skills, knowledge and motivations to their schools. Although a significant subgroup of migrants is highly skilled, that is not true for many others who are socio-economically disadvantaged. Such disadvantage, along with cultural and ethnic differences, can create divisions and inequities between the host society and newcomers. These problems go well beyond how migration flows can be channelled and managed; they require consideration of how immigrants can be integrated into host societies in ways that are acceptable to both the immigrants and the populations in the receiving countries.

Integrating immigrant students into schools is a challenge for most countries; yet a country's success in integrating immigrants' children into society is a key indication of the efficacy of social policy in general and education policy in particular. The variation in performance differences between immigrant and non-immigrant students across countries, even after accounting for socio-economic status, suggests that policy has an important role to play in eliminating those differences. But given the diversity of immigrant student populations across countries, designing education policies to address those students' specific needs – particularly that of language instruction – is not an easy task.

Education policy alone is unlikely to address all the issues related to differences in performance between immigrant and non-immigrant students. For example, immigrant students' performance in PISA is more strongly (and negatively) associated with the concentration of socio-economic disadvantage in schools than with the concentration of immigrants *per se* or the concentration of students who speak a different language at home than the one in which they are taught at school. Reducing the concentration of disadvantage in schools may require changes in other social policy, such as housing or welfare, to encourage a more balanced social mix in schools.

The impact of other social policies on the profile of immigrant students

When interpreting performance gaps between non-immigrants students and those with an immigrant background, it is important to consider the differences in the socio-economic, education and linguistic backgrounds of countries' immigrant populations. The composition of immigrant populations is shaped by immigration policies and practices, and the criteria used to decide who will be admitted into a country vary considerably across countries. While some countries receive relatively large numbers of immigrants each year, often with relatively little selectivity, other countries have much smaller or more selective migrant inflows. In addition, the extent to which the social, educational and occupational status of potential immigrants is taken into account in immigration and naturalisation decisions differs across countries. The composition of past migration flows tends to persist because established networks facilitate migration from the same countries of origin. In addition, some migration flows may not be easily restricted because of international treaties (i.e. free circulation agreements and the Convention relating to the Status of Refugees) or because of generally recognised human rights (i.e. the right of immigrants or citizens to live with their families). As a result, immigrant populations are more skilled or socio-economically advantaged in some countries than in others. Among OECD countries:

- Australia, Canada and New Zealand are countries with immigration policies that favour the better qualified.
- The United States has a migration system that tends to favour family migration, both of the immediate family, as in other countries, and also of parents, siblings and adult children.
- In the 1960s and 1970s, Austria, Denmark, Germany, Luxembourg, Norway, Sweden and Switzerland recruited temporary immigrant workers, many of whom then settled permanently. Immigration increased again over the past ten years, except in Germany. In Austria, Germany and Switzerland, and to a lesser extent in Sweden, immigrants are less likely to have an upper secondary education and more likely to have a tertiary degree. As a result, migrants tend to be of two types – the low-skilled and the highly qualified.
- France and the United Kingdom draw many immigrants from former colonies who have often already mastered the language of the host country.
- Finland, Greece, Ireland, Italy, Portugal and Spain, among other countries, experienced a sharp growth in migration inflows in the early 2000s.

High levels of performance across a diverse student population

PISA distinguishes between three types of student immigrant status: non-immigrant students (those without an immigrant background, sometimes referred to as native students, who were born in the country where they were assessed by PISA or who had at least one parent born in that country);[3] second-generation students (who were born in the country of assessment but whose parents are foreign-born); and first-generation students (foreign-born students whose parents are also foreign-born).[4] This chapter focuses first on immigrant students as a whole (first- and second-generation immigrant students) and then analyses equity in outcomes for first- and second-generation students separately.

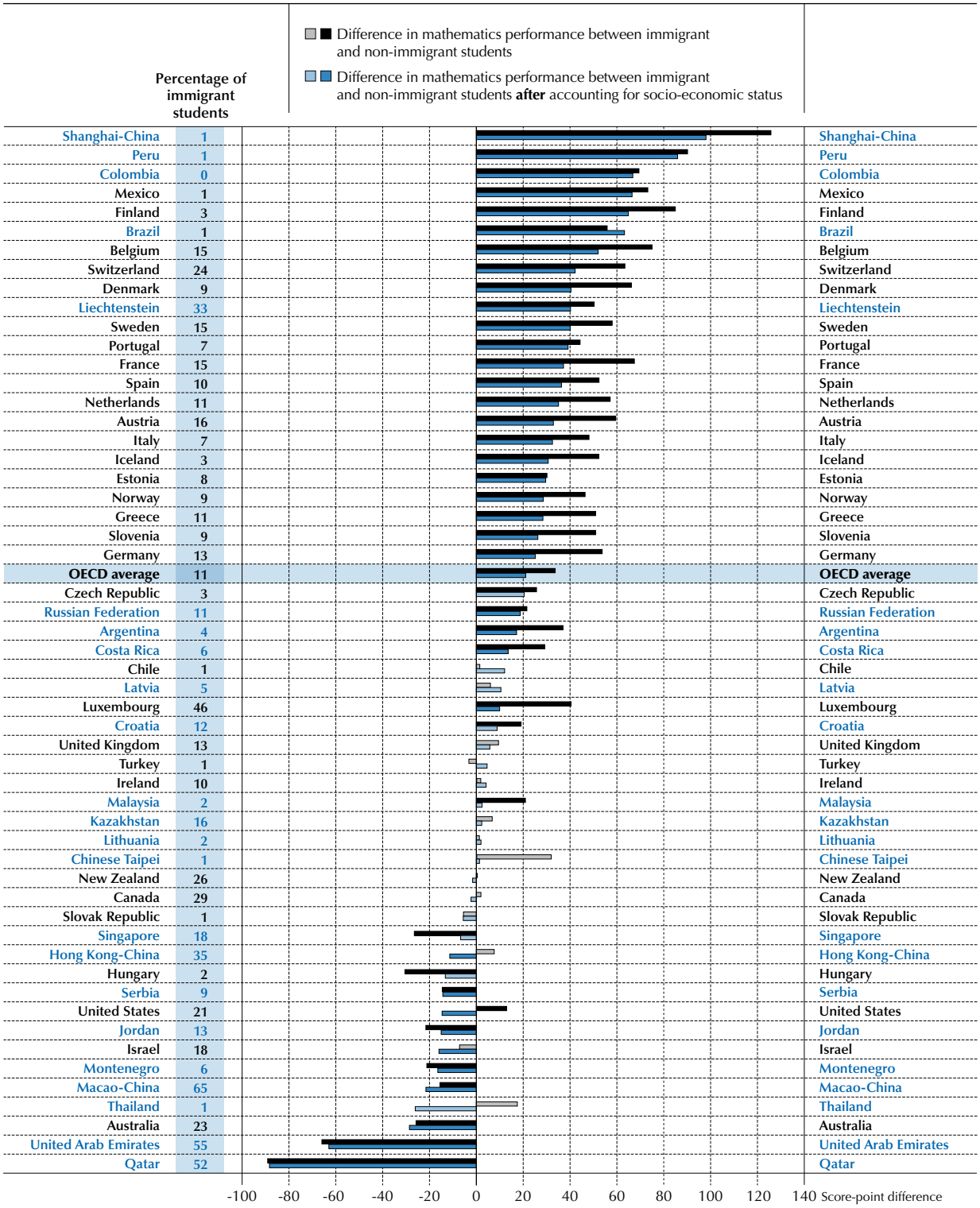
Across OECD countries, 11% of the students assessed by PISA 2012 have an immigrant background. These immigrant students tend to be socio-economically disadvantaged in comparison to non-immigrant students. They also score an average of 34 points lower in the PISA mathematics assessment than non-immigrant students, and an average of 21 points lower after accounting for socio-economic differences. In fact, immigrant students are 1.70 times more likely than non-immigrant students to perform in the bottom quarter of the performance distribution. If education policy reduced their vulnerability to poor performance to the levels observed among non-immigrant students, the proportion of low-performing students in the entire population would shrink by 7% (Table II.3.4a).

