Chapter 7

How schools and education policy support or undermine student resilience

This chapter examines the association between school policies and practices and the likelihood that students with an immigrant background attain baseline academic proficiency, and report positive social and emotional outcomes. It discusses how the learning environment, including the disciplinary climate in class, student truancy and bullying, the quantity and quality of school resources, and school policies, including assessment policies and grade repetition, are related to immigrant students' academic, social and emotional, and motivational resilience.

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 across countries that distributed the PISA parent questionnaire, the parents of immigrant students are four percentage points more likely than native parents to choose a school based on the availability of financial aid and three percentage points less likely to choose a school based on the school climate. However, school climate is found to have a strong influence on the performance of immigrant students.

- On average across OECD and EU countries, in schools with a higher concentration of immigrant students the academic performance and social and emotional well-being of students tends to be lower. However, in almost every country and on average across OECD and EU countries, once the schools' socio-economic profile is accounted for, these differences disappear.

- The disciplinary climate at school tends to be worse and truancy more prevalent in the schools attended by the average immigrant student, and these differences are related to differences between immigrant and native students in academic performance and well-being.

- Immigrant students are more likely than native students to be victims of bullying and perceived unfair treatment by teachers, which contribute to differences between native and immigrant students in academic performance and well-being.

- On average across OECD countries, immigrant students are four percentage points more likely to have repeated a grade (six percentage points more likely across EU countries) and four percentage points less likely to be enrolled in a vocational programme (four percentage points less likely across EU countries) than native students with similar PISA scores.

Previous chapters identified some key individual and family-level characteristics that are associated with students' vulnerability to migration-related adversity. However important personal characteristics are in shaping the likelihood that students with an immigrant background will attain high levels of academic achievement, and social and emotional well-being, environmental factors also play a role. Education policies can ensure that the school environments to which immigrant students are exposed are conducive to positive academic, social, emotional and motivational outcomes (Bernard, 1995; Kirby and Fraser, 1997; Masten, 1994; Werner and Smith, 1992).

As Chapter 2 of this report argues, examining why some students with an immigrant background are academically, socially, or emotionally resilient while others are vulnerable to the often adverse circumstances of migration requires the investigation of the multilevel and multi-layered interplay between risk and protective factors at the individual, family, school and system levels. While resilience, in its various dimensions, is an individual attribute, because it is malleable and dependent on context, its promotion can be a goal of education policy and can be fostered by policy makers, school principals and teachers by shaping the schooling environment that immigrant students experience. This chapter aims to highlight the unique role schools and educators can play in promoting students' academic and socio-emotional resilience, and how education policy can ensure that students with an immigrant background attend schools that meet their needs.

Since school is the place where students spend most of their time and where most learning takes place, what happens in schools has a potentially disproportionate effect on children's academic outcomes and general well-being. The quality of the school experience is the product of several factors, including the composition of the student body, how many and which resources are available for students, and the policies and practices that teachers, school principals and education systems as a whole put in place. This chapter examines the association between what happens in school and the likelihood that students with an immigrant background are academically, socially and emotionally resilient, and how education policies can promote a school environment that enables immigrant students to thrive.

