

## Chapter 6

# Resilience and the socio-economic status of students with an immigrant background

*This chapter applies a resilience framework to determine whether students' socio-economic status is a risk or a protective factor for students with an immigrant background. It examines whether socio-economic status can explain why some students with an immigrant background perform worse at school, and report less social and emotional well-being, than others.*

### Notes regarding Cyprus

Note by Turkey: The information in this document with reference to “Cyprus” relates to the southern part of the Island. There is no single authority representing both Turkish and Greek Cypriot people on the Island. Turkey recognises the Turkish Republic of Northern Cyprus (TRNC). Until a lasting and equitable solution is found within the context of the United Nations, Turkey shall preserve its position concerning the “Cyprus issue”.

Note by all the European Union Member States of the OECD and the European Union: The Republic of Cyprus is recognised by all members of the United Nations with the exception of Turkey. The information in this document relates to the area under the effective control of the Government of the Republic of Cyprus.

### Note regarding data from Israel

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

### What the data tell us

- On average and in most PISA countries, second-generation and, especially, first-generation immigrant students are socio-economically disadvantaged compared to native students. By contrast, returning foreign-born students and native students of mixed heritage are more advantaged than native students.
- Differences in socio-economic status explain about one-fifth of the gap between students with an immigrant background and native students in the likelihood of attaining baseline levels of academic proficiency, on average across OECD and EU countries. In Ciudad Autónoma de Buenos Aires (Argentina), Costa Rica, Croatia, France, Greece, Hong Kong (China), Luxembourg and the Netherlands, socio-economic status explains a considerable fraction of immigrant students' academic disadvantage, while in the United States, immigrant and native students with a similar socio-economic profile have equal chances of attaining baseline academic proficiency.
- Socio-economic disadvantage is one of the factors that explain differences between students with and without an immigrant background in well-being, but the link tends to be weaker than that with academic outcomes. In Greece, differences in socio-economic status explain 45% of the academic gap between immigrant and native students but only 12% of the gap in sense of belonging and 22% of the one in test anxiety.
- In CABA (Argentina), Croatia, Hong Kong (China) and the United States socio-economic gaps between immigrant and native students account for almost the entirety of academic gaps between the two groups. By contrast, in Chile, Estonia, Finland, Iceland, Latvia, Macao (China), Portugal, Qatar and the United Arab Emirates, academic gaps between immigrant and native students are not explained by differences in the socio-economic status of these two groups.
- In most countries and economies, the positive effect of an improvement in socio-economic status on academic performance and social well-being is greater for native students than for immigrant students. On average across OECD and EU countries, a 1-point increase in the PISA index of economic, social and cultural status increases the gap in the percentage of immigrant and native students who attained baseline academic proficiency by four percentage points and the gap in the percentage who reported a sense of belonging at school by two percentage points.

The impact of socio-economic status on academic performance has been widely documented, and research has identified several mechanisms linking the two (Bianchi et al., 2004; Feinstein, Duchworth and Sabates, 2008; Jæger and Breen, 2016). First and foremost, parents' education and occupational status directly affect the amount of resources that a family can allocate to a child's upbringing. Low income hinders parents' ability to nurture and provide for their children during childhood and adolescence, which is associated with slower cognitive development (Case, Lubotsky and Paxson, 2002; Currie et al., 2012). Higher socio-economic status typically translates into greater educational resources for students, such as books and computers, at home and at school. Cultural resources, such as the time spent parenting, and social resources, including access to social networks, are often transferred from parent to child.

Socio-economic status is one of the strongest determinants of students' academic performance and general well-being (OECD, 2016a; 2017) and has been widely examined in the case of students with an immigrant background (Marks, 2006; Martin, 1998; Portes and MacLeod, 1996). It affects student outcomes through a variety of channels, at the individual, school and system levels. A family's socio-economic status can determine parents' ability to provide for their child's needs and to be involved in their education. It can also influence the socio-economic composition of the school that students attend, which has an impact on the school's resources and environment. For example, wealthy parents can afford private schooling when local public schools are not considered to be of high quality. Parents with high educational attainment are also better able to choose the school that best meets the needs of their children, and in which their children will meet stimulating peers.

Table 6.1 ■ Snapshot of the socio-economic status of immigrant and native students

	Countries/economies with values above the OECD average	Countries/economies with values not significantly different from the OECD average	Countries/economies with values below the OECD average		
	Difference in the PISA index of economic, social and cultural status (ESCS) between immigrant and native students	Difference in the PISA index of economic, social and cultural status (ESCS) between immigrant students with at least one native-born parent and native students	Difference in parents' highest educational attainment (years of schooling) between immigrant and native students	Difference in the parents' highest occupational status (ISEI) between immigrant and native students	Difference in the index of household resources (HOMEPOS) between immigrant and native students
<b>OECD average</b>	<b>-0.3</b>	<b>0.13</b>	<b>-0.42</b>	<b>-6.67</b>	<b>-0.29</b>
<b>EU average</b>	<b>-0.26</b>	<b>0.08</b>	<b>-0.34</b>	<b>-6.09</b>	<b>-0.28</b>
<b>CABA (Argentina)</b>	-1.37	-0.4	-3.46	-25.5	-0.91
<b>United States</b>	-0.82	-0.08	-2.55	-14.61	-0.42
<b>Hong Kong (China)</b>	-0.8	-0.57	-2.08	-16.3	-0.49
<b>Luxembourg</b>	-0.79	-0.2	-2.27	-13.29	-0.54
<b>Mexico</b>	-0.74	0.38	-1.82	-10.77	-0.68
<b>Greece</b>	-0.67	0.08	-1.12	-16.22	-0.55
<b>Thailand</b>	-0.66	-0.02	-2.34	-8.35	-0.51
<b>Slovenia</b>	-0.64	0.01	-1.23	-14.62	-0.48
<b>Netherlands</b>	-0.6	0.1	-1.54	-11.29	-0.43
<b>Costa Rica</b>	-0.6	0.02	-1.48	-8.64	-0.55
<b>Austria</b>	-0.59	0.06	-1.12	-10.56	-0.6
<b>Denmark</b>	-0.59	0.16	-1.52	-10.93	-0.37
<b>Switzerland</b>	-0.57	0.13	-1.41	-12.78	-0.3
<b>France</b>	-0.55	0.08	-1.23	-12.55	-0.36
<b>Germany</b>	-0.55	-0.12	-1.05	-11.39	-0.47
<b>Spain</b>	-0.53	0.23	-0.65	-10.33	-0.63
<b>Belgium</b>	-0.53	-0.17	-1.29	-10.28	-0.38
<b>Iceland</b>	-0.52	0.12	-0.97	-14.85	-0.4
<b>Sweden</b>	-0.49	0	-0.83	-8.3	-0.53
<b>Norway</b>	-0.48	0.09	-0.61	-11.24	-0.45
<b>Italy</b>	-0.47	0.08	0.01	-14.02	-0.53
<b>Finland</b>	-0.44	0.13	-0.77	-8.97	-0.4
<b>Macao (China)</b>	-0.42	-0.15	-1.24	-7.39	-0.25
<b>Dominican Republic</b>	-0.35	0.32	-0.52	-6.82	-0.44
<b>Croatia</b>	-0.28	-0.04	-0.52	-7.57	-0.17
<b>Chile</b>	-0.28	0.45	-0.16	-3.66	-0.45
<b>Israel</b>	-0.26	0.11	-0.6	-2.25	-0.3
<b>Japan</b>	-0.2	0.06	-0.13	c	-0.01
<b>United Kingdom</b>	-0.13	0.13	0.05	-1.25	-0.26
<b>Czech Republic</b>	-0.11	-0.04	0.34	-4.17	-0.3
<b>Cyprus*</b>	-0.11	0.14	0.43	-2.11	-0.37
<b>Bulgaria</b>	-0.08	0.06	-0.28	-6.86	0.11
<b>Russia</b>	-0.06	0.09	-0.16	-1.55	0
<b>Qatar</b>	-0.04	-0.2	0.62	4.06	-0.56
<b>B-S-J-G (China)</b>	-0.03	-0.19	0.66	c	-0.47
<b>Estonia</b>	-0.03	-0.01	0.22	-2.23	-0.03
<b>Trinidad and Tobago</b>	-0.02	0.21	0.74	0.75	-0.33
<b>Australia</b>	-0.02	0.15	0.07	-0.34	-0.06
<b>Brazil</b>	-0.01	0.53	0.56	-0.96	-0.08
<b>Slovak Republic</b>	-0.01	0.02	0.58	-2.76	-0.25
<b>United Arab Emirates</b>	0	-0.17	0.99	3.12	-0.54
<b>Canada</b>	0.03	0.23	0.3	0.68	-0.06
<b>FYROM</b>	0.04	0.11	0.58	-2.08	0
<b>Albania</b>	0.05	0.5	0.99	c	-0.23
<b>Lebanon</b>	0.07	0.45	1.63	-1.81	-0.14
<b>Portugal</b>	0.08	0.43	1.08	-1.57	-0.16
<b>Georgia</b>	0.1	0.09	0.34	-0.19	0.06
<b>New Zealand</b>	0.1	0.25	0.66	1.52	-0.05
<b>Ireland</b>	0.11	0.19	0.6	2.08	-0.04
<b>Lithuania</b>	0.12	0.09	0.29	2.13	0.05
<b>Kosovo</b>	0.15	0.18	0.01	4.19	0.17
<b>Peru</b>	0.16	0.76	0.46	1.67	0.03
<b>Jordan</b>	0.18	0.36	0.48	2.23	0.17
<b>Algeria</b>	0.2	0.6	0.01	-2.21	0.44
<b>Latvia</b>	0.25	0.02	0.5	4.29	0.19
<b>Hungary</b>	0.29	0.25	1.16	5.04	0.11
<b>Moldova</b>	0.29	0.18	0.58	4.56	0.33
<b>Montenegro</b>	0.31	0.21	0.89	5.25	0.19
<b>Tunisia</b>	0.34	0.61	0.94	2.39	0.25
<b>Colombia</b>	0.37	0.32	1.08	7.18	0.2
<b>Uruguay</b>	0.4	0.15	2.17	5.86	-0.11
<b>Singapore</b>	0.46	-0.09	1.33	7.23	0.31
<b>Malta</b>	0.52	0.14	2.18	9.29	0.03
<b>Turkey</b>	0.89	1.04	3.6	8.02	0.52
<b>Korea</b>	c	-0.16	c	c	c
<b>Poland</b>	c	0.31	c	c	c
<b>Indonesia</b>	c	-0.03	c	c	c
<b>Romania</b>	c	0.13	c	c	c
<b>Chinese Taipei</b>	c	-0.48	c	c	c
<b>Viet Nam</b>	c	0.24	c	c	c

\* See note at the beginning of this Chapter.

Source: OECD, PISA 2015 Database, Tables 6.3, 6.19, 6.20 and 6.1.


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Table 6.2 ■ Snapshot of the relation between immigrant-native gaps in socio-economic background and gaps in academic and well-being outcomes

		Countries/economies with values <b>above</b> the OECD average	Countries/economies with values not significantly different from the OECD average	Countries/economies with values <b>below</b> the OECD average				
	Percentage of the difference in the likelihood that native and immigrant students will reach baseline levels of academic proficiency explained by socio-economic status <sup>1, 2</sup>	Additional socio-economic disadvantage in academic performance among immigrant students <sup>3</sup>	Percentage of the difference in the likelihood that native and immigrant students will report feeling that they belong at school explained by socio-economic status <sup>1, 2</sup>	Additional socio-economic disadvantage in sense of belonging at school among immigrant students <sup>3</sup>	Percentage of the difference in the likelihood that native and immigrant students will report feeling satisfied with life explained by socio-economic status <sup>1, 2</sup>	Additional socio-economic disadvantage in life satisfaction among immigrant students <sup>3</sup>	Percentage of the difference in the likelihood that native and immigrant students will report low levels of schoolwork-related anxiety explained by socio-economic status <sup>1, 2</sup>	Additional socio-economic disadvantage in schoolwork-related anxiety among immigrant students <sup>3</sup>
OECD average	21.05	-3.56	18.16	-2.14	32.98	-0.34	15.78	0.40
EU average	19.14	-3.63	15.46	-1.94	25.30	-0.82	16.72	-0.70
United States	84.76	-4.31		-2.37	100	-3.36	33.47	-1.55
Hong Kong (China)	78.8	-4.22		-0.49	69.8	0.1		-0.77
CABA (Argentina)	70.96	-5.87	68.74	2.1	m	m	m	m
Costa Rica	55.74	-3.08		-1.61		-1.39		-2.86
Croatia	49.35	-0.06		-2.4		-1.32		1.68
Luxembourg	48.09	0.47	22.84	-4.72	70.35	-0.1	21.36	-2.07
France	46.25	-7.43	79.14	-5.11	31.2	-1.48	18.48	0.69
Greece	44.58	-9.34	12.55	-6.16	37	0.8	22.38	4.17
Netherlands	41.13	-7.14	37.04	-6.94		-3.48	-2.53	1.75
Italy	32.65	-5.17	6.87	2.28		0.91		-4.68
Austria	30.69	-1.19	67.26	0.33	40.43	-0.8	19.54	-2.98
Slovenia	29.64	-5.18	11.29	-3.05	8.69	1.64	29.63	0.95
Belgium	29.61	-2.25	28.32	-4.94	41.53	-2.99	33.76	0.24
Spain	28.28	1.25	8.75	1.3	21.13	0.99	16.72	-1.27
Norway	27.72	-1.74		-6.71	m	m	22.44	-2.79
Chile	26.67	2.51		6.77		-2		-1.6
Sweden	25.48	-3.56	21.34	-1.74	m	m	15.68	-0.14
Germany	25.44	-4.12	19.95	-2.98	38.65	-3.11	23.55	-5.09
Switzerland	24.23	0.04	14.07	-4.11	21.28	-2.01	9.54	2.95
Mexico	23.51	-8.73	11.67	0.38		-2.96	10.39	-0.33
Czech Republic	21.87	-10.09	4.98	1.72		-3.99		7.52
Denmark	20.27	-5.62	30.8	-5.61	m	m	31.36	-3.3
Finland	17.3	2.35		-1.65		2.9	0.49	2.42
Iceland	14.99	-7.53	10.96	7.2	38.34	-9.9	37.76	0.31
United Kingdom	12.01	-2.19		-1.49	3.75	-1.72	20.56	0.07
Bulgaria	7.19	-9.03	-0.55	-1.68		-10.54		-1.71
Japan	6.99	-2.38		1.67		17.43	-9.84	17.87
Estonia	1.96	1.56	1.17	3.93	5.11	2.22		0.23
Brazil	0.87	-6.25	1.21	-8.48		-2.79		4.97
B-S-J-G (China)	0.73	-1.25		-11.52		-22.03		3.62
Trinidad and Tobago	0.03	-4.91	0.25	0.49	m	m	m	m
Slovak Republic	-2.41	-8.36	0.1	-4.03		2.79		6.07
Portugal	-7.8	-1.33	1.14	-2.04		3.37		-0.55
FYROM	-20.76	-7.97	4.34	3.38	m	m	m	m
Tunisia	-22.97	-6.41	-0.25	-4.89		6.65	-12.39	-3.4
Colombia	-32.77	0.02	-2.84	2		-0.63		1.46
Latvia	-34.36	-2.82	-3.38	-4.71		-3.09		-5.99
Australia		-2.67		-6.56	m	m	1.95	1.33
Canada		-4.02		-7.61	m	m	0.18	0.6
Hungary		-9.94		2.07		-1.77		-2.44
Ireland		0.11	-5.48	-6.6	0.23	-3.41	-9.74	2.49
Israel		-4.68	m	m	m	m		0.32
New Zealand		0.7		-7.02	m	m		0.34
Turkey		-4.66		0.05		4.4		-2.46
Albania		-5.01	c	c	m	m	m	m
Algeria		-2.28		1.89	m	m	m	m
Cyprus*		-0.44	-1.3	-2.06		-2.74	9.54	-3.27
Dominican Republic		0.9	8.21	-1.07		-3.2		-2.02
Georgia		-7.53		-2.69	m	m	m	m
Jordan		1.78	-20.1	3.51	m	m	m	m
Kosovo		-5.13		2.85	m	m	m	m
Lebanon		-2.87		-5.75	m	m	m	m
Lithuania		-4.34		2.67		6.02		-12.22
Macao (China)		-3.11		-2.57		5.13		-2.67
Malta		-0.45	-16.83	3.28	m	m	m	m
Moldova		-3.66		4.92	m	m	m	m
Montenegro		-3.78	6.08	-5	-16.89	-1.65		0.73
Peru		-0.85		-7.57	c	c	c	c
Qatar		12.04		3.4	2.07	4.37	-2.28	2.58
Russia		1.51		-9.61		-2.13		-1.56
Singapore		-5.12		-3.07	m	m		-0.79
Thailand		-13.46	12.59	-12.81		-0.81		-4.33
United Arab Emirates		10.9		1.89	-0.18	1.11	0.33	-1.68
Uruguay		-1.76		-0.93		-2.26		-9.12

\* See note at the beginning of this Chapter.

1. Results are obtained by comparing estimates of the immigrant coefficients in the following two regression models: the first regression estimates the change in the likelihood that a student attains the favourable outcome if he/she has an immigrant background; the second regression compares the change in the likelihood that a student attains the outcome if he/she has an immigrant background controlling for the PISA index of economic, social and cultural status (ESCS). The coefficient on the immigrant term in the second regression is subtracted from the one of the first regression and then divided by it.

2. Values are reported only for countries that have a statistically significant and negative immigrant-native gap in the outcome, before accounting for socio-economic background.

3. Increase in the disadvantage for immigrant students associated with a 1-point increase in the ESCS index among both immigrant and native students.

Notes: Only countries/economies with valid data for at least one outcome are presented.


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

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".

Students who report being satisfied with life are those who reported a life satisfaction of 7 or above on a scale from 1 to 10.