In Canada, New Zealand and Australia the size of the immigrant student population is well above the OECD average (29%, 26% and 23%), and both immigrant and non-immigrant students perform, on average, well above the OECD mean (more than 500 score points). In Australia immigrant students outperform non-immigrants by 29 score points, even after accounting for socio-economic differences. In Canada and New Zealand, both groups perform equally well. The same is true in Ireland, but the proportion of immigrant students (10%) in the country is closer to the OECD average (11%). Among partner countries and economies, Macao-China, Hong Kong-China, Liechtenstein and Singapore also have large proportions of immigrant students and enjoy high levels of average performance among immigrant and non-immigrant students. In Macao-China and Hong Kong-China, immigrant students perform better than non-immigrant students after accounting for socio-economic status; in Singapore the two groups perform equally well; and in Liechtenstein, immigrant students score 40 points lower in mathematics, on average, than non-immigrant students (Table II.3.4a).

■ Figure II.3.4 ■

Difference in mathematics performance between immigrant and non-immigrant students

Before and after accounting for socio-economic status



Note: Score-point differences that are statistically significant are marked in a darker tone.

Countries and economies are ranked in descending order of the score-point difference between immigrant and non-immigrant students, after accounting for socio-economic status.

Source: OECD, PISA 2012 Database, Table II.3.4a.

StatLink http://dx.doi.org/10.1787/888932964832

Among OECD countries, immigrant and non-immigrant students perform equally well in Canada, New Zealand, Israel, the United Kingdom and Ireland (also in the Slovak Republic, Turkey and Chile, but the size of the immigrant student populations in these countries is less than 1%). In Belgium, France, Switzerland, Austria, Sweden, Spain, Luxembourg, Norway, the Netherlands and Denmark, immigrant students account for 9% or more of the student populations, and they are between 2.0 and 2.4 times more likely than non-immigrant students to score in the bottom quarter of the performance distribution. The same pattern is seen in Colombia, Peru, Finland and Mexico, but in both cases the proportion of students who are immigrants is relatively small – 1% and 3%, respectively. Among partner economies, this pattern is observed in Shanghai-China and Brazil, but the proportion of students who are immigrants is negligible. In Luxembourg, if the risk of low performance among immigrant students were the same as that among non-immigrant students, the proportion of low-performing students in the country would shrink by 31%; in Switzerland, it would shrink by 24%. The proportion of low performers in Belgium, France, Austria, Sweden, Denmark and Germany would also be significantly reduced under that scenario. Only in Liechtenstein, among partner countries and economies, is the population relevance for immigrant students similarly high (Table II.3.4a).

Higher levels of performance among an increasingly diverse student population

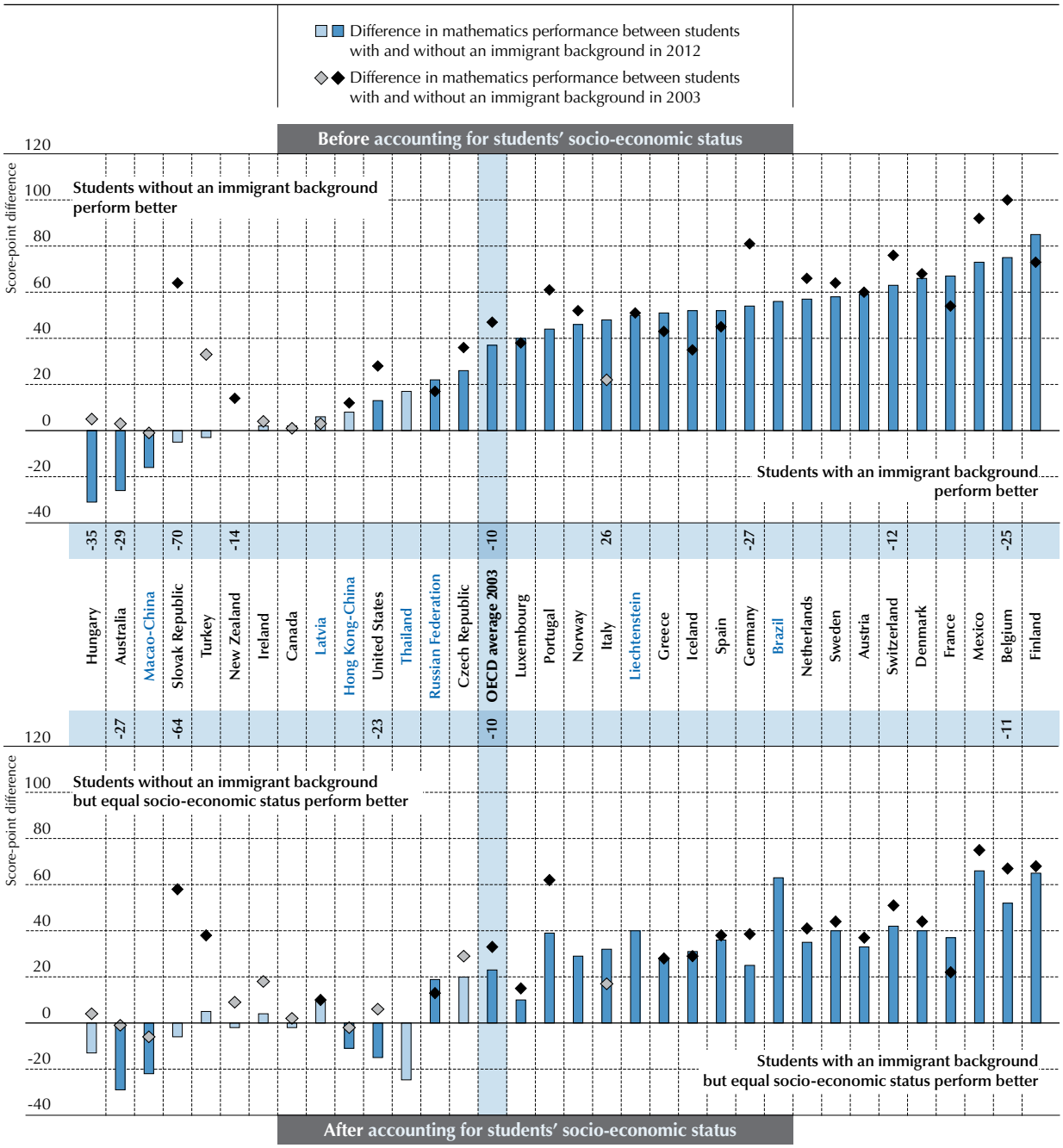
In PISA 2003, 9% of students across OECD countries had an immigrant background. They scored 47 points lower in mathematics than their non-immigrant peers; when students with similar socio-economic status were compared, the performance difference was smaller – 33 points – but still present. By 2012, the share of immigrant students across OECD countries with comparable data for 2003 and 2012 increased to 11%, and the difference in mathematics performance in favour of non-immigrant students decreased by around 10 score points. The narrowing of the immigrant student performance gap in mathematics is observed (at 10 score points) even after comparing immigrant and non-immigrant students of similar socio-economic background. Furthermore, the socio-economic status profile of immigrant students in 2012 was slightly more advantaged than that of immigrant students in 2003 (the socio-economic status of non-immigrant students also rose during the period). These results point to the fact that in 2012, and on average across OECD countries, immigrant students face less socio-economic and performance disadvantage when compared to immigrant students in 2003 Despite these changes and the improvements, however, in 2012, immigrant students still faced a significant disadvantage in mathematics performance compared with their non-immigrant peers, albeit to a lesser degree than they did in 2003 (Figure II.3.5).