Table 7.1 ▪ **Snapshot of school-level risk factors for immigrant students – 1**

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

	Relative risk for immigrant students of being frequently bullied	Relative risk for immigrant students of reporting to have been frequently unfairly treated by their teachers	Increased likelihood of immigrant students having received frequent feedback from their science teacher compared to native students, accounting for science performance	Increased likelihood of immigrant students having repeated a grade compared to native students, accounting for academic performance and socio-economic status	Increased likelihood of immigrant students attending vocational programmes compared to native students, accounting for academic performance and socio-economic status
OECD average	1.19	1.14	4.64	4.37	-3.58
EU average	1.23	1.13	4.25	5.68	-4.46
Colombia	2.31	1.07	-9.61	12.16	-1.06
Slovak Republic	2.06	1.18	8.56	19.44	-0.49
Brazil	1.97	1.44	-6.54	10.08	-1.46
Uruguay	1.79	1.14	c	1.61	-1.64
Tunisia	1.75	1.26	4.82	-1.09	0
B-S-J-G (China)	1.71	0.89	-4.6	14.67	-8.54
Mexico	1.66	1.57	2.78	12.52	0.72
Iceland	1.58	1.18	-2.29	3.23	0
Czech Republic	1.52	1.12	2.27	9.81	-6.76
Dominican Republic	1.49	1.16	5.93	4.87	-0.76
Luxembourg	1.46	1.11	9.12	0.47	-5.14
Greece	1.43	1.06	1.51	7.71	-3.07
Estonia	1.42	1.06	10.57	-0.71	0.98
Spain	1.4	1.02	-1.22	7.62	-0.13
Chile	1.39	1.07	10.88	-1.11	-0.66
Peru	1.37	1	c	35.29	c
Thailand	1.36	1.08	-4.75	16.73	16.18
Montenegro	1.34	1.03	-6.09	5.95	5.18
Turkey	1.33	1.12	-2.8	10.9	3.17
Ireland	1.32	1.1	3.34	3.67	-0.5
Lithuania	1.3	1.02	14.23	5.45	1.5
Switzerland	1.29	1.26	4.8	6.56	-5.54
Bulgaria	1.28	0.96	-3.15	14.02	-3.75
Croatia	1.27	1.13	-2.21	1.08	-1.74
Portugal	1.25	1.14	4.35	7.23	-2.93
Latvia	1.19	1.08	-0.72	-0.25	-0.79
Germany	1.18	1.24	4.9	2.16	-1.8
France	1.14	1.11	8.67	-5.62	-10.45
Finland	1.13	1.05	18.17	5.51	c
Cyprus*	1.12	1.07	-1.27	9.07	-7.62
Slovenia	1.09	1.09	6.15	4	-13.46
Belgium	1.08	1.24	8.1	4.43	-24.42
Hungary	1.05	1.04	-5.29	4.16	-2.14
United Kingdom	1	1.1	1.71	3.46	-0.65
Russia	1	0.99	0.39	1.42	4.63
Austria	1	1.26	3.47	9.68	-19.23
Sweden	0.99	1.31	8.88	7.98	-0.09
Singapore	0.98	0.93	7.37	8.25	c
Denmark	0.98	1.23	6.1	3.93	c
United Arab Emirates	0.96	1	2.91	0.83	-8.22
Qatar	0.95	0.93	4.54	-1.33	c
Hong Kong (China)	0.93	1.02	-1.44	9.02	c
Norway	0.93	0.98	12.8	m	c
Japan	0.92	1.19	14.12	m	-8.37
Netherlands	0.9	1.41	1.39	1.63	-11.04
Canada	0.84	m	1.16	0.03	c
Costa Rica	0.83	1.02	11.35	15.32	-3.87
United States	0.81	1.05	4.59	-1.11	c
Macao (China)	0.78	1	6.26	-5.21	-0.07
Australia	0.75	0.95	3.54	2.26	-3.02
New Zealand	0.74	0.91	4.19	-0.2	c
Albania	m	m	-13.66	-0.33	2
Algeria	m	m	6.55	2.26	3.78
CABA (Argentina)	m	m	7.77	-1.62	10.55
FYROM	m	m	-14.62	15.65	-3.06
Georgia	m	m	5.23	2.81	0.09
Israel	m	m	-4.89	-4.56	c
Italy	m	m	4.02	10.74	-2.16
Jordan	m	m	-0.74	1.34	c
Kosovo	m	m	-1.91	2.62	-21.94
Lebanon	m	m	-1	12.06	c
Malta	m	m	-1.19	11.07	c
Moldova	m	m	4.8	7.72	c
Trinidad and Tobago	m	m	0.59	7.65	c

* See note at the beginning of this Chapter.
Notes: Only countries/economies with valid data for at least one outcome are presented.
Students who reported being frequently bullied are those who answered "a few times a month", "once a week or more" to at least one of the questions about how often, during the previous 12 months: "Other students left me out of things on purpose"; "Other students made fun of me"; "I was threatened by other students"; "Other students took away or destroyed things that belong to me"; "I got hit or pushed around by other students"; and "Other students spread nasty rumours about me".
Students who reported frequent unfair treatment by their teachers are those who answered "a few times a month" or "once a week or more" to at least one of the questions about how often, during the previous 12 months: "Teachers called me less often than they called on other students"; "Teachers graded me harder than they graded other students"; "Teachers gave me the impression that they think I am less smart than I really am"; "Teachers disciplined me more harshly than other students"; "Teachers ridiculed me in front of others"; and "Teachers said something insulting me in front of others".
Students who reported receiving frequent feedback from their science teacher are those who answered "many lessons" or "every lesson or almost every lesson" to at least one of the statements: "The teacher tells me how I am performing in this course"; "The teacher gives me feedback on my strength in this subject"; "The teacher tells me in which areas I can improve"; "The teacher tells me how I can improve my performance"; "The teacher advises me on how to reach my learning goals".
Source: OECD, PISA 2015 Database, Tables 7.22, 7.34 and 7.37.
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Table 7.2 ▪ Snapshot of school-level risk factors for immigrant students – 2