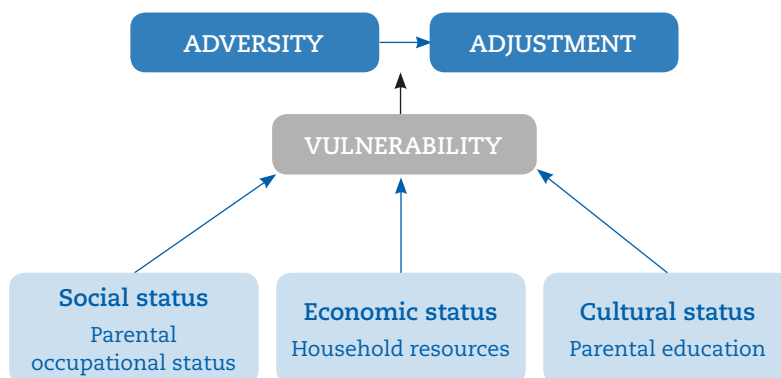
Students who report low schoolwork-related anxiety are those who reported that they "disagree" or "strongly disagree" with the statements "I often worry that it will be difficult for me taking a test" and "Even if I am well prepared for a test, I feel very anxious".

Source: OECD, PISA 2015 Database, Tables 6.7, 6.11, 6.13 and 6.15.

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At the system level, socio-economic status is related to spending on education, which affects children's ability to perform and enjoy a sense of well-being. Figure 6.1 shows how socio-economic status can affect the vulnerability of students with an immigrant background, and mediate the effect between immigrant background and academic performance, sense of belonging, life satisfaction and achievement motivation.

Figure 6.1 ■ **How socio-economic status affects the resilience process**



Family background is often related to the type of school children attend, which, in turn, can perpetuate inequities in opportunities to learn. Students from different backgrounds may have varying degrees of exposure to specific content in the classroom because of the instructional time school systems and teachers allocate to them. The time spent on specific content and the way that time is organised are two of the main determinants of student achievement (OECD, 2016b). Research using PISA data suggests that up to one-third of the relationship between socio-economic status and student performance is accounted for by measures of opportunity to learn (Schmidt et al., 2015).

The design of education systems can mediate the relationship between parents' resources and learning outcomes. Sorting and selecting (known as stratification) policies used by schools and education systems, such as early tracking or grade repetition, can lead to differences in academic achievement across socio-economic backgrounds. While the selection of students for certain grades or programmes should be based primarily on performance, research shows that students' background characteristics also influence those decisions (Agasisti and Cordero, 2017; van de Werfhorst and Mijs, 2010). Other characteristics of education systems, such as the level of resources available to public or private schools, or to urban and rural schools, can strengthen or weaken the relationship between socio-economic status and academic performance (Greenwald, Hedges and Laine, 1996; OECD, 2016b; Rivkin, Hanushek and Kain, 2005).

Socio-economic status can also affect students' satisfaction with life, their sense of belonging at school, and their aspirations for the future. Family wealth can affect adolescents' well-being by limiting their consumption and leisure opportunities, so that disadvantaged students might not have access to things they need to participate fully in society and relate to their peers (Becchetti and Pisani, 2014). Wealth and social status are also linked to the type of school children attend and the environment they are exposed to, which determine their well-being at school (Pajares and Urdan, 2006).

In most PISA countries, the proportion of socio-economically advantaged students who reported being "very satisfied" with life is larger than that of disadvantaged students who so reported (OECD, 2017). However, in a few countries, disadvantaged students tend to be more satisfied with their life. Researchers have identified some possible explanations for the phenomenon. One suggests that when financial resources are scarce, social "safety nets" develop within the community, so that the sense of social integration and life satisfaction among community members grows stronger (Saegert et al., 2001). Another argues that the factors that students take into account when assessing their satisfaction with life may depend on the students' own socio-economic status (Diener et al., 2003; Neff, 2007; Tucker et al., 2006).

Relative, as opposed to absolute, wealth has a significant impact on students' life satisfaction because adolescents form opinions about themselves partly based on comparisons with their peers (Hudson, 2013; Sweeting and Hunt, 2014). Research shows that measures of socio-economic status are related to students' subjective social status at school (Goodman et al., 2001). Disadvantaged students who attend advantaged schools could suffer from a sense of isolation and might feel discriminated against. Phenomena of this kind have been documented in the United States (Carter, 2007; Davis, 2014) and in Chile (Montt, 2012), among other countries.

While having schools with a socio-economically diverse student body can put the life satisfaction and well-being of disadvantaged students at risk, it can have positive effects on their motivational well-being. Aspirations are shaped by family wealth, social status and neighbourhood characteristics (Stewart et al., 2007). Evidence shows that disadvantaged students could absorb the same attitudes as their advantaged peers and develop high aspirations and expectations for themselves (OECD, 2017).

### **The socio-economic status of students with an immigrant background**

Many empirical studies examining differences in academic performance and well-being related to socio-economic status rely on indicators that incorporate into one composite variable measures of parents' income, education and occupation. These components, while correlated, measure different aspects of socio-economic status (Bollen, Glanville and Stecklov, 2001; Hauser and Huang, 1997) and reflect a conception of socio-economic status as a combination of property, power and prestige (Bradley and Corwyn, 2002). The PISA background questionnaires include items that capture various aspects of students' socio-economic status. Students are asked about their parents' level of education and occupational status, and about the availability of a set of household items including consumer durables, and educational and cultural resources.

Student responses are used to develop the PISA index of economic, social and cultural status (ESCS), a composite indicator of students' socio-economic status. The index is designed to have a value of zero for the average OECD student and a standard deviation of one across equally weighted OECD countries. For a more detailed explanation of how the ESCS index was constructed, refer to the *PISA 2015 Technical Report*.

Although both thorough and simple (one number summarises a complex phenomenon such as socio-economic status), the ESCS index also has some important drawbacks. The most notable is that it does not allow for examining whether the roots of socio-economic disparities in different countries and between different groups of students stem from different mechanisms and processes.

For example, when examining the role socio-economic status plays in explaining performance gaps between students with and without an immigrant background and across different groups of students with an immigrant background in different countries, using the aggregate ESCS indicator does not allow for identifying whether differences are due to disparities in the cultural, economic or social-capital component of the index, and whether the relative importance of cultural, economic and social aspects differs across countries. In country A, for example, disparities in performance between students with an immigrant background and native students that are related to socio-economic status might stem from the fact that students with an immigrant background have low-educated parents, and that, if parents are offered a choice of schools for their child, parents' education becomes crucial for their child's success in education. By contrast, in country B, such differences might stem from the fact that students with an immigrant background are poorer than native students, are more likely to attend schools with fewer educational resources, and do not have the assets at home that are crucial for learning.

This chapter compares the socio-economic status of native students and of students with an immigrant background, and explores the link between differences in socio-economic status and differences in well-being outcomes. The first part of the chapter presents results obtained using the ESCS index, while the second part reports findings based on the three components of the index: the index of parents' highest occupational status, the index of parents' years in education, and the index of family possessions.

The socio-economic status of students, as measured by their values on the ESCS index, differs greatly across students with a different immigrant background and between countries. Figure 6.2 suggests that first-generation immigrant students (foreign-born students with foreign-born parents) tend to be

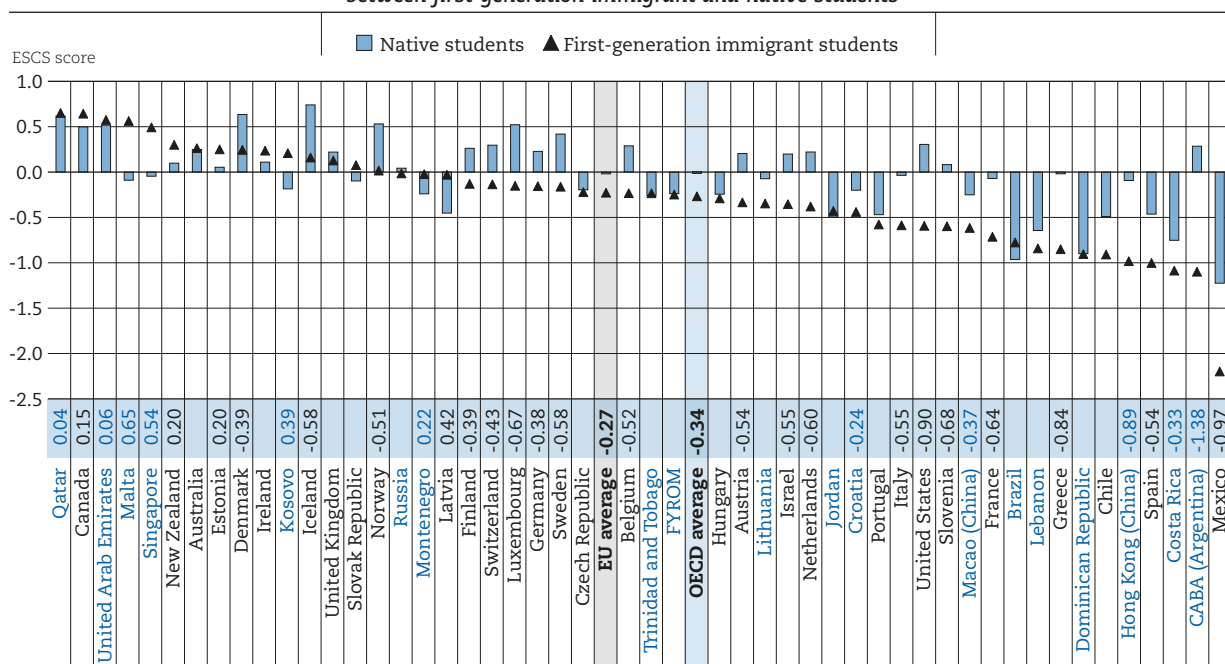


disadvantaged compared to native students. In 2015, on average across OECD countries, the ESCS of first-generation immigrant students was -0.27, about one-fourth of a standard deviation below the average OECD student (-0.23 across OECD countries). In as many as 24 out of 50 countries with available data, the ESCS index points of first-generation immigrant students was lower than those of their native peers, while the opposite was true only in 10 countries. The gap was above 0.5 (one half of a standard deviation) in 17 countries and economies, including Austria, Belgium, France, Iceland, Italy, the Netherlands, Norway, Spain and Sweden, while it was above 0.8 in Ciudad Autónoma de Buenos Aires (Argentina) (hereafter “CABA [Argentina]”), Greece, Hong Kong (China), Mexico and the United States. The largest gap was observed in CABA (Argentina), where the ESCS of foreign-born students with foreign-born parents was 1.38 points lower than that of native students, a difference similar to that between the average German and Mexican student.

In 15 countries and economies, first-generation immigrant students were above the OECD average on the ESCS index. However, they were advantaged compared to native students in only eight of those countries. In Canada, Malta, Qatar and the United Arab Emirates, the ESCS of first-generation immigrant students was more than one half of a standard deviation above the OECD average. While in Canada, Qatar and the United Arab Emirates the native-immigrant gap stood between 0.04 and 0.15 point, it was much higher in Malta: 0.65 point.

Figure 6.2 also shows that native and first-generation immigrant students vary significantly in their values on the ESCS index across countries. In Austria, Italy and Spain, the gap was approximately the same (-0.55), but the values for natives and first-generation immigrants differed widely. In Austria, they were 0.20 for natives and -0.33 for first-generation immigrants. In Italy, natives had a value of -0.04 and first-generation immigrants a value of -0.59 on the index, while in Spain, natives were at -0.46 and first-generation immigrants were at -1.00 on the index.

Figure 6.2 ■ **Average socio-economic status, by immigrant background**  
Difference in the PISA index of economic, social and cultural status (ESCS)  
between first-generation immigrant and native students



Notes: Only countries with valid estimates of the ESCS score of first-generation immigrant students are shown.

Statistically significant differences in the ESCS score between native and first-generation immigrant students are shown next to country/economy names. For the OECD and EU averages, this number refers only to the subset of countries/economies with valid information for both groups of students.

Countries and economies are ranked in descending order of the socio-economic status of first-generation immigrant students.

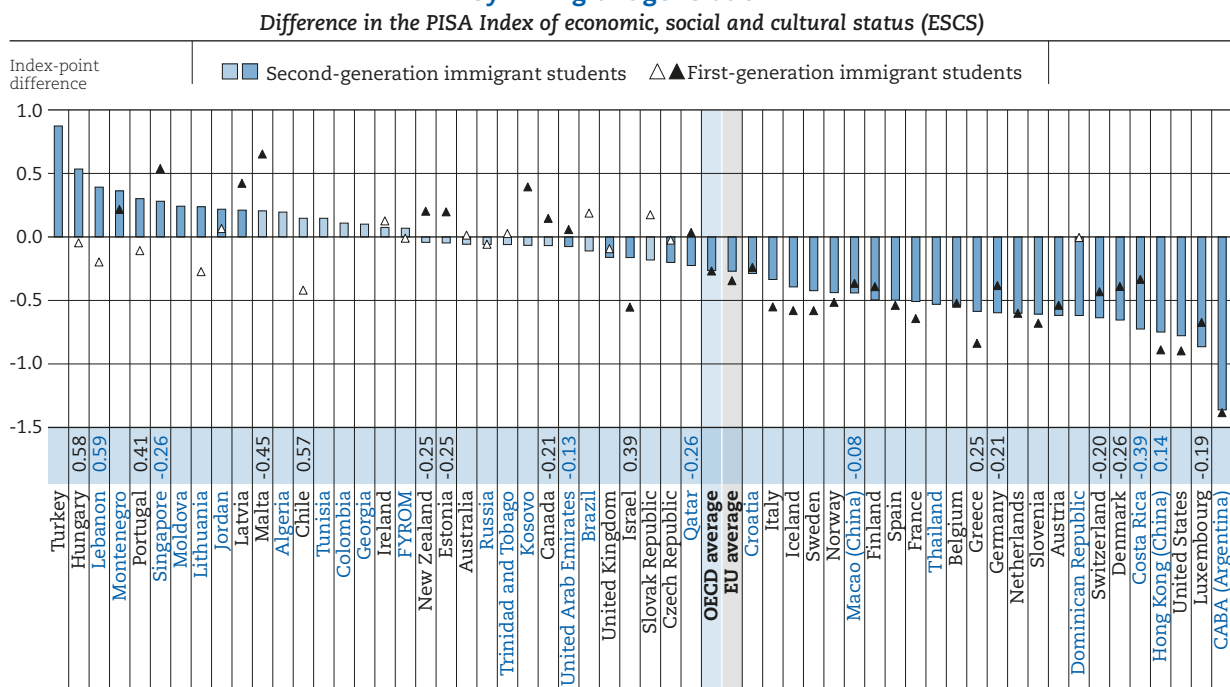
Source: OECD, PISA 2015 Database, Table 6.3.

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Native Spanish students had a value on the ESCS index that was 0.46 standard deviation below the OECD average and 0.13 point below the value for first-generation immigrant students in Austria. In CABA (Argentina), Costa Rica, Mexico and Spain, first-generation immigrant students had a value on the socio-economic index that was at least one standard deviation below the OECD average. This corresponds approximately to the difference in ESCS between the average Danish and Jordanian student. In these countries, native students had a higher value on the ESCS index than first-generation immigrant students, but the gaps differed greatly. In CABA (Argentina), the ESCS of natives was 1.38 points higher, in Mexico it was 0.97 point higher, in Costa Rica it was 0.33 point higher and in Spain it was 0.54 point higher.

Countries differ widely in their average socio-economic status as do the values for native and immigrant students. Therefore, in order to identify in greater detail differences in socio-economic status between the two groups, Figures 6.3 and 6.4 show, for countries with available data, the gaps in the ESCS index between native students and different groups of immigrant students (i.e. first- and second-generation immigrant students).

Figure 6.3 ■ Difference between immigrant and native students in socio-economic status, by immigrant generation



**Notes:** Statistically significant differences are marked in a darker tone.

Results are displayed only for countries/economies with valid estimates of the ESCS score of second-generation immigrant students.

Statistically significant differences in the ESCS score between second- and first-generation immigrant students are shown next to country/economy names. For the OECD and EU averages, this number refers only to the subset of countries/economies with valid information on both groups of students.

Countries and economies are ranked in descending order of the difference in the ESCS index between second-generation immigrant and native students.

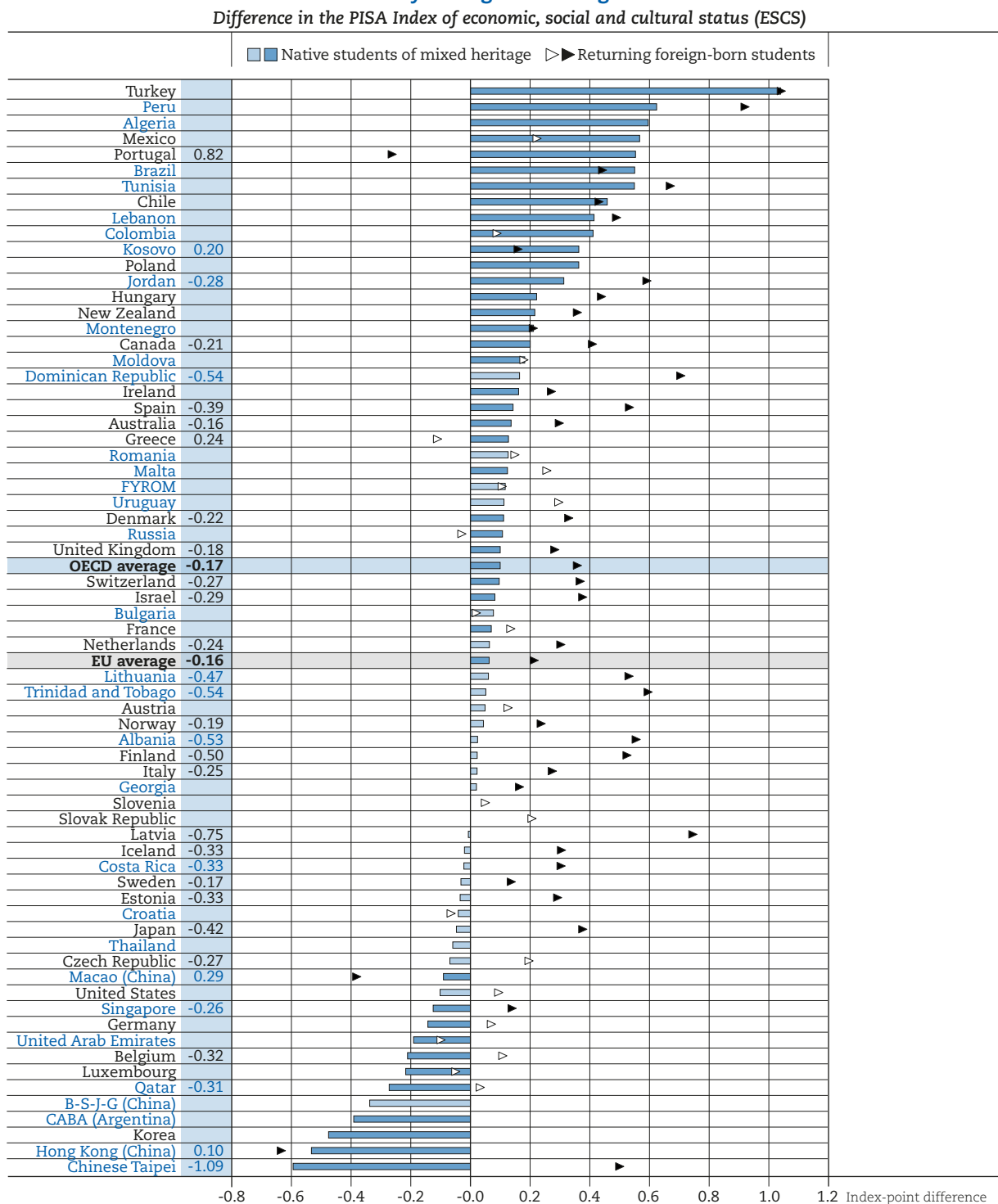
**Source:** OECD, PISA 2015 Database, Table 6.3.