Among those countries and economies where at least 5% of the student population were immigrants in both 2003 and 2012, in Belgium, Germany, New Zealand, Switzerland and the United States the difference in mathematics performance between students with an immigrant background and those without narrowed between 2003 and 2012 (Figure II.3.5). In Belgium, Germany and Switzerland, the narrowing is the result of greater performance improvements among students with an immigrant background than among students without an immigrant background. In Germany, the performance disadvantage among immigrant students shrank: in 2003, non-immigrant students outscored students with an immigrant background by 81 points in mathematics; by 2012 this difference had decreased to 54 score points (Box II.3.2 outlines Germany's improvement in PISA and their recent policy trajectory). In fact, in Belgium and Switzerland, the reduction is still observed even when comparing students with similar socio-economic status. In the United States, among students with similar socio-economic status, the difference in performance between students with an immigrant and background and those without shrank by 23 points in the period. In Australia, there was no difference in mathematics performance between immigrant and non-immigrant students in 2003; in 2012, immigrant students outperformed non-immigrant students. Only in France and Italy did the performance disadvantage of immigrant students increase between 2003 and 2012. While in Italy this increase is largely explained by the drop in the socio-economic status of immigrant students, in France the increase in the performance disadvantage is observed after comparing students with a similar socio-economic status (Figure II.3.5).

A rapid increase in the proportion of students with an immigrant background – especially in countries and economies that had predominantly non-immigrant populations – poses challenges to education systems. Students with an immigrant background may have different educational needs, particularly if their native language is different from that of the host country; but they also may have different strengths and talents, and school systems needs to be aware of both these needs and these strengths if immigrant students are to flourish. Between 2003 and 2012, the share of students with an immigrant background grew by five percentage points or more in Canada, Ireland, Italy, Spain and the United States, and grew by more than ten percentage points in Luxembourg and Liechtenstein. In 2003, the school systems in Ireland, Italy and Spain were predominantly composed of non-immigrant students, but by 2012 the share of immigrant students nearly tripled (Figure II.3.6). In Ireland, the increase in the share of immigrant students is mostly unrelated to changes in their academic disadvantage (Figure II.3.5).

■ Figure II.3.5 ■

Change between 2003 and 2012 in immigrant students' mathematics performance



Notes: Differences in mathematics performance between students without and with an immigrant background in 2003 and 2012 that are statistically significant are marked in a darker tone.

Only countries and economies with comparable data from PISA 2003 and PISA 2012 are shown.

The change in the score-point difference in mathematics between students without and with an immigrant background before accounting for students' socio-economic status between 2012 and 2003 is shown above the country/economy name, and the difference after accounting for students' socio-economic status is shown below the country/economy name. Only statistically significant differences are shown.

OECD average 2003 compares only OECD countries with comparable mathematics scores since 2003.

For comparability over time, PISA 2003 values on the *PISA index of economic, social and cultural status* have been rescaled to the PISA 2012 scale of the index. PISA 2003 results reported in this table may thus differ from those presented in *Learning for Tomorrow's World: First Results from PISA 2003* (OECD, 2004) (see Annex A5 for more details).

Countries and economies are ranked in ascending order of the score-point difference between students with and without an immigrant background before accounting for socio-economic status in 2012.

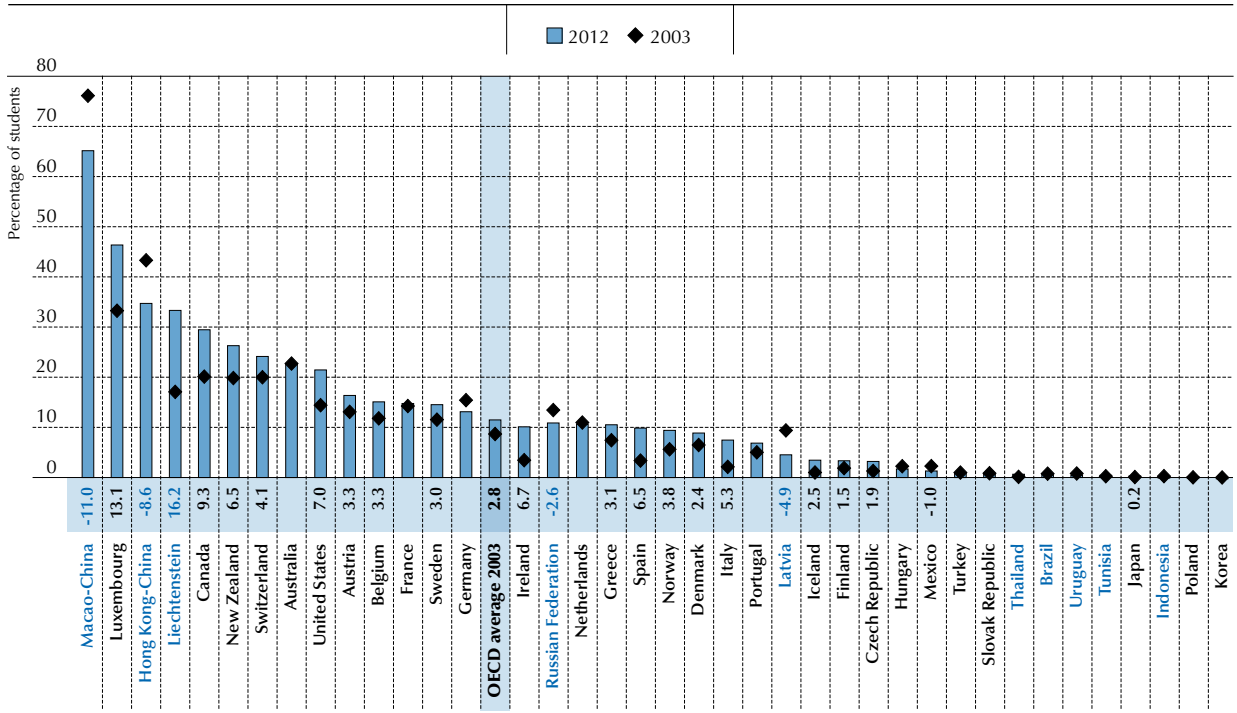
Source: OECD, PISA 2012 Database, Table II.3.4b.

StatLink http://dx.doi.org/10.1787/888932964832

■ Figure II.3.6 ■

Change between 2003 and 2012 in the share of students with an immigrant background

Percentage of students with an immigrant background



Notes: Only countries and economies with comparable data from PISA 2003 and PISA 2012 are shown.
The percentage-point difference between 2003 and 2012 in the share of students with an immigrant background is shown above the country/economy name. Only statistically significant differences are shown.
OECD 2003 average compares only OECD countries with comparable data since PISA 2003.
Countries and economies are ranked in descending order of the percentage of students with an immigrant background in 2012.
Source: OECD, PISA 2012 Database, Table II.3.4b.
StatLink http://dx.doi.org/10.1787/888932964832

Box II.3.2. **Improving in PISA: Germany**

PISA 2000 results placed German students close to the OECD average, highlighting that more than one in five students performed below proficiency Level 2 in reading and that social equity levels in education were among the worst among all OECD countries (OECD, 2010a). Since Germany is a federal country where each *Land* is responsible for its own education system, broad education reform could only occur as the result of a concerted effort among the individual *Länder*. The "PISA shock" that followed publication of the PISA 2000 results was a jolt that spurred reform measures to promote higher quality and greater equity in the school system.

Over the past decade Germany has consistently improved its reading and mathematics performance while improving overall equity in education, as well. Average mathematics scores have improved at an average rate of 1.4 score points per year, from 503 score points in 2003 to 514 points in 2012, with the result that Germany moved from OECD average performance in mathematics in 2003 to significantly above the OECD average in 2012. Performance in reading improved by 1.8 score points per year, from 484 score points in 2000 to 508 points in 2012. Improvements in both subjects are largely the result of better performance among low-achieving and disadvantaged students. In PISA 2012, poor-performing students (the 10% of students with the lowest scores) scored over 20 points higher in mathematics than their counterparts in 2003 did. Similar improvements were observed in reading: in 2012, poor-performing students scored nearly 50 points higher than their counterparts did in 2000.

Because low-achieving students are more likely to come from disadvantaged backgrounds, the observed improvement in mathematics, driven by low-achieving students, also reflects greater equity in the education system.

…

While disadvantaged students (those in the bottom quarter of the *PISA index of economic, social and cultural status*) improved their mathematics performance by 20 score points, no such improvement was observed among students in the second, third or top quarter of the socio-economic scale. As a result, students' socio-economic status is less predictive of their mathematics performance in PISA 2012 than it was in PISA 2003. In 2003, 24% of the variation in mathematics performance was explained by students' socio-economic status; by 2012, 17% of the variation was so explained. During that period, Germany moved from being a country with below-OECD-average equity in education to one with an average degree of equity. Improvements in equity are also evident among students with an immigrant background: in 2003 immigrant students scored an average of 81 points below non-immigrant students in mathematics; by 2012, this disadvantage had narrowed to 53 score points.

Reforms prompted by PISA results

Following the PISA 2000 results, the Standing Conference of Ministers of Education and Cultural Affairs (KMK) defined seven areas of action to improve the quality of the education system. Although these and other education-related recommendations from the KMK that followed were non-binding, most programmes were adopted by most states. To promote the achievement, particularly among disadvantaged children and those with an immigrant background, as well as to promote education opportunities through both in- and out-of-school activities for all students, the national government began to subsidise all-day schools (*Ganzagsschule*). In 2002, one in ten schools was an all-day school; by 2012, more than half of all schools were. Although attendance in all-day programmes is only compulsory in only some schools so far, schools remain open all day, offering lunch and extracurricular activities, supplementary education and instruction in the afternoon for those students who need or want it. One in three students takes part in full-day schools (KMK, 2013).

Another key recommendation from the KMK was to develop binding standards and outcome-oriented evaluations. Following the KMK's recommendation, education standards were introduced in 2003 and 2004 for Grades 4, 9 and 10 in German and mathematics. Standards for foreign language instruction (English/French), as well as biology, chemistry and physics were also introduced for Grades 9 and 10. Since 2004, each state's curriculum is based on these standards. In addition, assessments were created to measure progress against the standards at both the state and national levels. They are conducted across the 16 federal states, monitoring the performance of individual schools and the school system as a whole. Evaluations at Grades 3 and 8 are conducted in every school. Reflecting these changes, students who took part in PISA 2012 were 22 percentage points more likely to attend schools where assessments are used to compare the school against national or regional benchmarks, and 13 percentage points more likely to attend schools where assessments are used to monitor school progress from year to year. Also, students are more likely to attend schools where student assessments are used to evaluate whether students/classes have reached the expected level of achievement and to identify aspects of the curriculum that could be improved. The national results from these assessments are compiled in the *Bildung in Deutschland*, a biennial report on the state of education at all levels.

In 2001, the KMK signalled the need to improve teacher professionalism, particularly regarding skills in diagnosing students and in teaching methods. Changes in these areas are reflected in students' and principals' reports in PISA. Students in 2012 were almost 20 percentage points more likely than students in 2003 were to attend schools where teacher practice is monitored through peer reviews, and 10 percentage points more likely to attend schools where teacher practice is monitored through student achievement. In the past decade, reforms have aimed to strengthen pedagogical training by focusing on new teachers' pedagogical and psychological competencies. In-service teacher training is promoted, with the objective of having all teachers participate in the near future.

In most states, the school system is structured around four years of primary school followed by a three-track school system (*Hauptschule, Realschule* and *Gymnasium*) with specific education pathways related to each track. While the *Hauptschule* leads to a vocational and terminal secondary qualification, the *Realschule* is intended for vocational- and academic-track students who want to continue on to vocational/technical or academic tertiary programmes. Many states have begun merging the two vocational tracks into one, motivated by changes in labour market demands that have increased the demand for skills, and demographic changes that have reduced the population of the catchment areas of rural schools.

Concurrent with these reform efforts, social and demographic changes have shifted the profile of Germany's student population. In PISA 2012, socio-economically disadvantaged students and students with an immigrant background had higher levels of the *PISA index of social, economic and cultural status* than disadvantaged

...

students and students with an immigrant background in 2003, and the overall proportion of students that are first- or second-generation immigrants decreased. Also, in 2003, a German student in the bottom quarter of the socio-economic distribution was situated at -1.34 on the ESCS, but a student in the bottom quarter of that index in 2012 was situated at -0.99 (no such change was observed among students in the top quarter of the socio-economic distribution). Similarly, the socio-economic status of students with an immigrant background also improved between PISA 2003 and PISA 2012 (Tables II.2.3b and II.3.4b).

Essentially, these changes mean that the differences in socio-economic status between disadvantaged and advantaged students and between students with an immigrant background and those without have narrowed between PISA 2003 and PISA 2012. These results suggest that Germany's observed improvement in PISA over time may be due to the shifting social and demographic profile of students in parallel to the contribution of any particular policy or programme (Tables I.2.4, I.4.4 and I.5.4).

Sources:

KMK (Sekretariat der Ständigen Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland) (2013), *Allgemein bildende Schulen in Ganztagsform in den Ländern in der Bundesrepublik Deutschland, Statistik 2007 bis 2011*, Bonn.