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Data from PISA 2015 show that socio-economic differences between students with an immigrant background and native students vary considerably across immigrant backgrounds. Immigrant students (both first- and second-generation immigrant students) tend to be more disadvantaged than native students. By contrast, in the majority of countries, returning foreign-born students and native students of mixed heritage are more advantaged than native students. On average across OECD countries with available data in PISA 2015, the gap between native students and first-generation immigrant students was -0.34 point (-0.27 point across EU countries), while the gap between native students and second-generation immigrant students was -0.27 point (-0.26 point across EU countries) (Table 6.3, available on line).



Figure 6.4 ■ **Difference between immigrant and native students in socio-economic status, by immigrant heritage**



**Notes:** Statistically significant differences are marked in a darker tone.

Results are displayed only for countries/economies with valid estimates of the ESCS scores of native students of mixed heritage.

Statistically significant differences in the ESCS score between native students of mixed heritage and returning foreign-born students are shown next to country/economy names. For the OECD and EU averages, this number refers only to the subset of countries/economies with valid information on both groups of students.

Countries and economies are ranked in descending order of the difference in the ESCS index between native students of mixed heritage and native students.

**Source:** OECD, PISA 2015 Database, Table 6.3.

**StatLink** <http://dx.doi.org/10.1787/888933681787>

On average across OECD countries, native students of mixed heritage and returning foreign-born students had values on the index that were 0.10 and 0.28 point higher, respectively, than that of native students (0.06 and 0.21 point, respectively, across EU countries) (Table 6.3 available on line).

On average across OECD countries, first-generation immigrant students are the most socio-economically disadvantaged compared to native students (Table 6.3). However, second-generation immigrant students are also more disadvantaged than native students. In PISA 2015 their value on the ESCS index was below that of native students in as many as 29 countries and economies (more than the 26 where first-generation immigrant students were disadvantaged compared to natives). In 16 countries and economies, the gap amounted to more than one half of a standard deviation; in CABA (Argentina), Luxembourg and the United States, it was greater than 0.75 point.

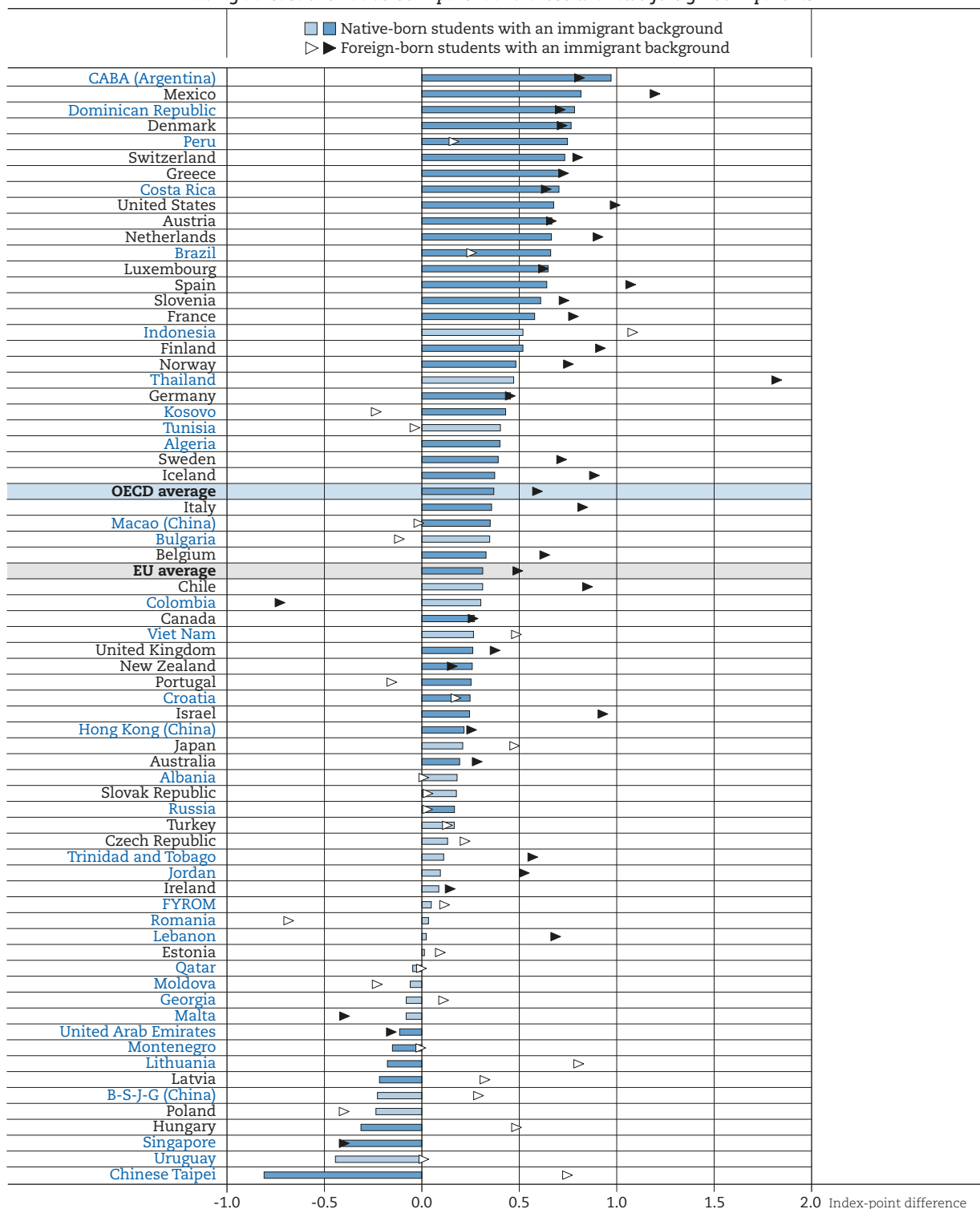
There was no statistical difference in values on the ESCS index between first- and second-generation immigrant students, on average across OECD and EU countries (Table 6.3). However, some differences can be observed across countries. In Hungary, Lebanon and Portugal, there was no statistical difference between the ESCS value of first-generation immigrant and native students, while the value of second-generation immigrant students was at least one-fourth of a standard deviation higher than that of native students. By contrast, in Canada, Estonia, Kosovo, Malta and New Zealand, first-generation immigrant students were socio-economically advantaged compared to natives, while second-generation immigrant students had a similar socio-economic status as natives. Overall, in 12 countries and economies, first-generation immigrant students were more advantaged than second-generation immigrant students, while the opposite was true in 7 countries and economies.

Figure 6.4 shows that, on average across OECD countries, returning foreign-born students are the most socio-economically advantaged group among those considered, including native students. In 36 countries and economies out of the 63 with available data in 2015, their value on the ESCS index was higher than that of native students. The opposite was true only in Hong Kong (China), Macao (China) and Portugal. In Albania, the Dominican Republic, Finland, Jordan, Latvia, Lithuania, Peru, Spain, Trinidad and Tobago, Tunisia and Turkey, the gap was greater than half of a standard deviation. Native students of mixed heritage were also more advantaged than native students in 29 countries, and the gap was greater than 0.5 point on the index in 7 countries. However, in Belgium, CABA (Argentina), Germany, Hong Kong (China), Korea, Luxembourg, Macao (China), Qatar, Singapore, Chinese Taipei and the United Arab Emirates, the average value on the ESCS index among native students of mixed heritage was lower than that of native students.

These results suggest that having at least one native-born parent crucially influences the socio-economic status of students with migration in their background. Figure 6.5 shows differences in socio-economic status between foreign-born students with two foreign-born parents and foreign-born students with at least one native parent (first-generation immigrant students and returning foreign-born students). It also shows differences between native-born students with two foreign-born parents and native-born students with at least one native-born parent. On average across OECD countries, returning foreign-born students were 0.59 point higher than first-generation immigrant students on the ESCS index (0.49 point across EU countries). In Algeria, CABA (Argentina), Chile, Finland, France, Iceland, Israel, Italy, Korea, Mexico, the Netherlands, Norway, Spain, Switzerland, Thailand and the United States, the gap was more than 0.75 point. On average across OECD countries, native students of mixed heritage were 0.37 point higher than second-generation immigrant students on the index (0.31 point across EU countries).

PISA shows that disparities in socio-economic status between native and immigrant students have evolved differently across countries. Figure 6.6 shows socio-economic differences between native and immigrant students in 2003 and 2015, and any statistically significant change that occurred during that period. On average across OECD countries, the gap between the two groups of students remained unchanged between 2003 and 2015. In Hungary, New Zealand and Turkey, the gap between the two groups was not statistically significant in 2003, but in 2015 immigrant students were more advantaged than native students. In Belgium, France and Germany, the gap shrank by at least 0.2 point and by as much as 0.52 point in Germany. By contrast, in Greece, Hong Kong (China), Ireland, Italy, Spain and the United States, the gap widened by at least 0.23 point between 2003 and 2015.

Figure 6.5 ■ **Socio-economic status, by students' and parents' immigrant background**  
 Difference in the PISA index of economic, social and cultural status (ESCS) between students with an immigrant background having at least one native-born parent and those with two foreign-born parents



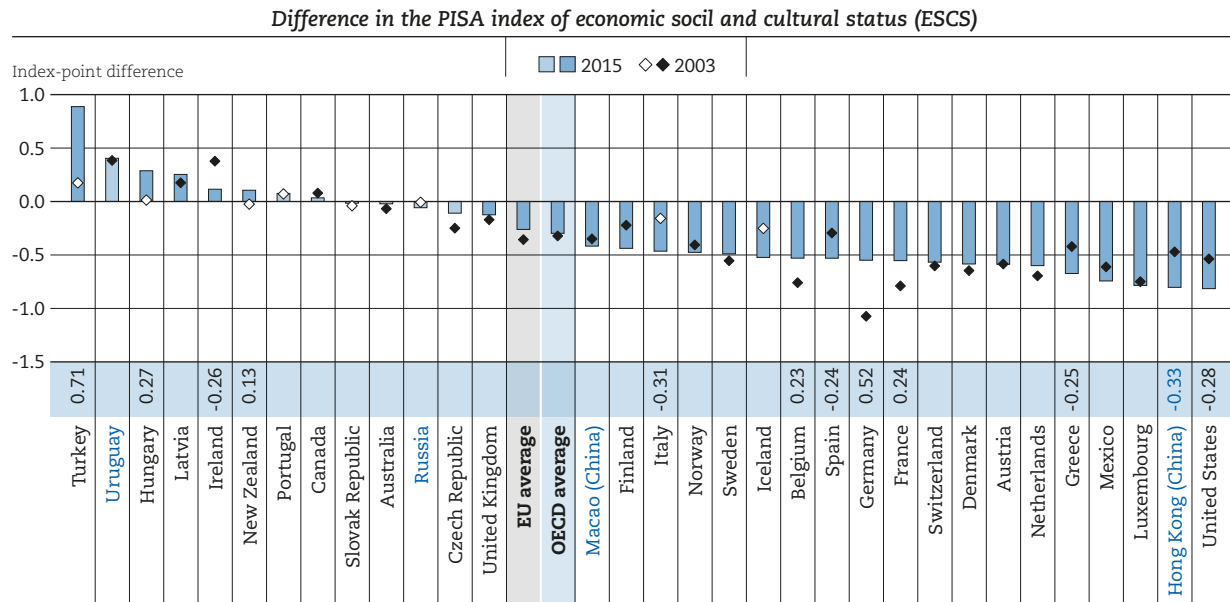
**Notes:** Only countries/economies with valid data on all groups of students with an immigrant background being compared are shown. Statistically significant differences are marked in a darker tone.

Countries and economies are ranked in descending order of the difference in the PISA index of economic, social and cultural status between native-born students with an immigrant background who have at least one native-born parent and those who have two foreign-born parents.

**Source:** OECD, PISA 2015 Database, Table 5.6.

**StatLink** <http://dx.doi.org/10.1787/888933681806>

Figure 6.6 ■ Change between 2003 and 2015 in socio-economic difference between immigrant and native students



**Notes:** Results are displayed only for countries/economies that participated in PISA 2003 and PISA 2015 and have valid data for immigrant-native gaps in the ESCS index for both 2003 and 2015.

Statistically significant immigrant-native gaps are marked in a darker tone.

Statistically significant changes in ESCS gaps between immigrant and native students between 2015 and 2003 are shown next to country/economy names.

Countries and economies are ranked in descending order of the gap in ESCS between immigrant and native students in 2015.

**Source:** OECD, PISA 2015 and 2003 Databases, Table 6.3.

**StatLink** <http://dx.doi.org/10.1787/888933681825>

### Box 6.1. The *retornados* phenomenon in Portugal

Portugal is an interesting case when it comes to the socio-economic status of students with an immigrant background. Three findings, in particular, run counter to the general pattern observed in the countries and economies that participated in PISA 2015. First, both second-generation immigrants (i.e. those born in Portugal with two foreign-born parents) and native-born students of mixed heritage (i.e. those born in Portugal with one foreign-born parent and one parent who was born in Portugal) are more advantaged, on average, than native students. Second, differences in socio-economic status between native students and first-generation immigrant students (i.e. foreign-born students whose parents are also foreign-born) are not statistically significant. Third, returning foreign-born students (i.e. foreign-born students with at least one parent who was born in Portugal) are more disadvantaged than native students. These surprising results are illustrated in Figures 6.2, 6.3 and 6.4.

The phenomenon of *retornados* can help explain why both second-generation immigrant students and native students of mixed heritage are more advantaged than native students. The term *retornados* refers to the white Portuguese community living in the African colonies who were repatriated to Portugal in the months following those countries' independence in 1975. The exact number of *retornados* is unknown, but estimates range from 500 000 to 1 million, with 40% of them having been born in the colonies. A small number of the *retornados* did not return to Portugal immediately but moved mainly to Brazil and South Africa. However, most of these people ultimately returned to Portugal.

Portuguese students who participated in PISA 2015 are those whose parents were born around this period of decolonisation. Almost one in five of these students is either second-generation immigrant (3.3%) or native-born of mixed heritage (15%). Given the huge demographic impact of *retornados* in a country with a population of around nine million at the time they repatriated, most of these students are likely to have at least one parent of this generation.

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Most *retornados* suffered traumatic experiences and significant material losses when leaving the colonies, and social integration was difficult for many of them. However, their socio-economic integration in Portugal was a success. The *Instituto de Apoio ao Retorno de Nacionais* was a supervisory body created to facilitate economic support to *retornados* to compensate for their losses in the colonies and help them integrate and thrive in Portugal. Some measures of positive discrimination were implemented, including access to special credit conditions. In addition to this economic support, *retornados* had certain skills that were essential overseas that helped them achieve entrepreneurial success in Portugal too. These include self-initiative, self-reliance, leadership abilities, and social skills.

*Retornados* also had better qualifications than the Portuguese already in Portugal, which helped them gain access to the labour market. According to data from the 1981 census, one in three adults over the age of 30 in Portugal was illiterate, and only 2.3% of adults were university graduates. By contrast, 11% of *retornados* were university graduates. In addition, many of them had previously served in or had ties with the overseas administration. Consequently, up to 45 000 *retornados* were employed in the Portuguese public administration. This includes staff members of African universities who helped accelerate the creation of new universities in Portugal (Almeida, 2014; David, 2015; Pires, 2003; Rocha-Trinidade, 1995).

Overall, compared to the population already in Portugal, *retornados* were better qualified and achieved higher socio-economic status. This advantage is likely to have been passed on to their children, which would help explain some of the results observed in PISA 2015. For instance, Table 6.19 (available on line) shows that parents' of both second-generation immigrant students and native-born students of mixed heritage have higher educational attainment than the parents of native students. Similarly, Table 6.10 (available on line) reveals that the parents of the former two groups of students also have higher occupational status than the parents of native students. These differences in parents' education and occupational status explain why both second-generation immigrant students and native-born students of mixed heritage are more socio-economically advantaged than native students in Portugal.

The second singularity – that socio-economic differences between native and first-generation immigrant students are not statistically significant – can be explained by the increasing numbers of high-skilled workers who have been arriving in Portugal since the 1990s, particularly from East European countries, such as Ukraine, Moldova and Romania (Barganha and Fonseca, 2004). Indeed, Figure 6.17 shows that the level of parents' education is higher among first-generation immigrant students than among native students. Furthermore, Figure 6.18 shows that, despite parents' higher educational attainment, the occupational status among parents of first-generation immigrant students is lower than that among parents of native students. These results are in keeping with the findings of many studies that report on problems of over-qualification that affect most of these highly skilled immigrants in Portugal (eg. Alto Comissariado para as Migrações, 2016; Oliveira and Fonseca, 2013).

In addition, even though the number of university graduates in Portugal has grown over the past few decades (Barganha and Fonseca, 2004), it is not clear that this upskilling process has had a significant impact among the parents of native students, as defined by PISA. PISA's definition of native students does not include Portuguese-born students who have at least one parent from the *retornados* generation who was born in the colonies. As explained above, in 1981, there were five times as many university graduates among *retornados* as among the Portuguese population. Indeed, Table 6.19 (available on line) suggest that this socio-economic advantage was passed on to the succeeding generation.

The third finding that goes against the general pattern observed in PISA 2015 is that foreign-born students who have at least one Portuguese parent are of lower socio-economic status than native students. Only 2.7% of 15-year-old students in Portugal are returning foreign-born students. Tables 6.19 and 6.20 (available on line) suggest that the parents of returning foreign-born students have lower educational attainment, but higher occupational status, than the parents of native students.

To a certain extent, these results might be explained by the migration trends affecting Portugal over the past decades, especially the extensively reported inability of Portugal to woo back highly qualified emigrants. Traditionally, migration in Portugal has mainly involved low-skilled workers seeking better professional opportunities and living conditions elsewhere. In 1980, as many as nine in ten Portuguese

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emigrants aged 25 or older living in the top OECD destination countries were low skilled; only 3% were high skilled. In 2010, two out of three of these emigrants were low skilled, while 14% were high skilled. Most of the unqualified emigrants moved to France and, to a lesser extent, Germany. In the 2000s, there was a significant increase in migration to Spain, a country with a great demand for low-skilled workers in its then-booming construction sector. But that demand dried up in the wake of the economic crisis. The main destination for high-skilled workers over the past few decades has been Canada, France, Spain and the United States (Justino, 2016). Overall, these figures suggest that most of the five million Portuguese living outside of the country are low skilled. Furthermore, there is little evidence that the high-skilled workers who emigrated from Portugal in the past few decades are returning (Cerdeira et al., 2016). Thus, it is more likely that emigrants returning to Portugal will be the low-skilled workers who can no longer find work in the countries to which they – or they parents – first migrated.

The anomalies described above stem from the multiple migration flows that have affected Portugal in the past half-century, particularly the demographic and socio-economic impact of the *retornados* generation in Portugal. The migration of Portuguese citizens from the colonies to Portugal is interpreted as international migration in PISA, as the definition of natives excludes any student who was born in Portugal with at least one foreign-born parent from the *retornados* generation. *Retornados* were more socio-economically advantaged and better-integrated in the country. Their presence has had a significant and positive impact on the Portuguese education system that is still evident.

## Socio-economic status and the academic, social and emotional resilience of students with an immigrant background

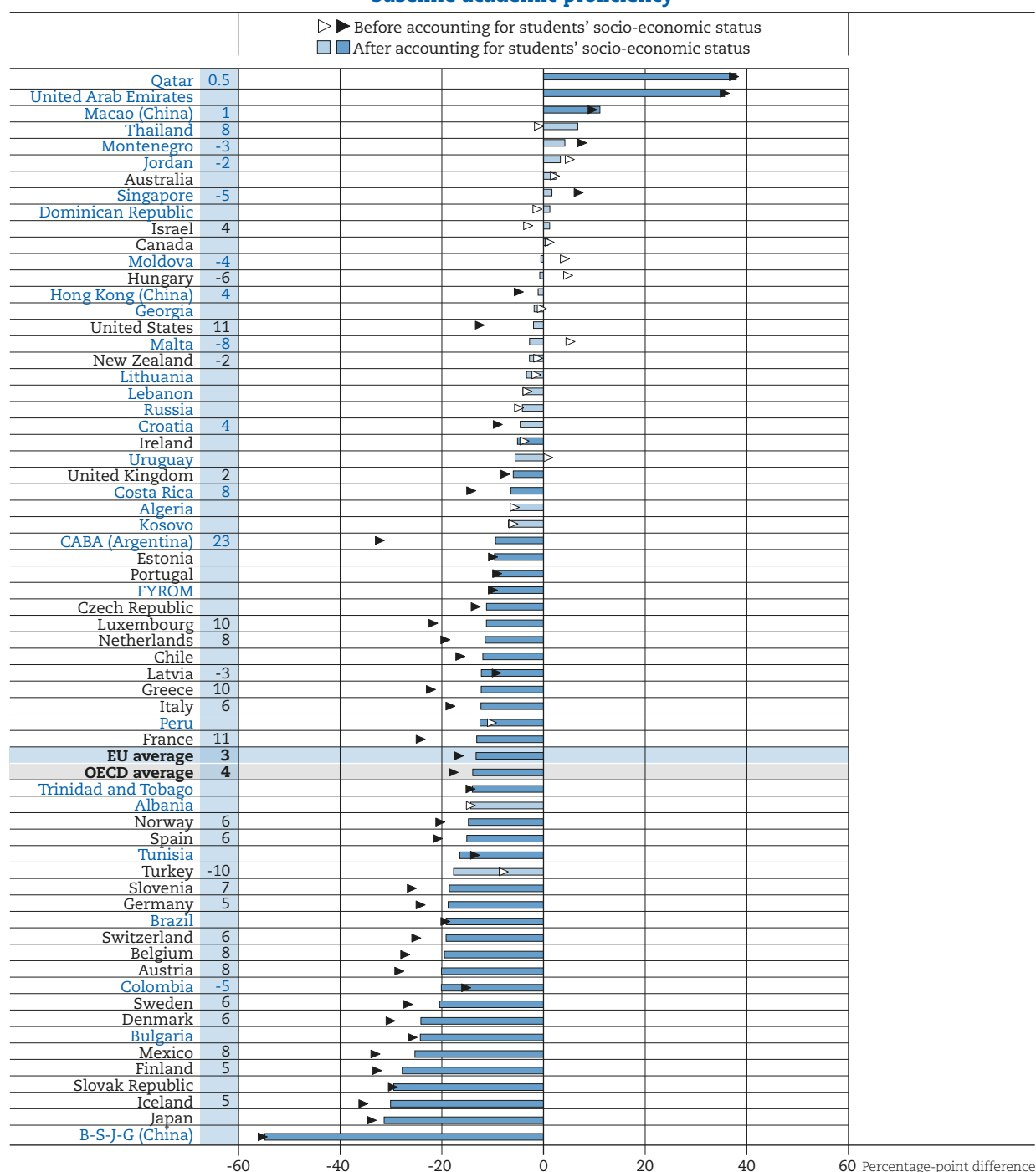
### Academic outcomes

PISA reveals that socio-economic status is an important mediating factor in the relationship between immigrant background and academic resilience. Figure 6.7 shows differences between native and immigrant students in the percentage of students who attained baseline levels of proficiency in the core PISA subjects,<sup>1</sup> before and after accounting for socio-economic status in PISA 2015. In 25 countries and economies, the gap between the two groups was considerably smaller after socio-economic differences are considered. This means that gaps in academic proficiency between the two groups of students were at least partly due to immigrant students being more socio-economically disadvantaged than native students.

Being disadvantaged is a risk factor for failing to attain baseline levels of academic performance in the three core PISA subjects. On average across OECD countries, the share of native students who attain such levels was 18 percentage points larger than the share of immigrant students who did so, before accounting for socio-economic status. The difference narrows to 14 percentage points when comparing native and immigrant students of similar socio-economic status. On average across EU countries, the gap was 17 percentage points and 13 percentage points after accounting for socio-economic status. In CABA (Argentina), France, Luxembourg and the United States, the difference between the two groups before and after accounting for socio-economic status was larger than 10 percentage points. In the United States, socio-economic status was particularly influential since the gap between the two groups becomes statistically non-significant after accounting for ESCS.

Socio-economic status also partly explains the achievement gaps observed between native students and immigrant students with at least one native-born parent (Table 6.7, available on line). As discussed earlier, returning foreign-born students tend to have a higher socio-economic status than native students, yet they lag behind in academic performance. In 2015 in 35 countries and economies, the difference between native students and immigrant students with at least one native-born parent in the probability of attaining baseline levels of performance in the core PISA subjects widened after accounting for socio-economic status (Table 6.7). In Canada, Denmark, Estonia, France, Latvia, Lithuania, Montenegro, the Netherlands, Peru, Spain and Tunisia, the gap became negative and statistically significant after accounting for socio-economic status. Results indicate that the socio-economic advantage observed among returning foreign-born students mitigates the adverse effects of an immigrant background on academic performance, and thus reduces the difference in performance compared with native students. In several countries, accounting for the impact of socio-economic status isolates the penalty for having an immigrant background among returning foreign-born students and gives a better sense of the magnitude of that penalty.

Figure 6.7 ■ Difference between immigrant and native students in attaining baseline academic proficiency



**Notes:** Only countries/economies with valid data on the immigrant-native gap in attaining baseline academic proficiency are shown.

Statistically significant differences are marked in a darker tone.

Only students with non-missing values on PISA index of economic, social and cultural status (ESCS) index are considered.

Statistically significant differences in the immigrant-native gap after and before accounting for socio-economic status are shown next to country/economy names.

Students who attain baseline academic proficiency are students who reach at least PISA proficiency level two in all three PISA core subjects – math, reading and science.

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 socio-economic status.

**Source:** OECD, PISA 2015 Database, Table 6.5.

**StatLink** <http://dx.doi.org/10.1787/888933681844>

Box 6.2. **Socio-economic status and performance gaps between native and immigrant students in the United States**

**Socio-economic status and performance gaps in the United States**

The percentage of students reaching baseline levels of performance in PISA's core domains – science, reading and mathematics – is considerably lower among immigrant students (comprising first- and second-generation) than among students without an immigrant background (comprising native-born students of native-born parents) in most countries and economies that participated in PISA 2015. Nevertheless, in the majority of these countries and economies, this gap shrinks when the socio-economic status of the student is taken into account (see Figure 6.7). This “adjustment” leads to particularly significant reductions in performance differences in Ciudad Autónoma de Buenos Aires (Argentina) (hereafter “CABA [Argentina]”), France, Greece, Luxembourg and the United States. While in many countries other groups of students with an immigrant background – returning foreign-born students and students of mixed heritage – also suffer from a lower likelihood of reaching baseline levels of academic proficiency, differences in socio-economic status do not explain performance differences between these two groups of students, on the one hand, and students without an immigrant background, on the other (Table 6.7 available on line). However, the United States is the only country among those cited above where, after accounting for socio-economic status, performance differences between immigrant students and students without an immigrant background become statistically not significant.

There are two possible explanations for this. The first refers to the magnitude of the difference in socio-economic status between immigrant students and students without an immigrant background. In the United States, this difference is one of the largest observed in PISA 2015 (Table 6.3 available on line). As a result, when socio-economic status is accounted for, the disparity is larger too. Figure 6.2 shows that, compared to the OECD average, the socio-economic gap between native and first-generation immigrant students is almost three times greater in the United States, exceeded only by that in Turkey and CABA (Argentina).

While it is not possible, using PISA data, to explain why socio-economic status plays such a large role in determining the difference in the likelihood that immigrant students and students without an immigrant background will attain baseline levels of academic proficiency, it is possible to identify some of the specificities of the United States context that might contribute to this result. First, the expansion of access to post-secondary education occurred earlier in the United States than in most other countries; and the parents of immigrant students in the United States tend to come from countries where this expansion happened more recently (Schofer and Meyer, 2005). The effect of this circumstance could also be stronger than in Australia, Canada and New Zealand, for example, because immigration policies in the United States do not necessarily favour better-qualified immigrants (OECD, 2012). These factors might contribute to the findings highlighted in Figure 6.17, which shows that, in the United States, the difference in parents' educational attainment between immigrant students and students without an immigrant background is five times greater than the OECD average, exceeded only by that observed in CABA (Argentina). Given the importance educational attainment plays in shaping adults' labour market outcomes, differences between the two groups in parents' occupational status are also large. Figure 6.18 shows that this gap is almost twice as wide as the OECD average and is among the largest observed among the countries and economies that participated in PISA 2015.

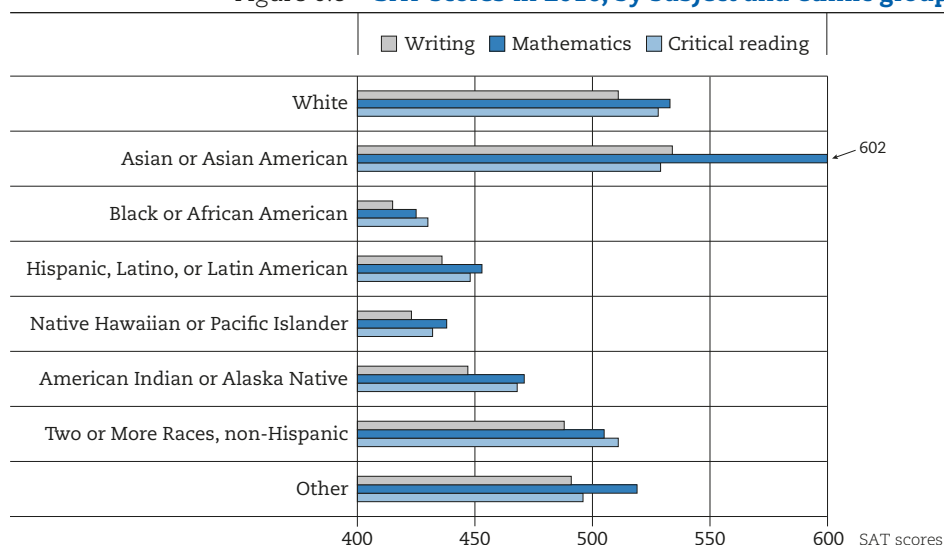
A second possible reason why the performance gap between immigrant students and students without an immigrant background is relatively small in the United States (even before socio-economic status differences are considered) is that some groups of students without an immigrant background, such as Black Americans and Native Americans tend to perform lower than average while some immigrant students, such as Asian Americans, tend to perform higher than average (CEPA, n.d.; College Board, 2016; Hsin and Xie 2014; Lee and Zhou, 2017; Liu and Xie, 2016; Noguera, 2003; Zong and Batalova, 2016).

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Unfortunately, since PISA data do not contain information on students' ethnicity it is not possible to test differences between these groups of students and immigrant students using PISA data; but research conducted in the United States based on national data suggests that these factors might play a role in explaining the results observed in PISA that are unique to the United States.

Some of the differences in academic performance between distinct ethnic groups in the United States, which cannot be measured by PISA, are illustrated in Figure 6.8. The figure shows differences in SAT scores (i.e. a standardised test widely used for college admissions in the United States) among secondary school students. It is important to note that while both tests are anonymous, the SAT test differs considerably from the PISA test both in the type of questions asked and relevance for students. Since SAT scores have an important bearing on college admissions, the stakes are considerably higher than they are in PISA, which has no consequences for the individual student.

Figure 6.8 ■ SAT scores in 2016, by subject and ethnic group



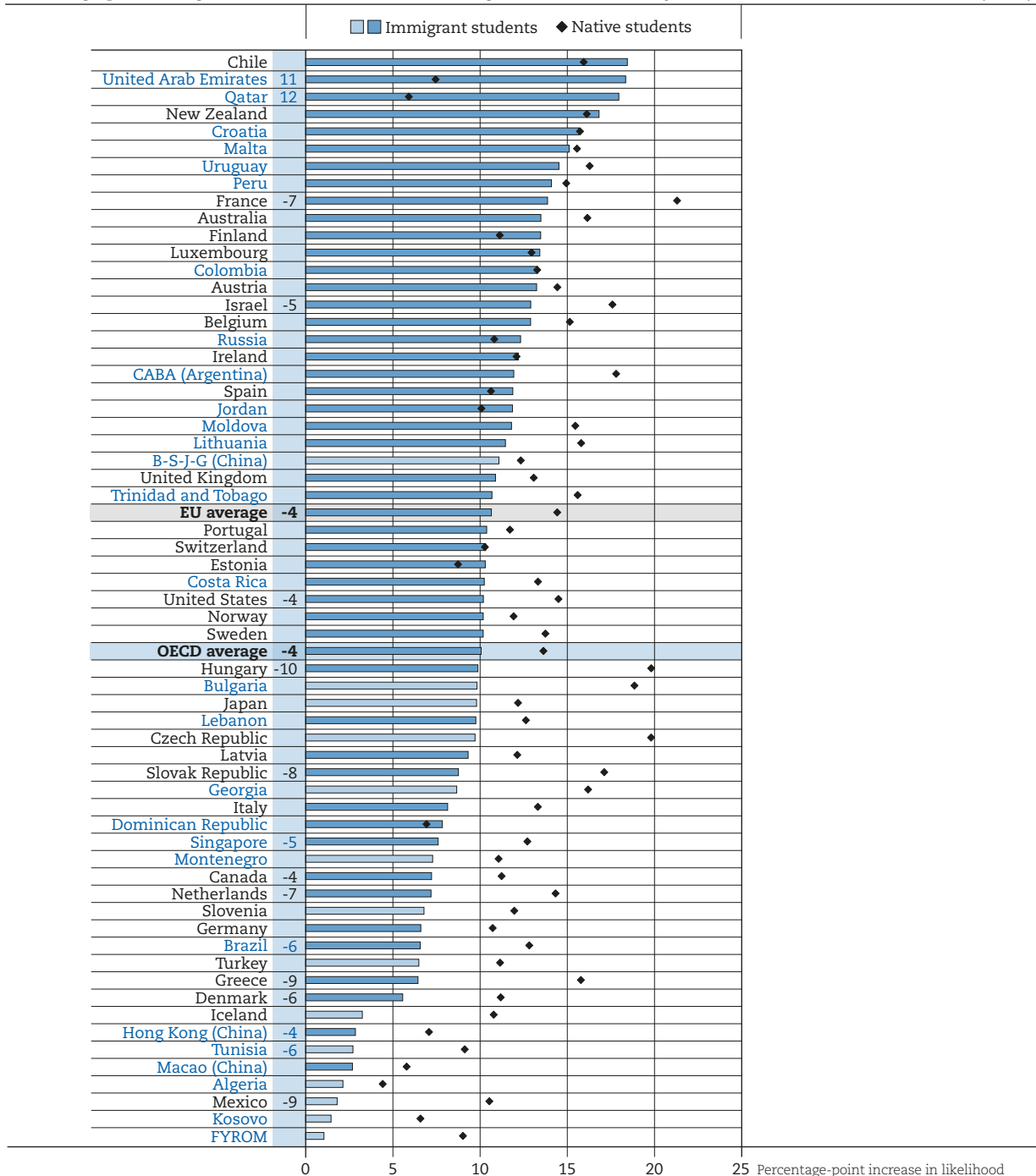
Source: College Board, 2016 College-Bound Seniors.