OECD (2011), *Lessons from PISA for the United States*, Strong Performers and Successful Reformers in Education, OECD Publishing. *http://dx.doi.org/10.1787/9789264096660-en*

OECD (2010a), *PISA 2009 Results: Learning Trends: Changes in Student Performance Since 2000 (Volume V)*, PISA, OECD Publishing. *http://dx.doi.org/10.1787/9789264091580-en*

Box II.3.3. **Language minorities among non-immigrant students**

Only 4% of 15-year-old students across OECD countries are non-immigrants who do not speak the language of assessment at home. But this proportion varies considerably among countries: in Luxembourg they represent 53% of students; in Belgium and Spain, 14% of students; in Italy, 10%; in the Slovak Republic, 7%; in Turkey, 6%; and in Estonia, Switzerland and Canada, between 3% and 4%. In all countries but Canada, these students are socio-economically disadvantaged when compared with other non-immigrant students. The difference in socio-economic status is widest in the Slovak Republic and Turkey and it is relatively narrow in Switzerland, Estonia and Luxembourg. The difference in mathematics performance between non-immigrant students who do not speak the language of assessment at home and those who do is particularly pronounced in the Slovak Republic where, even after accounting for socio-economic status, 50 score points separate the two groups. In Italy and Switzerland, around 23 score points separate the two groups, and in Estonia, the difference is 14 score points. In Canada and Luxembourg, all non-immigrant students perform at the same level, regardless of the language they speak at home; in Belgium and Spain, they do so after accounting for socio-economic status (Table II.3.8).

In 15 partner countries and economies, non-immigrant students who do not speak the language of assessment at home are a sizable proportion of the student population, and the differences across countries and economies are even greater. These students constitute more than 40% of the student population in Indonesia, Thailand, Malaysia, and Singapore, between 10% and 17% in Chinese Taipei, Qatar and Bulgaria, and between 3% and 10% in Kazakhstan, Lithuania, Latvia, the United Arab Emirates, the Russian Federation, Macao-China, Peru, Jordan and Serbia. In Bulgaria, Peru, Singapore, Thailand, Indonesia, Chinese Taipei, Latvia, the Russian Federation, Serbia, Lithuania and Hong Kong-China these students are socio-economically disadvantaged, compared with other non-immigrant students. In the United Arab Emirates, Qatar, Hong Kong-China, Macao-China, Jordan, Malaysia, and Kazakhstan, they are advantaged compared with other non-immigrant students. Performance gaps in favour of those non-immigrant students who do not speak the language of assessment at home are particularly marked (15 or more score points) in Qatar, Malaysia and the United Arab Emirates. In Singapore, Chinese Taipei, Lithuania, Bulgaria, Peru and Liechtenstein non-immigrant students who speak the language of assessment at home outperform non-immigrant students who do not speak the assessment language at home by more than 10 score points (Table II.3.5).

Language minorities among immigrant students

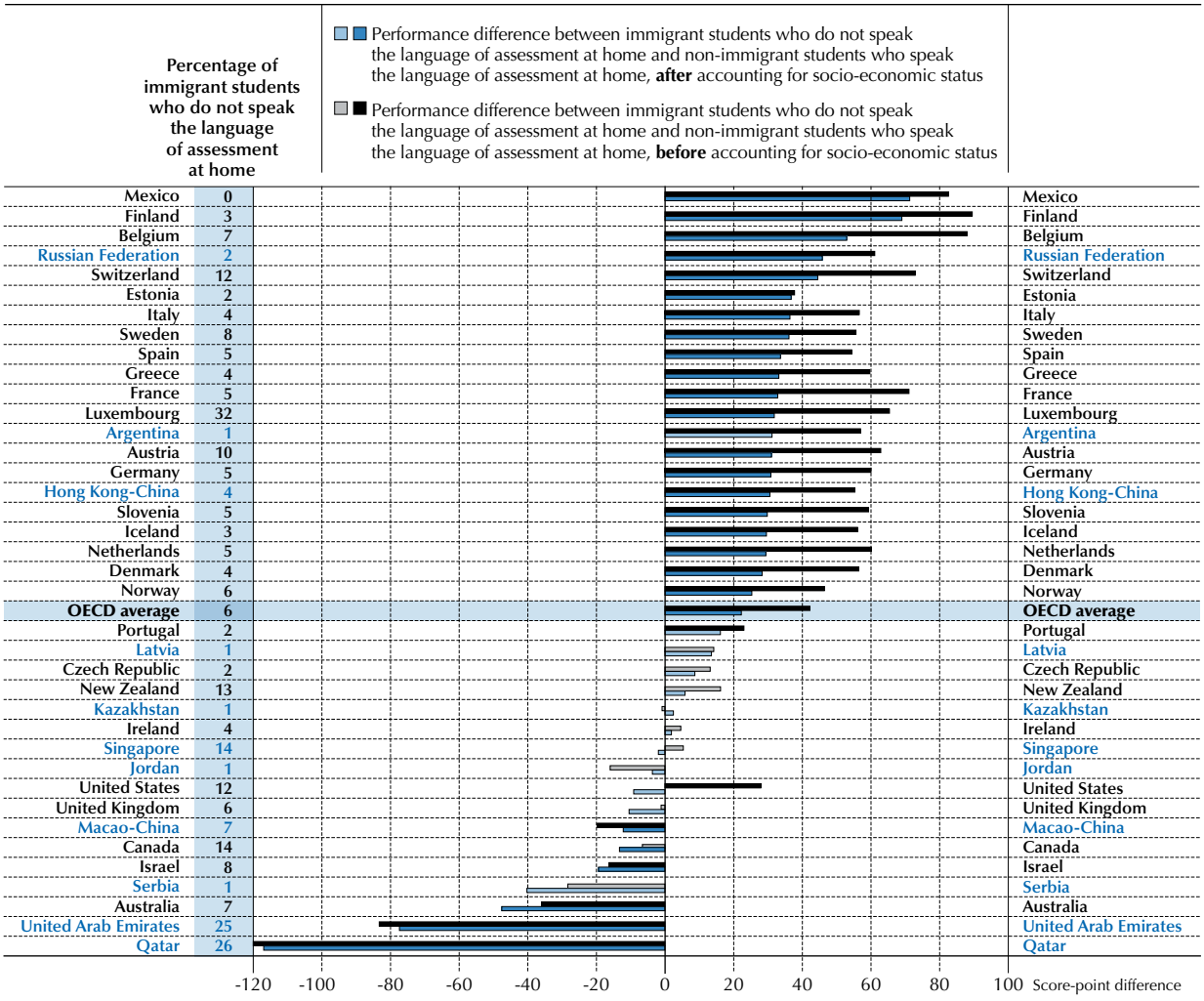
The most obvious challenge for many students with immigrant parents is adapting to a new language and a new learning environment. The most vulnerable immigrant students are those who arrive at a late age, unable to speak the language of the host country, and from a country where education standards are not as high as those in the host country. Such students would benefit from policies and programmes that take these multiple disadvantages into account. Not all immigrant students face the same challenges; some may be in host countries whose languages and cultures are similar to those in their countries of origin. Ignoring such specific problems may result in the marginalisation of immigrant students at a critical age and with poor prospects for integration (OECD, 2012b).

On average across OECD countries, 6% of 15-year-olds are immigrant students who speak a language at home that is different from the language of assessment. About a third of students in Luxembourg fall into this category as do about 12% of students in Canada, New Zealand, Switzerland and the United States. In Australia, Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Israel, Italy, the Netherlands, Norway, Slovenia, Spain, Sweden and the United Kingdom more than 3% of students are immigrant students who speak a language at home that is different from the language of assessment.

■ Figure II.3.7 ■

Difference in mathematics performance, by immigrant and language background

Before and after accounting for socio-economic status



Note: Score-point differences that are statistically significant are marked in a darker tone.

Countries and economies are ranked in descending order of the score-point difference between immigrant students who do not speak the language of assessment at home and non-immigrant students who do.

Source: OECD, PISA 2012 Database, Table II.3.5.

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Among partner countries and economies, about 25% of students in Qatar and the United Arab Emirates fall into this category, as do 14% in Singapore, 11% in Liechtenstein, 7% in Macao-China and 4% in Hong Kong-China. In some countries, non-immigrant students who do not speak the language of assessment at home are also a significant proportion of the overall population. Box II.3.3 describes PISA results for this group of students (Table II.3.5).

In Austria, Belgium, France, New Zealand, Sweden and Switzerland the attributable risk or population relevance (a measure of the extent of the population affected by a particular characteristic that puts students at risk of low performance) of immigrant students who do not speak the language of assessment at home was 6% or more; in Luxembourg, it reached 29%. In these countries, the risk of being in bottom quarter of the performance distribution is more than double among immigrant students than among any other students. Among these countries, in Austria, Belgium, Luxembourg, New Zealand and Sweden, the difference in performance between non-immigrant students who speak the language of assessment at home and non-immigrant students who do not is between 30 and 53 score points, after accounting for socio-economic status; in Switzerland, 45 score points separate these two groups; and in Belgium, the difference is 53 score points (Table II.3.5 and Figure II.3.7).

Not understanding the language of the country of residence upon arrival is a disadvantage; but so is insufficient exposure to that language outside of school. Policies aimed at supporting immigrant students who do not speak the language of assessment at home should focus on both school and home. An often-discussed possibility is to provide language lessons to parents and encourage them to become engaged in their child's education, if they aren't already. That can help students to improve their language skills, which, in turn, will improve their performance in school and make integration into the host society easier (for a list of policies implemented in different OECD countries in this area, see the OECD review of migrant education [OECD, 2010b]).

First- and second-generation students

The term "immigrant students" used here includes students whose two parents were born abroad but who, themselves, were born in the country of assessment (second generation) or in another country (first generation). Comparing the performance of first- and second-generation students can provide information about the characteristics of different immigrant cohorts, while comparing these two groups with non-immigrant students can provide an idea of the extent to which school systems manage to integrate immigrant students into schools and the role played by immigration policy.

Some 5% of students across OECD countries, on average, are first-generation immigrant students; 6% are second-generation. In general, there are no significant differences in socio-economic status between the two groups. By contrast, second-generation students score 10 points higher, on average, on the PISA mathematics assessment than first-generation students. Across OECD countries, an average of more than 45 score points separates non-immigrant and first-generation students, while the performance difference between non-immigrant and second-generation students is 31 score points. Accounting for socio-economic status, however, narrows the gaps to 29 and 18 score points, respectively, as immigrant students are generally disadvantaged in comparison to non-immigrant students. On average across OECD countries, if the risk of low performance among first- and second-generation students were as low as that among non-immigrant students, the proportion of low-performing students in the country would decrease by about 4% (Table II.3.6a).

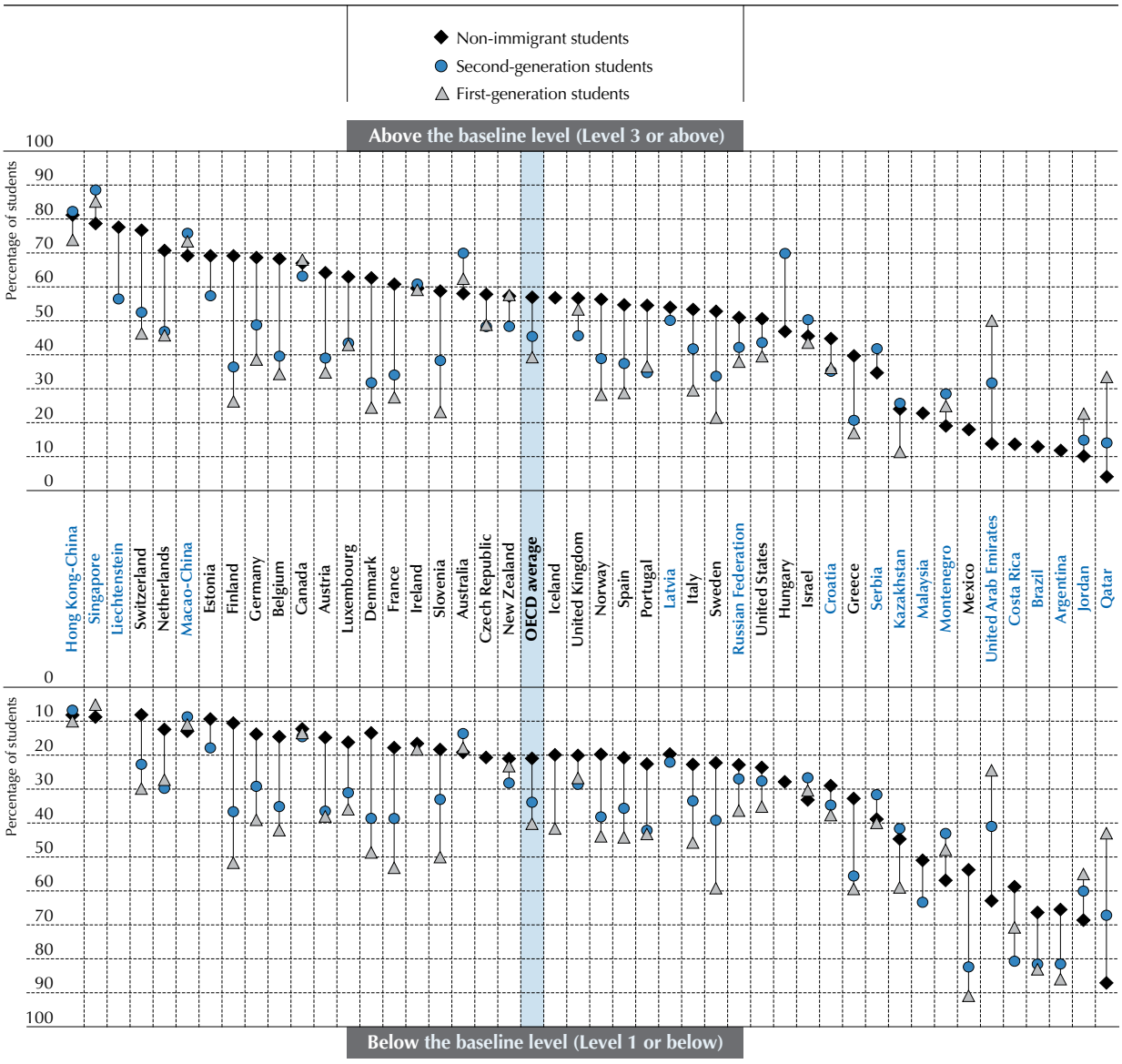
In Australia, Canada, and Ireland, first-generation, second-generation and non-immigrant students perform, on average, at or above the OECD average in mathematics. Except for second-generation students in Ireland, each of these three groups represents at least 8% of the total student population in these countries. In New Zealand, first-generation students perform around or above average, but second-generation students do not. In Hungary, first-generation students perform above the OECD average, but they represent only around 1% of the overall student population. As Figure II.3.8 shows, these differences translate into higher or lower proportions of first- and second-generation students achieving above Level 3 in the mathematics performance compared with non-immigrant students.