StatLink  <http://dx.doi.org/10.1787/888933681863>

On average, PISA consistently finds a strong relationship between socio-economic status and academic performance (PISA, 2016a). But because of the combined effect of other risk and protective factors, or unobserved factors related to having an immigrant background, the impact of socio-economic status on academic achievement might not be equally strong among native students and students with an immigrant background. Figure 6.9 plots the marginal effect of socio-economic status on the probability of attaining baseline levels of performance in the core PISA subjects among native and immigrant students (results for all groups of students with an immigrant background can be found in Table 6.7 available on line). On average in 2015 across OECD countries, an increase in the ESCS index of one standard deviation was associated with a higher likelihood of achieving baseline proficiency in all core PISA subjects, which corresponded to 14 percentage points among native students but by only 10 percentage points among immigrant students. In Brazil, Denmark, France, Greece, Hungary, Mexico, the Netherlands, Singapore, the Slovak Republic and Tunisia, the marginal effect of socio-economic status on academic performance was smaller among immigrant students by more than 5 percentage points. In these countries, immigrant students appear to be at a double disadvantage: they tend to be of relatively low socio-economic status in the host country, but even when they are somewhat more advantaged, the impact of that higher socio-economic status on their performance is weaker than it is among native students.

Figure 6.9 ■ **Change in the likelihood of attaining baseline academic proficiency related to socio-economic status, by immigrant background**

Percentage-point change associated with a one-unit change in the PISA index of economic, social and cultural status (ESCS)



**Notes:** Statistically significant differences are marked in a darker tone.

Only countries with valid data on the marginal effect of socio-economic status on the likelihood of attaining baseline academic proficiency for immigrant students are shown.

Statistically significant differences between immigrant and native students in the marginal effect of socio-economic status on the likelihood of attaining baseline academic proficiency are shown next to country/economy names. For the OECD and EU averages, this number refers only to the subset of countries/economies with valid information on both groups of students.

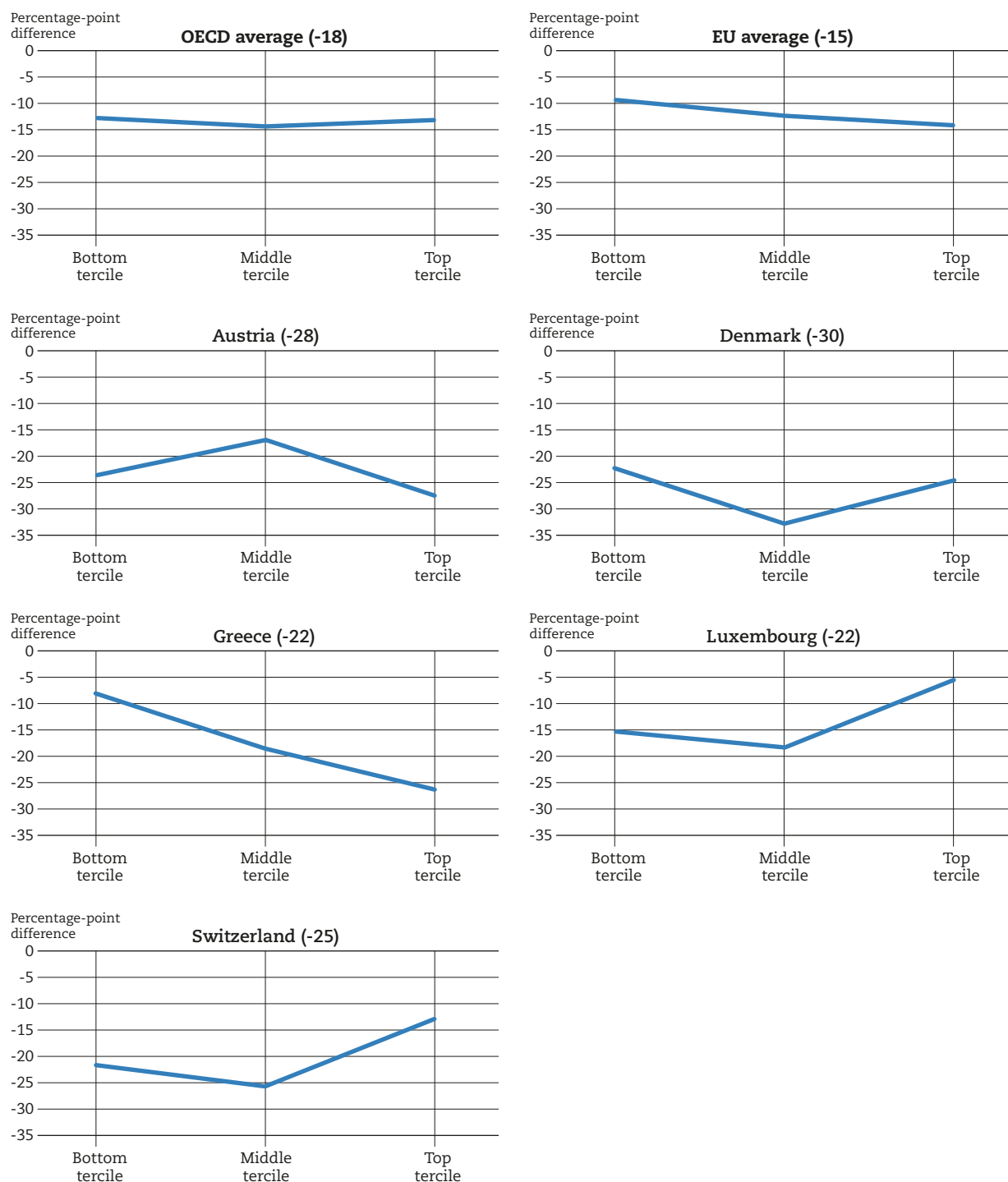
Countries and economies are ranked in descending order of the marginal effect of ESCS on the probability of attaining baseline proficiency among immigrant students.

**Source:** OECD, PISA 2015 Database, Table 6.5.

**StatLink** <http://dx.doi.org/10.1787/888933681882>



Figure 6.10 ■ Difference between immigrant and native students in attaining baseline academic proficiency, by socio-economic tercile



**Notes:** The average difference in the percentage of immigrant and native students attaining baseline academic proficiency is shown next to country/economy names.

Students who attain baseline academic proficiency are students who reach at least PISA proficiency level two in all three PISA core subjects – math, reading and science.

Only students with non-missing values on the PISA index of economic, social and cultural status ESCS are considered.

All immigrant-native gaps reported are statistically significant.

**Source:** OECD, PISA 2015 Database, Table 6.8.

**StatLink** <http://dx.doi.org/10.1787/888933681901>

The analyses presented thus far have focused on the average effects of socio-economic status in the relationship between immigrant background and academic achievement. However, as shown in Figure 6.9, in a number of countries and economies, immigrant background and socio-economic status interact significantly, implying that differences in performance between native and immigrant students could differ even across groups of students with a similar socio-economic status. Table 6.8 (available on line) shows differences in the percentage of students who attain baseline levels of proficiency between these two groups of students by tercile of socio-economic status within each PISA-participating country and economy. Students were divided into terciles in order to guarantee sufficiently large sample sizes to carry out the desired analyses. While some clear trends are observed in the data, because of sample-size issues, differences across terciles are generally not statistically significant. Figure 6.10 shows the results for selected countries where some of the differences across terciles are large enough to be statistically significant despite large standard errors. The numbers shown next to country names are average differences between native and immigrant students.

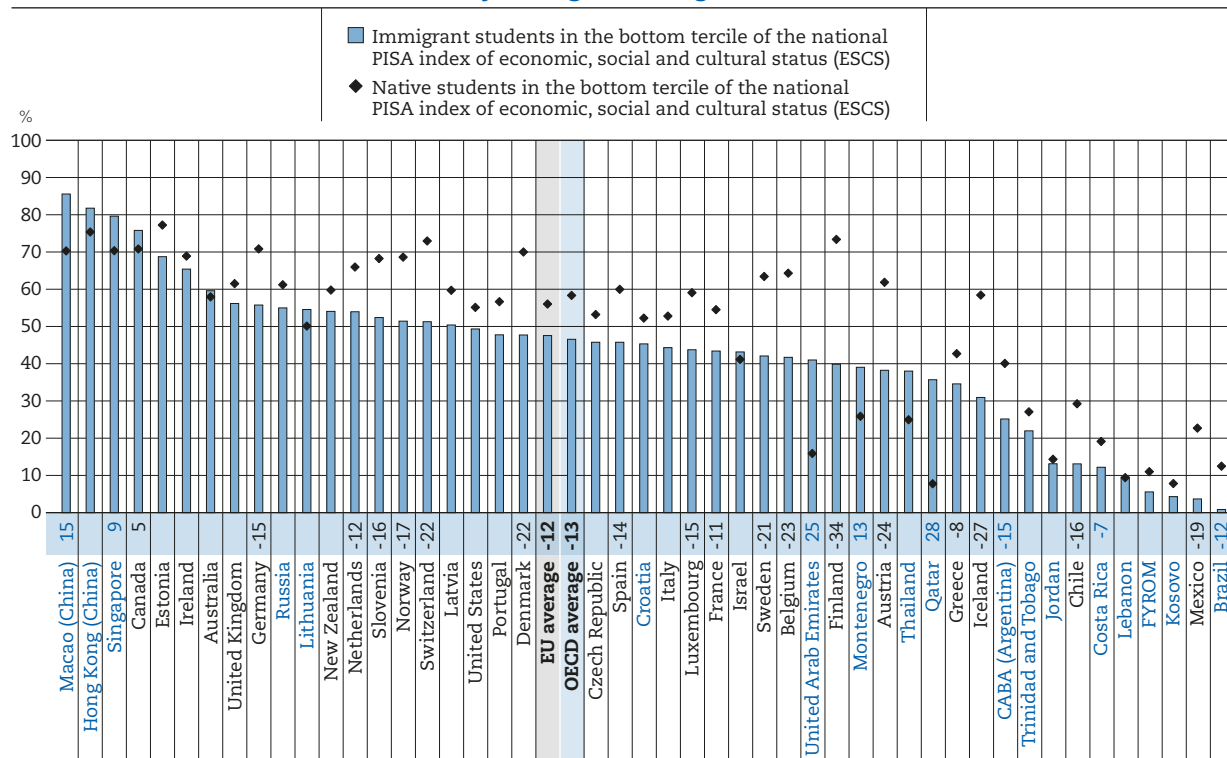
In most countries and economies, the difference between the percentage of native students and immigrant students attaining baseline levels of performance in the core PISA subjects was widest among students in the middle portion of the socio-economic distribution. On average across OECD countries, the gap was 3 percentage points larger in the middle tercile compared to the bottom tercile, and not statistically significant from the gap in the top tercile. In Denmark, Luxembourg and Switzerland, the difference was also largest in the middle group; however, differences across terciles were significantly more pronounced than on average across OECD countries. In Luxembourg and Switzerland, the penalty related to an immigrant background was significantly smaller at the top of the socio-economic distribution and most pronounced in the middle tercile. In both countries, there was a 13 percentage-point difference between the gap at the top and the middle of the distribution. By contrast, in Denmark, the gap was smallest at the bottom of the distribution (although there was no statistically significant difference compared to the gap at the top of the distribution) and was largest in the middle tercile.

The likely explanation for these common patterns is that socio-economic status is a strong predictor of academic achievement, thus extreme values on the ESCS index limit or enhance students' chances of reaching baseline academic proficiency. Socio-economically disadvantaged students might already face so many constraints that being an immigrant alters only slightly their chances of being academically resilient, while advantaged students might already benefit from certain privileges that being an immigrant has little impact on their academic performance. As a result, performance gaps between native and immigrant students are largest at the middle of the socio-economic distribution, where students' performance is most varied and not as affected by their socio-economic status.

In another set of countries and economies, including Austria, Brazil (not represented) and Greece, the difference between the percentage of native students and immigrant students attaining baseline levels of performance in the core PISA subjects was largest in the top tercile of the socio-economic distribution. In Greece, the difference grew as the socio-economic status of the group considered rose, so that the gap between native and immigrant students within the top tercile was 18 percentage points larger than the gap at the bottom of the distribution. Conversely, in Austria, the difference was smallest among students in the middle tercile of the socio-economic distribution, followed by the gap among students in the bottom tercile and then the gap in the top tercile. There was a statistically significant difference of 11 percentage points in the gaps between native and immigrant students when comparing the top and middle terciles.

Another way to gain insights into how an immigrant background can affect student performance is to compare the outcomes of native and immigrant students of different socio-economic status. Comparing socio-economically disadvantaged native students to more privileged immigrant students can shed light on the relative importance of the adversity that stems from being an immigrant or being socio-economically disadvantaged. Figure 6.11 compares the percentage of students attaining baseline proficiency among native students in the lowest tercile of the national socio-economic distribution, and among immigrant students in the lowest and top terciles of the distribution.

Figure 6.11a ■ Disadvantaged students attaining baseline academic proficiency, by immigrant background



**Notes:** Only countries with valid estimates for immigrant students in the bottom tercile of the national ESCS distribution are shown.

Only students with non-missing values on PISA index of economic, social and cultural status (ESCS) index are considered.

Statistically significant differences between disadvantaged immigrant and native students in the percentage of students attaining baseline academic proficiency are shown next to country/economy names. For the OECD and EU averages, this number refers only to the subset of countries/economies with valid information on both groups of students.

Students who attain baseline academic proficiency are students who reach at least PISA proficiency level two in all three PISA core subjects – math, reading and science.

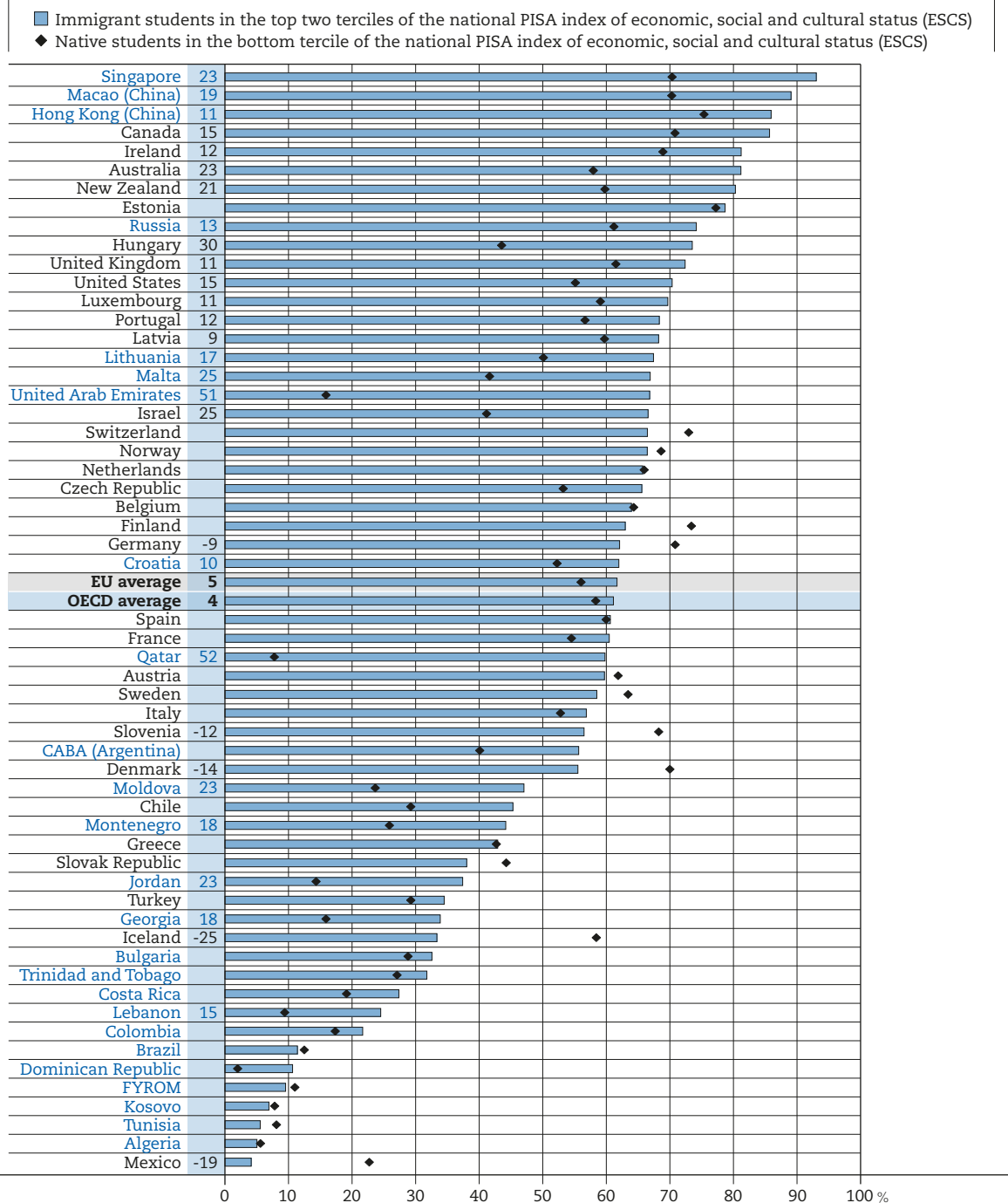
Countries and economies are ranked in descending order of the percentage of immigrant students in the bottom tercile of the national ESCS distribution attaining baseline proficiency.

**Source:** OECD, PISA 2015 Database, Table 6.9.

**StatLink** <http://dx.doi.org/10.1787/888933681920>

Figure 6.11a shows that, even though differences in academic resilience between native and immigrant students are larger in the middle and top terciles of the socio-economic distribution, in several countries, they are remarkably large in the bottom tercile too. On average across OECD countries, among students in the bottom tercile of national socio-economic status, the share of native students who attain baseline academic proficiency was about 13 percentage points larger than the share of immigrant students who did. But in Austria, Belgium, Denmark, Finland, Iceland, Sweden and Switzerland, the difference between the two groups was larger than 20 percentage points.

Figure 6.11b compares native students in the bottom tercile of socio-economic status with immigrant students in the middle and the upper terciles. The data show that economic advantage might not be enough to compensate for the penalty of having an immigrant background. In 27 of 57 countries and economies with available data, there was no statistically significant difference in the percentage of students reaching baseline academic performance across the two groups considered. In Denmark, Germany, Iceland, Mexico and Slovenia, advantaged immigrant students were less likely than disadvantaged native students to attain baseline proficiency. In all of these countries, the difference between the two groups, in favour of the latter, was larger than 8 percentage points. This evidence suggests that, in several PISA-participating countries and economies, having an immigrant background represents a greater obstacle to academic achievement than socio-economic disadvantage.

Figure 6.11b ■ **Attaining baseline academic proficiency, by immigrant background and socio-economic status**

**Notes:** Only countries with valid estimates for immigrant students in the top two terciles of the national ESCS distribution are shown.

Only students with non-missing values on PISA index of economic, social and cultural status (ESCS) index are considered.

Statistically significant differences between immigrant students in the top two terciles of the national ESCS distribution and native students in the bottom tercile of the national ESCS distribution in the percentage of students attaining baseline academic proficiency are shown next to country/economy names. For the OECD and EU averages, this number refers only to the subset of countries/economies with valid information on both groups of students.

Students who attain baseline academic proficiency are students who reach at least PISA proficiency level two in all three PISA core subjects – math, reading and science.

Countries and economies are ranked in descending order of the percentage of immigrant students in the top two terciles of national ESCS distributions attaining baseline proficiency.

**Source:** OECD, PISA 2015 Database, Table 6.9.

**StatLink** <http://dx.doi.org/10.1787/888933681939>

Box 6.3. **The impact on proficiency of immigrant background and socio-economic status at different levels of science performance**

PISA shows that there are significant differences between native and students with an immigrant background in the percentage of students who attain the baseline level of proficiency in all core PISA domains, and that socio-economic status is one of the variables that explain such differences. The academic outcome variable developed for this report focuses on a specific part of the distribution of academic results within each country/economy, and the methods used in the analysis report average effects. However, the penalty associated with an immigrant background, and the extent to which socio-economic status contributes to it, is likely to vary significantly at different levels of the performance distribution in each country/economy. Quantile regressions, rather than standard linear regressions, are used below to investigate such differences. Specifically, differences in sciences scores between native and immigrant students are computed for three different percentiles (10th, 50th and 90th) of the distribution of science scores within each country/economy, before and after accounting for socio-economic status.

Since the outcome variable used throughout most of this report is binary, it cannot be used for this analysis; therefore, one of the PISA domains had to be selected. Science was chosen because it was the main domain in the PISA 2015 round and because, compared to reading and mathematics, it represents a middle ground in terms of the language skills required to complete the test (with reading requiring the highest and math the lowest). Science scores are also highly correlated with results in the other core domains and with the academic outcome variable used in this report.

Figure 6.12 shows that differences in science performance between native and immigrant students vary significantly across the distribution of scores, and countries show markedly different patterns of variation. In most countries and economies, these differences are largest at the median of the distribution, so that plotting the differences results in a U-shaped curve, as shown for Austria, Belgium, Denmark and Norway. In Belgium and Denmark, the second largest difference was observed among the lowest-achieving students (i.e. those at the 10th percentile of the science performance distribution). In Denmark especially, the gap among students in the lowest decile was similar to that among students at the median (73 and 77 score points, respectively) and significantly smaller than the gap at the top decile (50 points).

By contrast, in Austria the performance difference between native and immigrant students was larger among the highest-achieving students (i.e. those at the 90th percentile of the performance distribution) than among the lowest-achieving students. Although the plot line for Norway is also U-shaped, it is almost flat because the differences between native and immigrant students did not vary greatly across the performance distribution. In another set of countries, the plot line is downward-sloping, as shown in the graphs for Estonia and Mexico. In these cases, the performance differences between native and immigrant students increase as students' proficiency increases, such that the penalty of having an immigrant background was greatest among the highest-achieving students.

In most countries, accounting for socio-economic status shrinks the performance gap between native and immigrant students and reduces the difference between the gaps at the various levels of performance. This is seen, graphically, as an upward shift and flattening of the plotted curves. Furthermore, in most countries and economies the effect of socio-economic status is greater among the median and highest-achieving students, compared to the lowest-achieving students. This is particularly evident in Denmark and Mexico, where the change in the performance gap among students in the bottom tenth percentile was marginal.

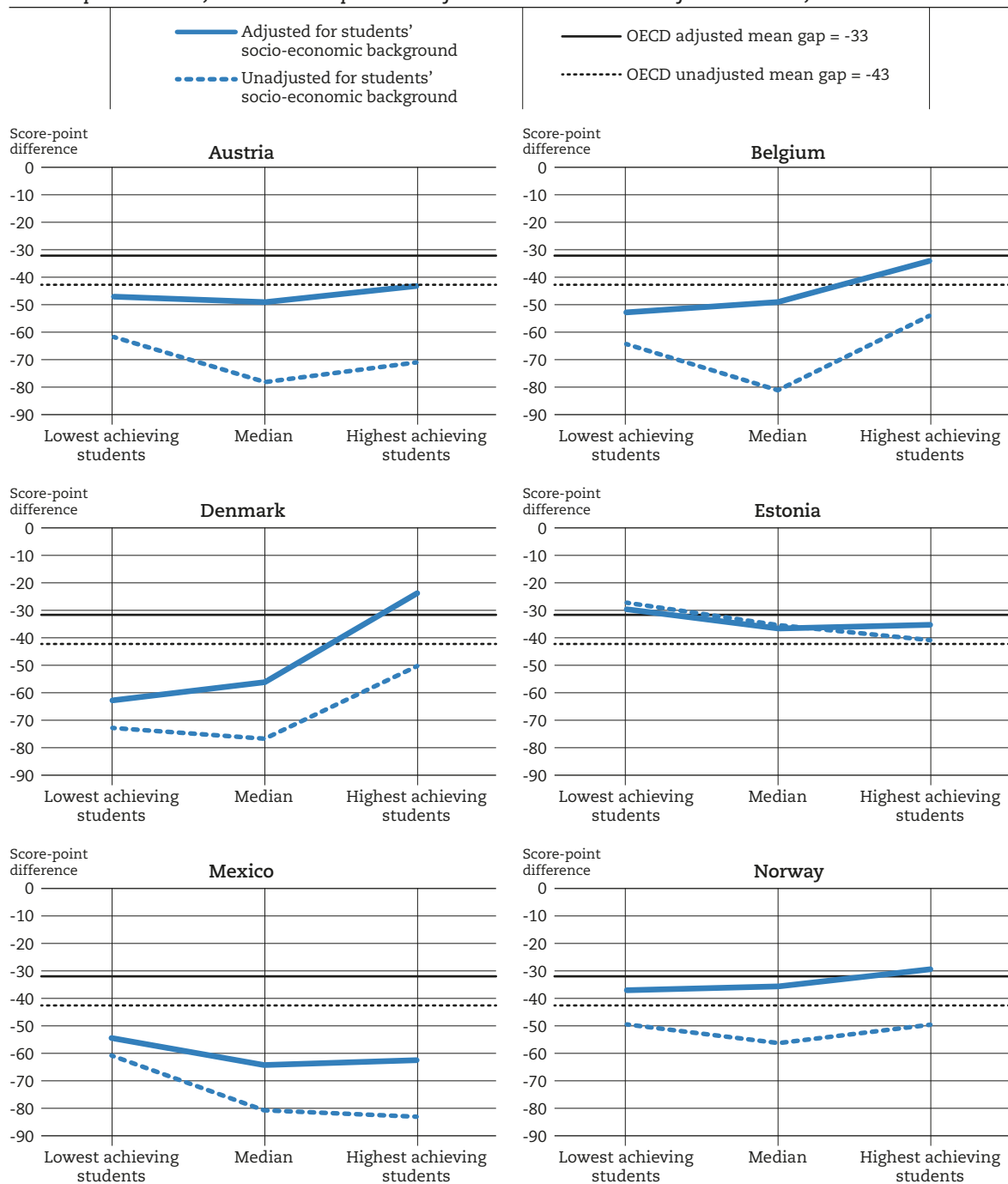
Despite some similarities, the impact of socio-economic status on these performance gaps differs significantly across countries. In Austria, Mexico and Norway, accounting for socio-economic status does not completely alter the shape of the plotted curve but just flattens it, reducing differences across the performance deciles. By contrast, in Belgium and Denmark, the curves change from a U-shape to an upward slope, meaning that the performance gap becomes largest among the lowest-achieving students.

In Estonia, accounting for socio-economic status has a remarkably small impact on the performance gap between native and immigrant students. The gap widens among the lowest-achieving students, narrows among the highest-achieving students and remains unaltered at the median. As a result, the curve changes from a downward slope to a U-shape.

...



Figure 6.12 ■ Immigrant-native gaps in science results across the distribution of scores  
Gaps at the 10th, 50th and 90th percentiles of the national distribution of science scores, selected countries



**Notes:** All data reported is statistically significant.

Lowest-achieving students are those within the lowest decile of the national distribution of science scores; highest-achieving students are those within the highest decile of the national distribution of science scores.

Unadjusted gaps are gross gaps between immigrant and native students, while adjusted gaps account for the socio-economic status of the two groups of students. Only students with non-missing values on the PISA index of economic, social and cultural status (ESCS) are considered.

Results were obtained through quantile regressions.

**Source:** OECD, PISA 2015 Database, Table 6.10.

**StatLink** <http://dx.doi.org/10.1787/888933681958>

### Social and emotional well-being

Tables 6.11 to 6.18 (available on line) show that socio-economic status is a statistically significant predictor of social, emotional and emotivational well-being in the majority of countries and economies with available data. Nevertheless, the correlation is markedly weaker than that between socio-economic status and academic performance. On average in 2015 across OECD countries, a one standard-deviation increase in socio-economic status led to a 14 percentage-point increase in the likelihood of attaining baseline academic proficiency; but a similar rise in socio-economic status was linked with only a 3-5 percentage-point increase in the likelihood of students feeling like they belong at school, feeling satisfied with life or reporting low levels of anxiety. However, since differences in well-being outcomes between native and immigrant students tend to be narrower than gaps in academic achievement, lower socio-economic status still explained a significant part of immigrants' disadvantage in well-being.

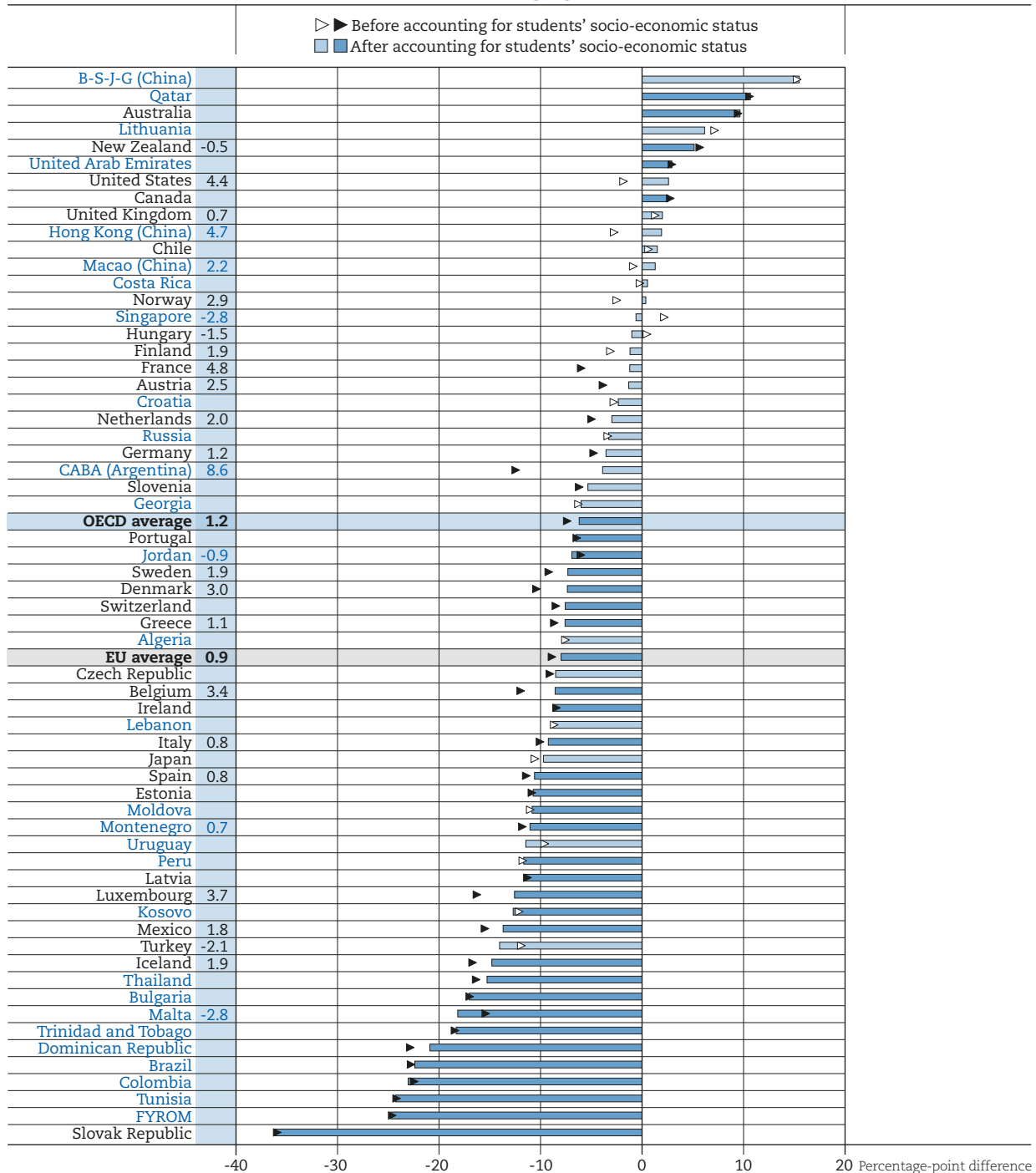
Figure 6.13 confirms that socio-economic disadvantage is one of the factors that explain the gap between native and immigrant students in the percentage of students who report a sense of belonging at school.<sup>2</sup> In 20 countries and economies, this gap shrank after accounting for socio-economic status. Across OECD countries, the gap shrank by around 1 percentage point (from approximately 7% to 6%); in Belgium, CABA (Argentina), Denmark, France, Hong Kong (China), Luxembourg and the United States, the gap shrank by more than three percentage points. In CABA (Argentina) and France, the reduction was such that the gap between native and immigrant students was not statistically significant, while in Belgium, Denmark and Luxembourg, the decrease of about 3 percentage points represented only a small part of the gaps observed before accounting for socio-economic status, all of which were considerably larger than 10 percentage points.

Figure 6.14 reveals that in 14 countries and economies, the impact of socio-economic status on the probability of students feeling that they belong at school was stronger among native students than among immigrant students (first- and second-generation). Across OECD countries, a one standard-deviation increase in socio-economic status led to a five percentage-point higher probability of reporting a sense of belonging and integration among native students, but only a 2.7 percentage-point higher probability of so reporting among immigrant students. In Brazil, Denmark, France, Greece, Ireland, the Netherlands, New Zealand, Norway and Switzerland, higher socio-economic status increased the likelihood of reporting a sense of belonging at school among native students but had no statistically significant effect among immigrant students. In France, this is likely because small samples inflated standard errors; in the other countries, the estimates were close to zero or even negative.

PISA 2015 finds a strong correlation between family wealth and life satisfaction across most countries (OECD, 2017). Figure 6.15 shows that socio-economic disparities partly explain the difference in the percentages of native and immigrant students who reported being satisfied with their life.<sup>3</sup> In 18 countries and economies, this difference shrank after accounting for socio-economic status. On average across OECD countries, the gap narrowed from 5.9 to 4.7 percentage points. In Austria, Iceland, Hong Kong (China), Luxembourg and the United States, the difference between the percentage of native and immigrant students who reported being satisfied with their life was reduced by more than three percentage points after accounting for socio-economic status. In the United States, socio-economic status played a particularly significant role, since the adjusted gap was close to zero and not statistically significant.

PISA shows that, in most countries and economies, the effect of socio-economic status on schoolwork-related anxiety tends to be weaker than its impact on other measures of well-being (Table 6.15, available on line). Results also indicate that the difference in the percentages of native and immigrant students who reported low levels of anxiety<sup>4</sup> was large compared to those of other well-being outcomes (Table 6.15). Figure 6.16 shows that in Austria, Finland, France, Germany, Japan, Luxembourg, Mexico, Sweden, Switzerland and Tunisia, the difference in the percentages of native and immigrant students who reported low schoolwork-related anxiety was larger than 10 percentage points. After accounting for socio-economic status, this difference was reduced by only 1.8 to 3.6 percentage points. Evidence shows that socio-economic status explains only a small part of immigrants' relatively higher schoolwork-related anxiety.

Figure 6.13 ■ Difference between immigrant and native students in reporting a sense of belonging at school



**Notes:** Statistically significant differences are marked in a darker tone.

Only countries/economies with valid data on the immigrant-native gap in reporting a sense of belonging at school are shown.

Students who reported 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”.

Only students with non-missing values on PISA index of economic, social and cultural status (ESCS) index are considered.

Statistically significant differences in the immigrant-native gap after and before accounting for socio-economic status are shown next to country/economy names.