The "late-arrival penalty"

In general, the older an immigrant student is when he or she arrives in the host country, the lower his or her score on the PISA mathematics assessment (Table II.3.8). This "late-arrival penalty" appears to be associated with a lack of mastery of the assessment language (OECD, 2012b). More generally, any difficulty in adapting to a different culture and school system, or cross-national differences in education standards, may also contribute to poorer performance among immigrant students.

■ Figure II.3.8 ■

Percentage of students with mathematics performance below and above the baseline level (Level 2), by immigrant background



Note: This figure shows only countries/economies where data are available for at least one category of immigrant students (first- or second-generation).
Countries and economies are ranked in descending order of the percentage of non-immigrant students scoring at Level 3 or above.
Source: OECD, PISA 2012 Database, Table II.3.7.
StatLink http://dx.doi.org/10.1787/888932964832

First-generation students who arrived when they were of lower secondary-school age from less-developed countries where the home language was different from language of assessment in the host country constitute a particularly vulnerable group. These students have to both quickly acquire knowledge of the language of assessment and try to catch up to the performance of their peers in the host country, all while coping with the problems of adjusting to a new school and social environment.

In some cases, students' late arrival is the result of immigration policy. Most countries require that immigrants have adequate lodgings and income before family reunification is allowed. Although such requirements are well-intentioned, the result may be that children have to wait years before they can immigrate, thus making it more difficult for them to integrate into school and into the society of the host country (Heath and Kilpi-Jakonen, 2012). Providing language instruction to older immigrant students is essential.

CONCENTRATION OF DISADVANTAGE

Underperformance among immigrant students can be partly linked to the fact that these students tend to be concentrated in disadvantaged schools (OECD, 2012b). Immigrants tend to settle in neighbourhoods with other immigrants, often of their own origin and socio-economic status, when they move to a new country. By doing so, they build a network of relatives and friends who share their culture and can also help newly arrived immigrants make their way through administrative procedures and perhaps even find work. In addition, early selection or tracking policies in the school system may wind up grouping students of similar origin in the same institution, regardless of where they live. Studies of this phenomenon have shown that the concentration of immigrant students, in itself, need not have adverse effects, provided that there is access to social and public services of a quality comparable to those found elsewhere, and provided that ethnic agglomerations do not become permanent enclaves with little possibility of outward – and upward – mobility (Damm and Rosholm, 2010; Edin, Fredriksson and Aslund, 2004).

This section examines the extent to which the concentration of immigrant or language-minority students is associated with less-favourable education outcomes. The concentration of immigrant students or those who do not speak the language of assessment at home is measured as the proportion of students with such characteristics in each school.[5]

PISA 2012 results suggest that students who attend schools where the proportion of immigrant students is large perform as well as those who attend schools where the proportion of immigrant students is small, after the socio-economic profiles of the students and the school are taken into account. Across OECD countries, students who attend schools where the concentration of immigrants is high (i.e. where more than a quarter of students are immigrants) tend to perform worse than those in schools with no immigrant students. The observed difference between these two groups is 18 score points, but after accounting for the socio-economic status of the students and schools, the difference is more than halved, to five score points. In fact, Greece and Belgium are the only countries with large immigrant student populations (more than 10%), where there is a large performance difference after accounting for socio-economic status (40 and 30 score points, respectively) (Table II.3.9).

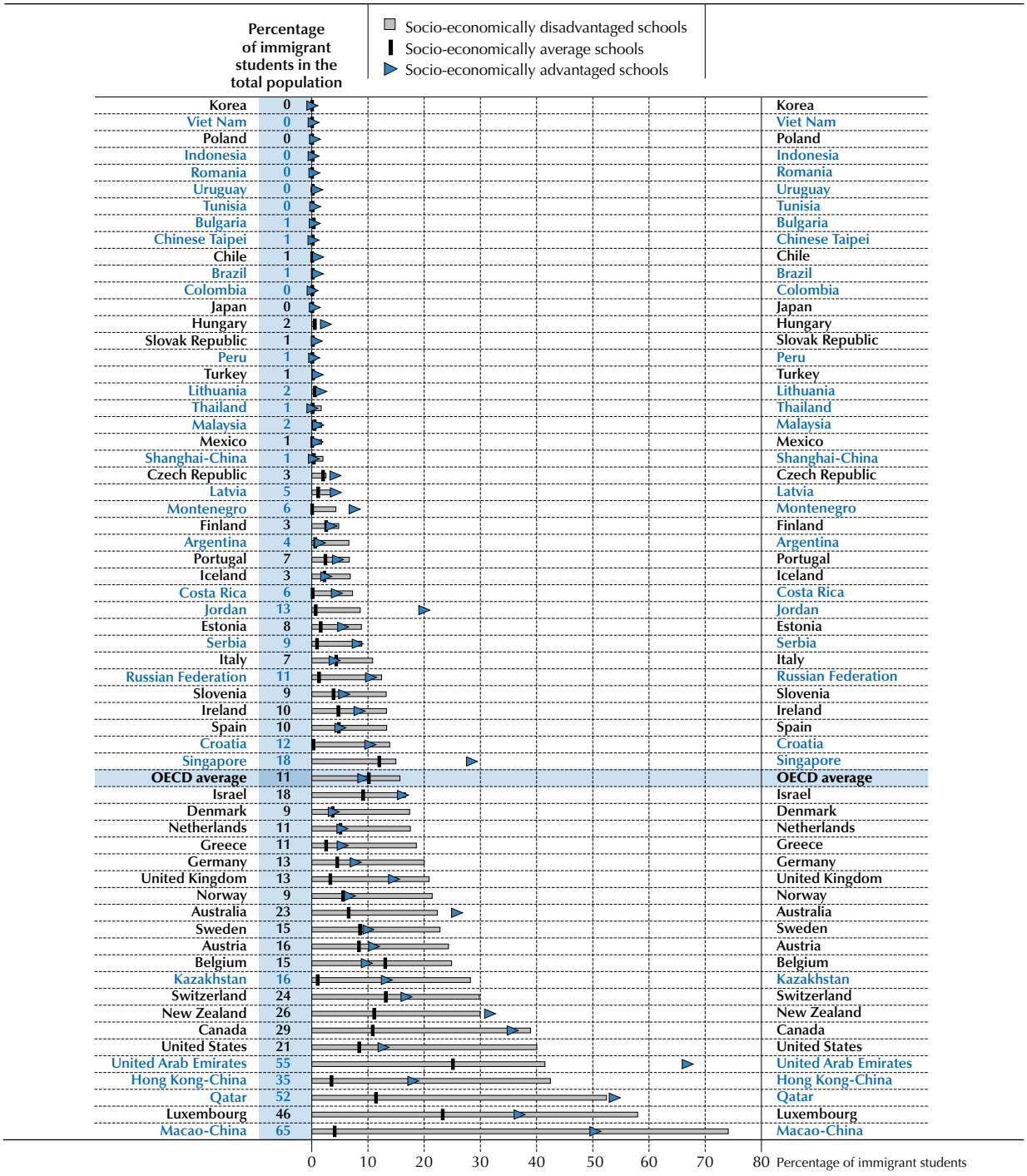
In Estonia, Portugal and Hungary there are also large differences after accounting for socio-economic status, but the size of the immigrant population is smaller. In the Netherlands, Germany and Ireland large performance differences between these two types of schools are observed before accounting for socio-economic status; but most of these differences are strongly related to socio-economic disparities, as they are no longer observed after taking socio-economic status into account. A similar pattern is observed in Slovenia, Italy, Argentina and Finland, but in these countries/economies the immigrant population is smaller (less than 10%). In 14 out of 35 countries with comparable data, students in schools with high concentrations of immigrant students underperform before accounting for socio-economic disparities. After taking socio-economic status into account, the number of countries/economies drops to 7; and in most, the performance gaps are so reduced, or even halved, that they are practically insignificant (Table II.3.9).

A similar pattern is observed when considering the concentration of students who do not speak the language of assessment at home, although differences in performance are larger (Table II.3.10). Across OECD countries, before accounting for students' and schools' socio-economic profile, the difference in mathematics performance between students in schools with high concentrations of students who do not speak the language of assessment at home and those in schools where all students speak the assessment language at home is almost 30 score points, but that difference disappears after taking socio-economic status into account. However, in 16 of the 42 countries with available data, large differences in mathematics performance are observed across these schools; but in all but six of them, those differences are no longer observed after taking socio-economic status into account. Before taking socio-economic status into account, the largest differences are observed in the Netherlands, Bulgaria, Italy, the Slovak Republic, Slovenia, Thailand, Turkey, Mexico and Lithuania. After accounting for socio-economic status, the largest differences in mathematics performances are observed in Hong Kong-China, Switzerland, Indonesia, Greece and Peru.

In general, immigrant students and those who do not speak the language of assessment at home tend to be concentrated in disadvantaged schools (Figure II. 3.9). For example, in the United States, 40% of students in disadvantaged schools are immigrant students, whereas they account for 13% of the student population in advantaged schools (Table II.4.2). In Hong Kong-China, Macao-China and Luxembourg, the gap in the proportion of immigrant students attending advantaged and disadvantaged is larger than 20 percentage points. A similar pattern is observed among immigrant students who do not speak the language of assessment at home.

■ Figure II.3.9 ■

Proportion of immigrant students in socio-economically disadvantaged, average and advantaged schools[1]



How to read this chart: On average across countries and economies, immigrant students represent 11% of the total student population; however, they represent 16% of students attending socio-economically disadvantaged schools, 5% of those attending average schools, and 9% of those attending socio-economically advantaged schools.

1. A socio-economically disadvantaged school is one whose students' mean socio-economic status is statistically significantly below the mean socio-economic status of the country/economy; an average school is one where there is no difference between the schools' and the country's/economy's mean socio-economic status; and an advantaged school is one whose students' mean socio-economic status is statistically significantly above the country's/economy's mean socio-economic status.

Countries and economies are ranked in ascending order of the proportion of immigrant students in socio-economically disadvantaged schools.

Source: OECD, PISA 2012 Database, Tables II.3.4a and II.4.2.

StatLink http://dx.doi.org/10.1787/888932964832

PERFORMANCE, IMMIGRANT STATUS AND COUNTRY OF ORIGIN

With increasing inflows of immigrants comes greater diversity in backgrounds – and in education outcomes. Some PISA-participating countries collect information about immigrant students' country of birth and that of their parents, which allows for developing deeper insights into these students' performance and the extent to which host countries are meeting immigrant students' needs. Results from these countries show that immigrant students from the same country and of similar socio-economic status perform very differently across school systems.

Performance differences are large among immigrant students who were born in partner countries. For example, immigrant students from the Russian Federation who are living in Germany outperform those who are living in Greece by more than 75 score points, after taking into account their socio-economic status. Students of Turkish origin living in Belgium outperform Turkish immigrant students of similar socio-economic status, but who are living in Finland by almost 55 score points. On average across host countries with comparable PISA data, immigrant students from Viet Nam score well in mathematics regardless of their country of destination. Those living in Australia attain a mean score of 548 points while those living in the Czech Republic score 524 points.

Among immigrant students from OECD countries, performance differences across host countries are equally large. For example, immigrant students from France who are living in Switzerland outperform French immigrant students living in Israel by more than 60 score points after accounting for socio-economic status. Students of Portuguese origin living in Switzerland outperform those of the same origin and with similar socio-economic status who live in Luxembourg by 58 score points. Immigrant students from Germany living in Austria outperform those living in Switzerland by 37 score points (Table II.3.11).

The wide performance differences between students of similar socio-economic status and a common country of origin suggest that schools and education policy in the host countries influence these students' performance. While immigration policies, similarities between the immigrants' and the host culture, and other social policies also explain some of these differences in performance, some education systems appear to facilitate the integration of immigrant students better than others.

Some groups of immigrant students achieve high levels of performance regardless of the country to which they immigrated. For example, immigrant students from China living in Australia and New Zealand are all among the top ten highest-performing groups of immigrant students of all host countries, as are immigrant students from Korea living in New Zealand, and immigrant students from India and Viet Nam living in Australia. Students of German origin in Austria and Luxembourg are the only immigrant students not from Asian countries who are among these top-performing groups.

The mean mathematics performance among all these groups is 548 score points or higher (Table II.3.11), the equivalent of more than one full year of schooling above the OECD average. These students show that it is possible to succeed at school even when confronted with the challenges of adapting to a new country, a new school system and, in many cases, a new culture and language.

Countries that are just beginning to receive increasing numbers of immigrant students from diverse backgrounds can learn from the experience of those systems that have been confronted with this challenge for longer and have succeeded in integrating these students into their school systems. The fact that immigrant students from the same country of origin, cultural backgrounds and socio-economic status perform so differently across host countries indicates that education and social policy can have an impact not only on these students' performance but also on how prepared they are to make the most of available opportunities in their host countries.

Notes

1. The literature on the relationship between family structure and performance is vast, and parental engagement is only one of the aspects analysed in this literature. The literature has focused on the economic situation and, particularly, the stress levels of the family stemming from the transition from one type of family to another and from precarious economic situations. See, for example, Buchmann and Hannum (2001) for a cross-national look at this relationship; McLanahan and Sandefur (1994) for the consequences for students; Raley, Frisco and Wildsmith (2005) for a study of status and stress by comparing single-parent households to cohabitation; and Jeynes (2005) for a discussion about parental involvement in single-parent households. For classic studies on the differences in the use of language by social class, including parent-child interactions and language quality and richness, see Brice Heath (1983). Also, see Volume IV of this report for differences in the types and level of parental involvement in schools across selected PISA countries.

2. Students reported on who usually lives at home with them: a) Mother (including stepmother or foster mother); b) Father (including stepfather or foster father); c) Brother(s) (including stepbrothers); d) Sister(s) (including stepsisters); e) Grandparent(s); Others (e.g. cousin). Students from single-parent families are those who responded "No" and "Yes" to a) and b), or "Yes" and "No" to a) and b). That is, they reported that they live with one parent but not the other. Any other response is categorised as "other", unless the student did not respond to this question at all.

3. This implies that students who were born abroad but who had at least one parent born in the country of assessment are also classified as students without an immigrant background.

4. If information on only one of the parents is missing, it is assumed that the other parent has the same immigrant background as the one whose information is missing. If the information on the country of birth of the student is missing, the variable is coded as missing.

5. Robustness checks were conducted to exclude schools with few observations, but the results did not change in any significant way.

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