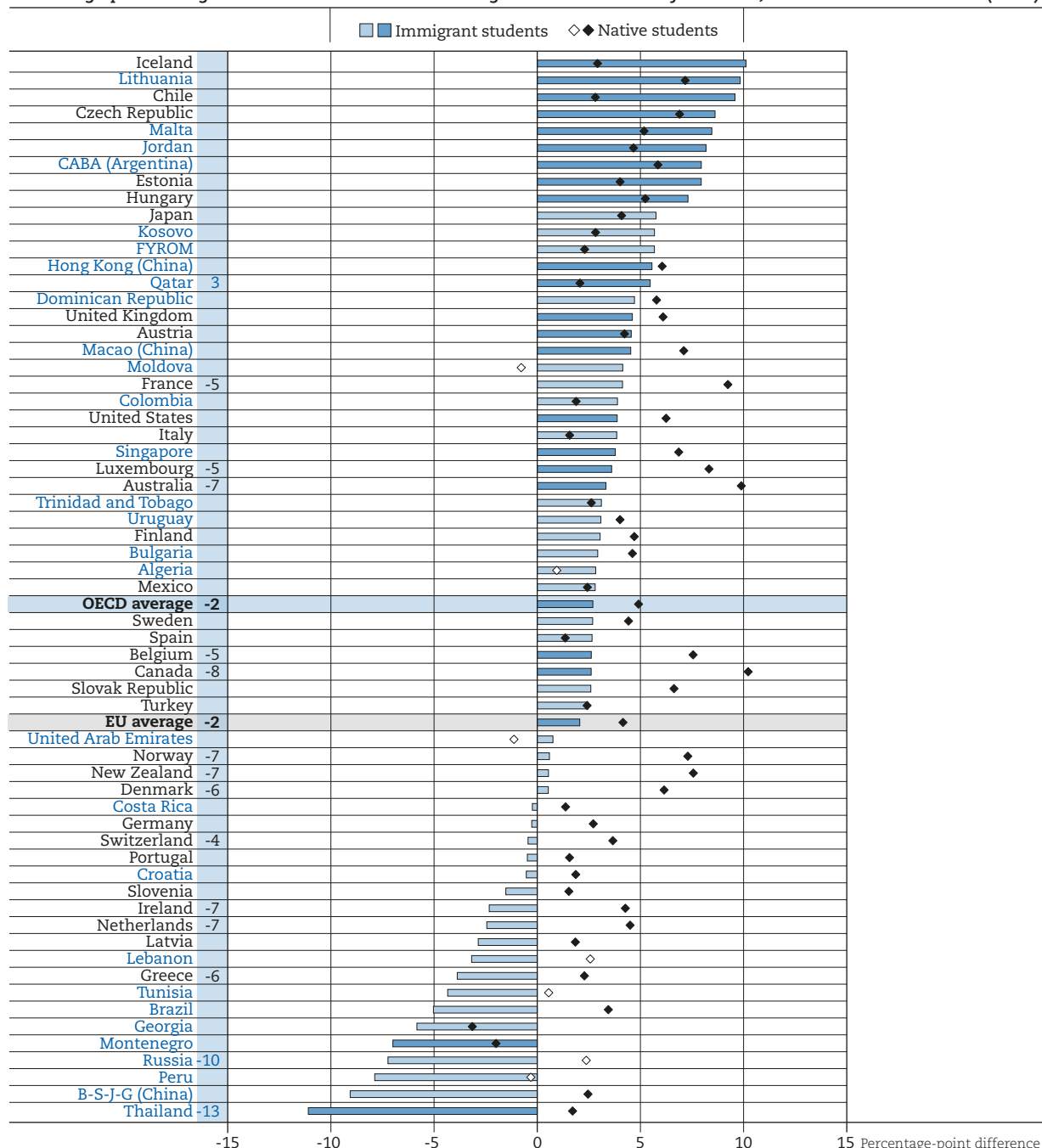
Countries and economies are ranked in descending order of the percentage-point difference between immigrant and native students in the percentage of students reporting a sense of belonging at school after accounting for socio-economic status.

**Source:** OECD, PISA 2015 Database, Table 6.11.

**StatLink** <http://dx.doi.org/10.1787/888933681977>

Figure 6.14 ■ **Change in the likelihood of reporting a sense of belonging at school related to socio-economic status, by immigrant background**

Percentage-point change associated with a one-unit change in the PISA index of economic, social and cultural status (ESCS)



**Notes:** Statistically significant differences are marked in a darker tone.

Only countries with valid data on the marginal effect of socio-economic status on the likelihood of reporting a sense of belonging for immigrant students are shown.

Statistically significant differences between immigrant and native students in the marginal effect of socio-economic status on the likelihood of feeling a sense of belonging at school are shown next to country/economy names. For the OECD and EU averages, this number refers only to the subset of countries/economies with valid information on both groups of students.

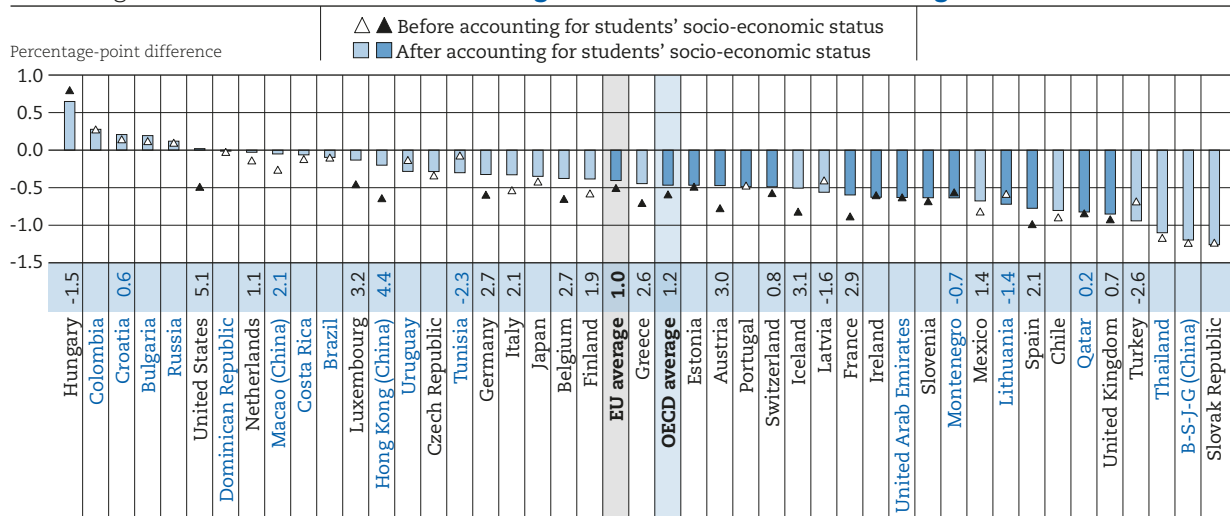
Students who reported a sense of belonging at school are those who reported that they “agree” or “strongly agree” with the statement “I feel like I belong at school” and “disagree” or “strongly disagree” with the statement “I feel like an outsider at school”.

Countries and economies are ranked in descending order of the marginal effect of ESCS on the probability of reporting a sense of belonging at school for immigrant students.

**Source:** OECD, PISA 2015 Database, Table 6.11.

**StatLink** <http://dx.doi.org/10.1787/888933681996>

Figure 6.15 ■ Difference between immigrant and native students in feeling satisfied with life



**Notes:** Statistically significant differences are marked in a darker tone.

Only countries/economies with valid data on the immigrant-native gap in reporting being satisfied with life are shown.

Students who report being satisfied with life are students who reported a life satisfaction of 7 or above on a scale from 0 to 10.

Only students with non-missing values on PISA index of economic, social and cultural status (ESCS) are considered.

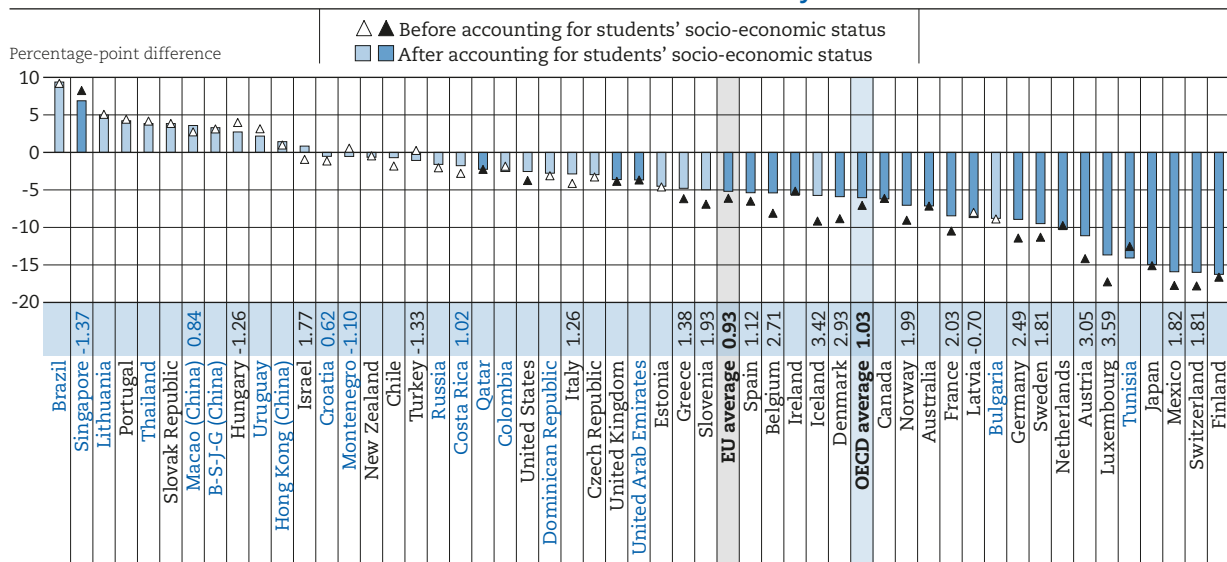
Statistically significant differences in the immigrant-native gap after and before accounting for socio-economic status are shown next to country/economy names.

Countries and economies are ranked in descending order of the percentage-point difference between immigrant and native students in the percentage of students who reported being satisfied with life, after accounting for socio-economic status.

**Source:** OECD, PISA 2015 Database, Table 6.13.

**StatLink** <http://dx.doi.org/10.1787/888933682015>

Figure 6.16 ■ Difference between immigrant and native students in reporting low schoolwork-related anxiety



**Notes:** Statistically significant differences are marked in a darker tone.

Only countries/economies with valid data on the immigrant-native gap in reporting low schoolwork-related anxiety are shown.

Students who report low schoolwork-related anxiety are students who reported that they “disagree” or “strongly disagree” with the statements “I often worry that it will be difficult for me taking a test” and “Even if I am well prepared for a test, I feel very anxious”.

Only students with non-missing values on PISA index of economic, social and cultural status (ESCS) are considered.

Statistically significant differences in the immigrant-native gap after and before accounting for socio-economic status are shown next to country/economy names.

Countries and economies are ranked in descending order of the percentage-point difference between immigrant and native students in the percentage of students reporting low schoolwork-related anxiety, after accounting for socio-economic status.

**Source:** OECD, PISA 2015 Database, Table 6.15.

**StatLink** <http://dx.doi.org/10.1787/888933682034>



## Components of the PISA index of economic, social and cultural status

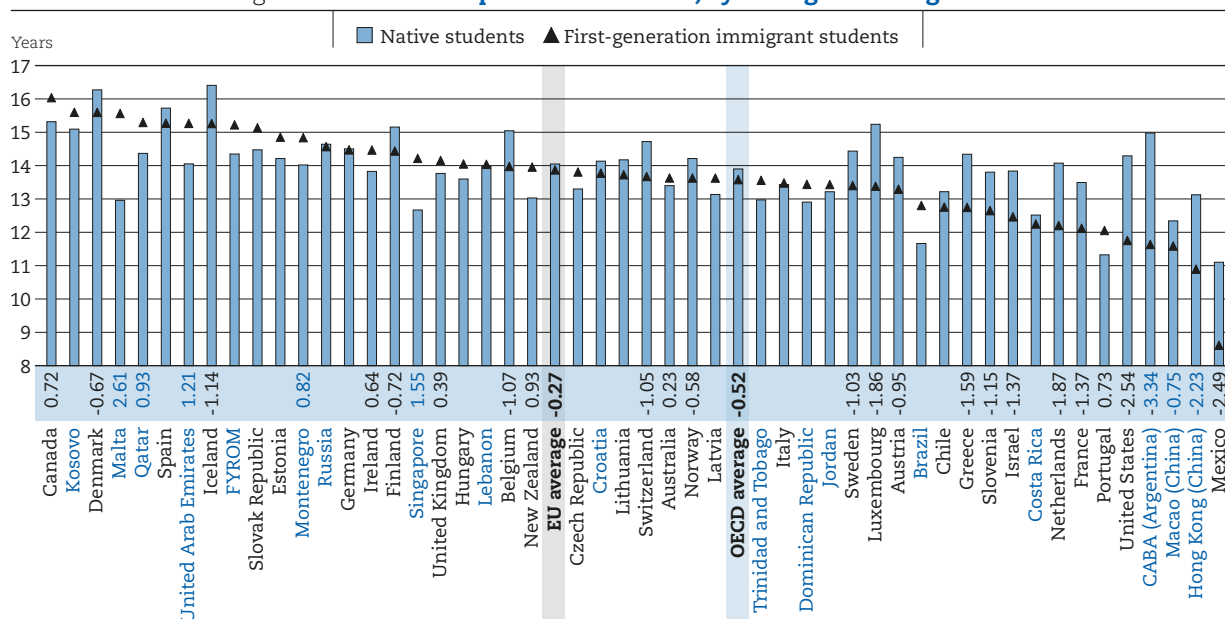
The PISA index of economic, social and cultural status (ESCS) summarises different pieces of information into a single measure. It is designed to have the highest possible correlation with its three components and to capture the greatest amount of information. However, parents' education, parents' occupational status and household possessions might not be completely aligned in all instances. For example, high-skilled immigrants might have to go through a period of adjustment before they attain an occupational status that matches their education level. Also, an immigrant who has recently entered the host country is likely to own fewer household possessions than a native who has lived in the host country throughout his or her life. This section examines differences between native and immigrant students in the three separate components of the ESCS index.

### Parents' education

PISA 2015 asked students to define the highest level of schooling completed by each of their parents. Responses are coded according to ISCED 1997 classifications. Maternal and paternal levels of education are used to develop an index of highest parental education, which is then converted into an estimated number of years of schooling. A more detailed explanation of how the index is constructed is available in the PISA 2015 Technical Report.

Table 6.19 (available on line) reports the average years of parents' education for native students and students with an immigrant background. On average across OECD countries, the parents of native students completed 13.90 years of schooling, while the parents of first-generation immigrant students completed 13.58 years, an average difference of 0.52 year in those countries with large enough populations for calculating reliable estimates for both groups of students. The parents of second-generation immigrant students completed 13.61 years of schooling (0.43 year less than parents of native students, on average across OECD countries with available data), while the parents of returning foreign-born students and of students with a mixed heritage completed 14.74 years and 14.33 years of schooling, respectively (0.78 year and 0.43 year more than the parents of native students, respectively, for countries with available data).

Figure 6.17 ■ Years of parents' education, by immigrant background



Notes: Only countries and economies with valid data for first-generation immigrant students are shown.

Statistically significant differences between first-generation immigrant and native students in years of parents' education are shown next to country/economy names. For the OECD and EU averages, this number refers only to the subset of countries/economies with valid information for both groups of students.

Countries and economies are ranked in descending order of the years of parents' education among first-generation immigrant students.

Source: OECD, PISA 2015 Database, Table 6.19.

StatLink <http://dx.doi.org/10.1787/888933682053>

Figure 6.17 shows that in 19 of 50 countries and economies with available data, the parents of native students completed more years of education than the parents of first-generation immigrant students. In 14 countries and economies, they completed at least one year more of schooling, and in CABA (Argentina), Greece, Hong Kong (China), Luxembourg, Mexico, the Netherlands and the United States, they completed more than 1.5 years of schooling more than the parents of first-generation immigrant students. By contrast, in 11 countries, the parents of first-generation immigrant students completed more years of schooling than the parents of native students did.

Countries and economies differ greatly in how many years of education were completed by the parents of native students, ranging from an average of 11 years in Mexico to 15 years in Canada. In order to facilitate the comparison of the various migrant student groups across countries, Figures 6.17 and 6.18 show the differences in years of parents' education between native students and several categories of immigrant students.

In 22 countries and economies, the parents of second-generation immigrant students were less educated than the parents of native students (Table 6.19, available on line). In CABA (Argentina), Costa Rica, Luxembourg and the United States, the differences was more than two years of schooling. By contrast, in 14 countries and economies, the parents of second-generation immigrant students completed more years of schooling than the parents of native students did. In Lebanon, the difference was 3.35 years and in Turkey the difference was 3.04 years, both in favour of the parents of second-generation immigrant students.

On average across OECD countries, there is no statistical difference between first- and second-generation immigrant students in the average number of years of education completed by their parents (Table 6.19). However, there are some differences across countries. In 14 countries and economies, the parents of second-generation immigrant students completed fewer years of education than the parents of first-generation immigrant students, while the opposite was true in only 3 countries and economies. In Costa Rica, Denmark, Germany, Malta and Qatar, the difference between the two groups of parents was more than one year of education.

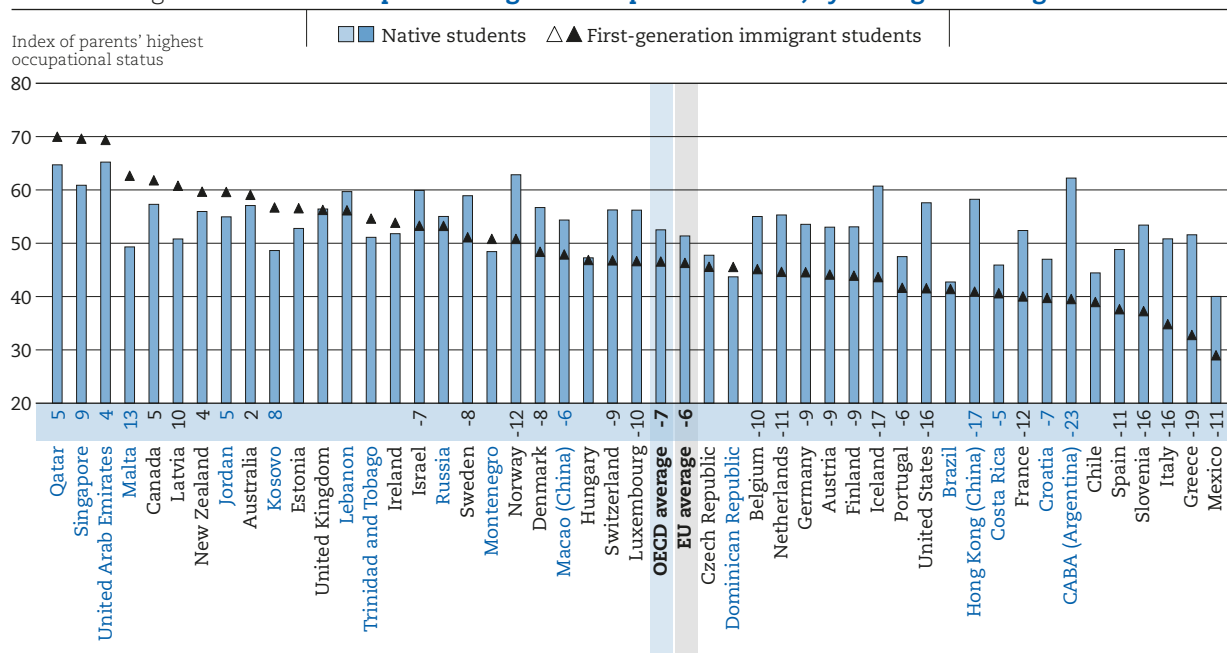
Table 6.19 shows that in 43 of 60 countries and economies with available data, the parents of returning foreign-born students were more educated than the parents of native students. The opposite was true only in Hong Kong (China) and Macao (China). In Brazil, the Dominican Republic, Italy, Lebanon, Peru, Spain, Tunisia and Turkey, this difference amounted to more than 1.5 years of schooling. In 36 of 67 countries and economies with available data, the parents of native students of mixed heritage also completed more years of schooling than the parents of native students did. But the difference – 0.43 year, on average across OECD countries – was smaller than that observed between returning foreign-born students and native students.

### Parents' occupational status

In PISA, data on the occupation of students' parents are obtained from responses to open-ended questions. Responses are coded into four-digit International Standard Classification of Occupations (ISCO) codes and then mapped to the international socio-economic index of occupational status (ISEI). The information on each parent's occupational status is then used to produce an index of highest parental occupational status. A higher score on the index indicates a higher occupational status. A more detailed explanation of the construction of the index is available in the *PISA 2015 Technical Report*.

Figure 6.18 shows the average occupational status for parents of native students and first-generation immigrant students. On average across OECD countries, the parents of native students had a value of 52.5 on the index, while the parents of first-generation immigrant students had a value of 46.6 (a 6.9-point difference among countries with data for both groups of students, which corresponds approximately to the difference in occupational status between a senior official or legislator and a teaching professional). In 25 of 47 countries and economies with available data, the parents of native students had a higher occupational status than the parents of first-generation immigrant students. In CABA (Argentina), Greece, Hong Kong (China), Iceland, Italy, Slovenia and the United States, the difference was larger than 15 points, which corresponded to the average difference in occupational status between the parents of Romanian and Dutch students. In 10 countries and economies, the parents of first-generation immigrant students had higher occupational status than the parents of native students.

Figure 6.18 ■ Index of parents' highest occupational status, by immigrant background



**Notes:** Only countries and economies with valid data for first-generation immigrant students are shown.

Statistically significant differences in the index of parents' highest occupational status between first-generation immigrant and native students are shown next to country/economy names. For the OECD and EU averages, this number refers only to the subset of countries/economies with valid information for both groups of students.

Countries and economies are ranked in descending order of the index of parents' highest occupational status among first-generation immigrant students.

**Source:** OECD, PISA 2015 Database, Table 6.20.

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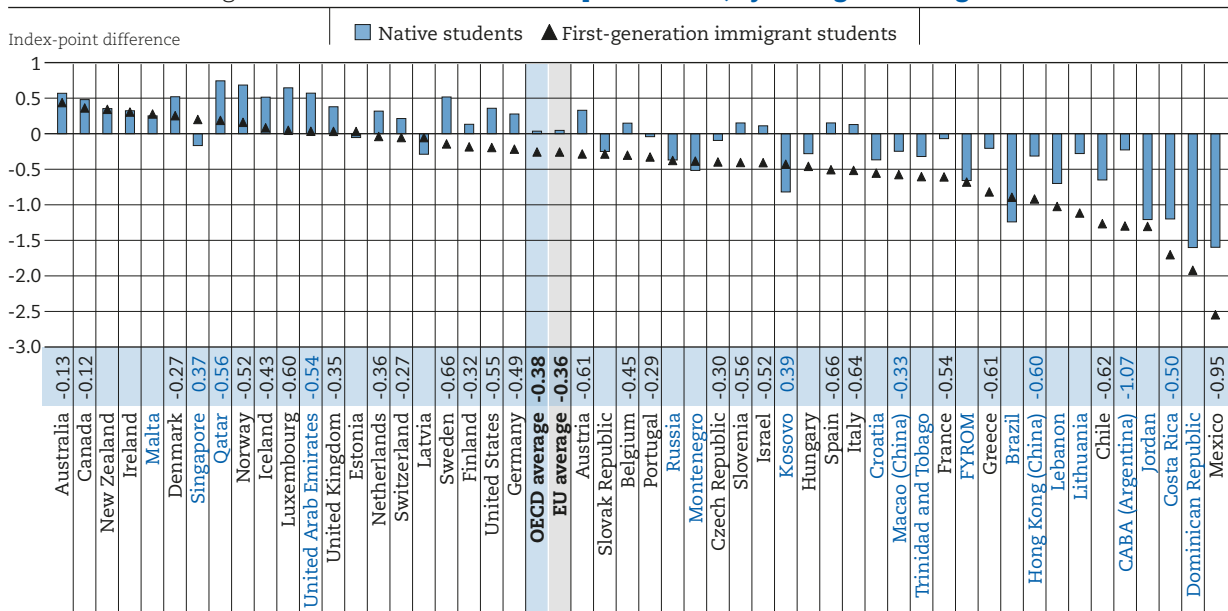
On average across OECD countries, the parents of second-generation immigrant students were 6.8 points below the parents of native students on the index of parents' highest occupational status (Table 6.20, available on line). In 28 of 54 countries and economies with available data, the highest occupational status of the parents of second-generation immigrants was lower than that of the parents of native students; in 17 countries, the difference was larger than 10 points. At the OECD average level, there was no statistical difference between first- and second-generation immigrant students in their parents' occupational status.

Table 6.20 also shows that in most countries and economies the parents of returning foreign-born students and native students with a mixed heritage tend to have higher occupational status than the parents of native students. On average across OECD countries with available data, the former group was 4.9 points and the latter group 1.6 points higher on the index than the parents of native students. In 28 countries and economies, the parents of returning foreign-born students had higher occupational status than the parents of native students. In Canada, Finland, Lithuania and Peru, the difference was larger than 10 points. Only in Hong Kong (China), Macao (China) and Portugal did the parents of native students have higher occupational status than the parents of returning foreign-born students. In 27 countries and economies, native parents had lower occupational status than the parents of native students of mixed heritage, while the opposite was true in 11 countries.

### Household possessions

PISA 2015 asked students about the availability of 16 household items at home, including three country-specific items that were seen as appropriate measures of family wealth in the country concerned. In addition, students reported the number of other possessions and books they had at home. Responses were coded into an index of household possessions whose scale was transformed so that zero represented an average OECD student and one was the standard deviation across equally weighted OECD countries. A more detailed explanation of the construction of the index is available in the PISA 2015 Technical Report.

Figure 6.19 ■ Index of household possessions, by immigrant background



**Notes:** Only countries and economies with valid data for first-generation immigrant students are shown.

Statistically significant differences in the index of household possessions between first-generation immigrant and native students are shown next to country/economy names. For the OECD and EU averages, this number refers only to the subset of countries with valid data for both groups being compared.

Countries and economies are ranked in descending order of the index of household possessions among first-generation immigrant students.

**Source:** OECD, PISA 2015 Database, Table 6.21.

**StatLink** <http://dx.doi.org/10.1787/888933682091>

Figure 6.19 shows that in 31 of 50 countries and economies with available data, native students had more household possessions than first-generation immigrant students. On average across OECD countries, first-generation immigrant students were at -0.26 on the index, while native students were at 0.04, a 0.38-point difference, on average across OECD countries with reliable estimates for both categories of students (approximately equal to the difference between the average PISA households in Switzerland and Greece). In 18 countries and economies, the difference was greater than 0.5 point (half a standard deviation), which corresponds approximately to the difference in number of household possessions between the average student in Luxembourg and the average student in Poland.

The figure reveals that countries differ widely in the household possessions reported by native and first-generation immigrant students. For example, in Costa Rica and Norway, the difference in the household possession index between the two groups of students was around half a standard deviation. But in Norway, native students were at 0.68 on the index and first-generation immigrant students were at 0.16, while in Costa Rica, natives were at -1.20 on the index while first-generation immigrant students were at -1.70.

On average across OECD countries, the household possession index of second-generation immigrant students was 0.23 point lower than that of native students in 2015 (Table 6.21, available on line). In Austria, CABA (Argentina), Costa Rica, the Dominican Republic, Greece, Luxembourg, Qatar, Thailand and the United Arab Emirates, it was more than 0.5 point lower. However, in 15 countries and economies, household wealth among second-generation immigrant students was higher than that among first-generation immigrant students. In Chile, France, Hungary, Italy, Jordan and Portugal, second-generation immigrant students were more than one-fourth of a standard deviation, on average, above first-generation immigrant students on the index.

Unlike foreign-born students of foreign-born parents, in most countries and economies, the families of foreign-born students with at least one native parent – i.e. returning foreign-born students – are wealthier than the families of native students (Table 6.21). On average across OECD countries, they were

0.11 point higher than native students on the household possessions index. Native students of mixed heritage also show greater family wealth than native students, but the difference tends to be smaller than that between native students and returning foreign-born students. In Albania, Costa Rica, Denmark, the Dominican Republic, Finland, Georgia, Iceland, Israel, Latvia, Lithuania, Norway, Switzerland, and Trinidad and Tobago, the families of returning foreign-born students had more household possessions than the families of native students, while there was no statistically significant difference in household possessions between native students with mixed heritage and native students.

### **Socio-economic status and the disadvantage of students with an immigrant background**

The previous section has shown that “socio-economic disadvantage” can stem from various sources, and not necessarily all of them simultaneously. Compared to native students, immigrant students (first- and second-generation immigrant students) tend to have lower economic and social status, but similar cultural status. In the vast majority of countries and economies with available data, the parents of immigrant students have fewer household possessions; in about half of the participating countries/economies, they have lower occupational status; and in slightly less than half of the countries/economies, they had completed fewer years of education. In the United Kingdom, the parents of immigrant and native students completed the same number of years of education and hold the same occupational status; however, immigrant students have fewer household possessions (a difference in the index of one-third of a standard deviation). In Italy and Spain, years of parents’ education are identical across immigrant backgrounds, but the economic and social status of immigrant and native students differ widely. In both countries, the difference in the index of household possessions between native and immigrant students is around two-thirds of a standard deviation, which corresponds to the difference between the average student in Norway and Portugal. When it comes to occupational status, differences are also well above OECD average: 14 points in Italy and 10 points in Spain.

Analyses of PISA data show that socio-economic status, as measured by the PISA index of economic, social and cultural status (ESCS), is a significant mediating factor in the relationship between immigrant background and academic performance. This section extends the previous analyses by looking at the combined effect of each component of the ESCS index and measuring the portion of the gaps between native and immigrant students that it explains.

The Blinder-Oaxaca counterfactual decomposition is used to investigate these effects. It was originally developed to study different labour market outcomes across groups, such as gender or race; but it can be used to investigate any group differences in outcomes. Starting with a set of relevant characteristics that differ across groups, the methodology can be applied to divide the group differences in outcomes into a portion explained by group characteristics (the endowment effect) and residual component.<sup>4</sup>

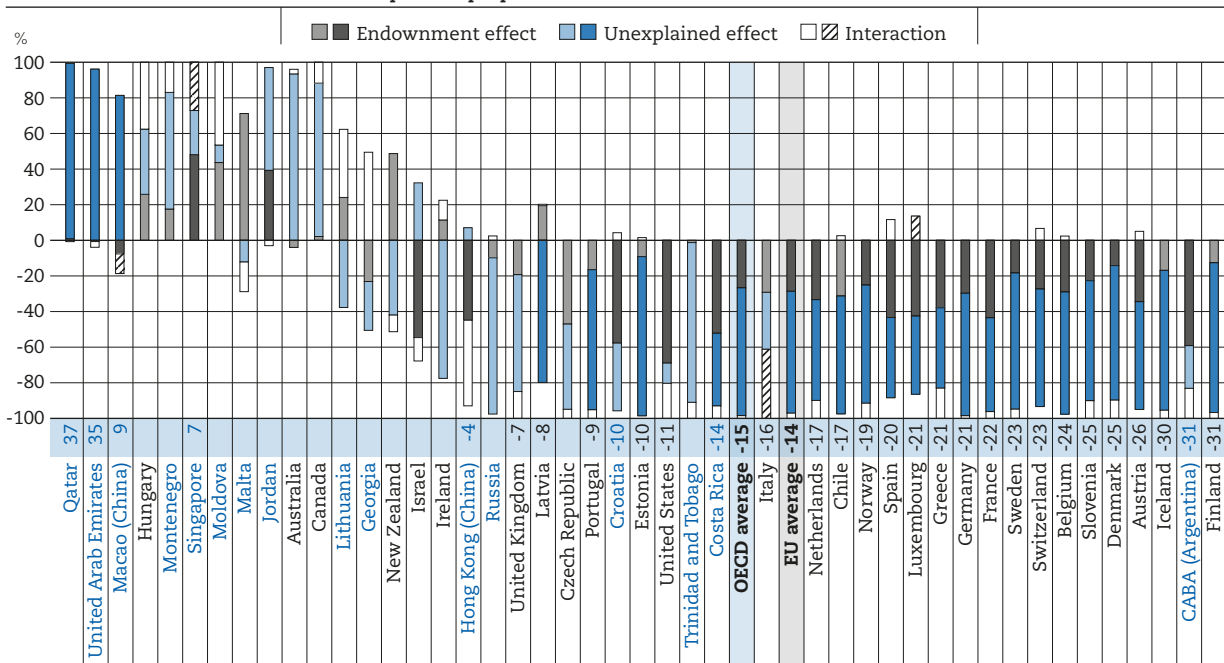
To investigate differences between native and immigrant students in academic outcomes, the decomposition is applied to the differences between those two groups in the percentage of students reaching baseline proficiency in all core PISA subjects (science, reading and mathematics). The explanatory variables used in the model – i.e. the “endowments” – are the three components of ESCS: parents’ education, parents’ occupational status and household possessions. Results are presented in Figure 6.20 below. Statistically significant differences in the outcome variable are shown next to country names; the bars represent the portion of the differences explained by each effect.

Results show that, while socio-economic status accounts for a remarkably large share of the differences in academic achievement between the two groups of students, the largest portion of the disparities remains unexplained in most countries and economies. On average across OECD countries, the endowment effect explains about one-third of the observed differences and the rest is unexplained. However, there are significant variations across countries and economies. In CABA (Argentina), Croatia, Hong Kong (China) and the United States, the only significant effect is the endowment effect – meaning that the difference between native and immigrant students is almost entirely explained by socio-economic differences across immigrant backgrounds. In Hong Kong (China) and the United States, the unexplained effect is small, while in CABA (Argentina) and Croatia it is larger but not statistically significant because of sample size issues.



Figure 6.20 ■ Socio-economic status and academic outcomes

Blinder-Oaxaca decomposition of the proportion of the immigrant-native gap in the percentage of students reaching baseline academic proficiency explained by “endowments” (i.e. parents’ education, parents’ occupational status and household possessions), the unexplained proportion and the interaction between the two



Notes: Statistically significant differences are marked in a darker tone or in a striped pattern.

Only countries/economies with valid data on the immigrant-native gap in attaining baseline academic proficiency are shown.

Statistically significant immigrant-native gaps in the percentage of students attaining baseline academic proficiency are reported next to country/economy names.

Countries and economies are ranked in descending order of the immigrant-native gap in the percentage of students attaining baseline proficiency.

Source: OECD, PISA 2015 Database, Table 6.22.

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In Chile, Estonia, Finland, Iceland, Latvia, Portugal, Qatar and the United Arab Emirates, the only significant effect is the unexplained effect. In these countries and economies, the gaps are not determined by socio-economic differences across immigrant backgrounds, so their source lies in other unobserved factors that are not considered in this model. In Austria, Belgium, Costa Rica, Denmark, France, Germany, Greece, Luxembourg, the Netherlands, Norway, Slovenia, Spain, Sweden and Switzerland, both the endowment and the unexplained effects are significant; however, the residual component is greater than the explained effect in all countries except Costa Rica.

These results clearly indicate that socio-economic status is an important determinant of the disadvantage that students with an immigrant background experience, but also that socio-economic status explains only part of the difference between native and immigrant students in the likelihood that students will reach the baseline level of proficiency in each of the three core PISA subjects – the school subjects in which proficiency is internationally recognised as essential if individuals are to lead productive and fulfilling lives. Furthermore, Figure 6.20 shows that the importance of socio-economic status as a determinant of differences in outcomes between native and immigrant students varies across countries. These results indicate that socio-economic status alone cannot explain either within-country or between-country variations in the gap in academic outcomes between native and immigrant students; other factors play an important role. The next chapters explain the “unexplained”.



## Notes

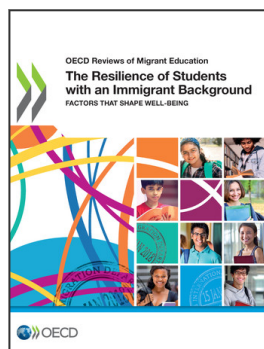
1. Students who attain at least proficiency Level 2 in all three PISA core subjects – science, reading and mathematics.
2. Students who reported that they “agree” or “strongly agree” with the statement “I feel like I belong at school”, and “disagree” or “strongly disagree” with the statement “I feel like an outsider at school”.
3. Students who reported a life satisfaction of 7 or above on a scale from 0 to 10.
4. Students who reported that they “disagree” or “strongly disagree” with the statements “I often worry that it will be difficult for me taking a test” and “Even if I am well prepared for a test, I feel very anxious”.
5. The Blinder-Oaxaca decomposition also produces a third term that represents the interaction between the endowment and the residual effects. Results on the interaction term are presented in the graph for the sake of clarity but they are not commented on because their interpretation is cumbersome and goes beyond the scope of this publication. For a more detailed explanation of how the Blinder-Oaxaca method works, please refer to <http://www.stata-journal.com/article.html?article=st0151>.

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Factors that Shape Well-being

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