	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

	Concentration of students with an immigrant background in schools (difference between observed and maximal potential concentration)	Relative risk for immigrant students of being in urban schools	Relative risk for immigrant students of being in a school with levels of disciplinary climate below the OECD average	Number of after-school activities available in schools attended by the average immigrant student compared to the number available in schools attended by the average native student
OECD average	**-26.28**	**1.65**	**1.22**	**-0.15**
EU average	**25.22**	**1.63**	**1.09**	**-0.27**
United Kingdom	40.69	2.74	0.7	-0.6
Singapore	39.26	1	0.67	0.35
Kosovo	38.17	1.1	2.3	0.58
Italy	36.1	1.24	1.25	-0.18
Ireland	35.93	1.15	0.86	0.16
Denmark	34.36	2.73	1.15	-0.47
Slovenia	32.85	1.64	1.26	-0.47
Cyprus*	32.68	1.2	0.94	-0.43
Australia	32.47	1.54	0.87	0.07
Montenegro	31.83	0.95	1.38	0.66
Jordan	31.79	1.64	1.01	0.52
Croatia	31.56	1.02	1.19	-0.33
New Zealand	31.38	1.67	0.83	0.21
Switzerland	31.27	1.65	1.13	-0.04
Canada	31.17	2.06	0.82	0.71
Israel	30.82	1.58	1.06	0.3
Portugal	30.46	1.09	1.23	-0.76
Hong Kong (China)	30.27	1	1.28	-0.61
Luxembourg	28.88	1.07	1.05	-0.48
Austria	28.66	2.04	1.49	0.09
Sweden	28.62	1.77	1.06	-0.25
Belgium	27.68	2.76	0.95	-0.5
CABA (Argentina)	26.9	0.98	1.14	-0.44
Greece	26.26	1.13	1.05	-0.4
Germany	25.8	1.94	1.36	-0.51
United States	25.17	1.56	0.98	-0.06
Norway	24.98	2.32	1.16	0.2
Malta	24.67	1	0.9	-0.88
Russia	24.62	1.04	1.59	0.02
France	23.39	1.63	1.09	-0.12
Costa Rica	23.35	1.31	1.04	-0.13
Netherlands	23.19	2.71	1.15	0.07
Trinidad and Tobago	22.37	1	1.19	0.3
Spain	22.12	1.17	1.18	-0.23
Qatar	21.26	1.22	0.51	0.91
Iceland	21.02	1.59	1.12	-0.01
Lebanon	20.73	1.14	1.14	-0.51
Latvia	19.98	1.58	0.97	0.31
Macao (China)	18.78	1	0.61	-0.09
Estonia	18.59	1.68	0.98	-0.65
Lithuania	17.66	1.65	1.03	-0.03
Czech Republic	15.41	1.95	1.13	-0.23
Finland	15.11	1.9	0.93	0.35
Chinese Taipei	13.52	c	c	c
Moldova	13.29	2.46	0.92	-0.14
FYROM	12.55	1.38	1.59	-1.01
United Arab Emirates	11.23	1.52	0.73	1.24
Slovak Republic	9.83	0.98	1.28	-0.17
Hungary	9.8	1.47	0.92	0.4
Tunisia	9.57	0.7	1.03	0.23
Georgia	7.77	1	1.7	-0.24
Chile	m	1.1	1.26	-0.11
Japan	m	0.91	5.86	-0.99
Mexico	m	0.74	0.98	-1.14
Turkey	m	1.38	1.16	0.56
Albania	m	0.42	1	-0.34
Algeria	m	0.47	0.93	0.54
Brazil	m	1.08	1.17	-0.81
B-S-J-G (China)	m	c	1.93	-0.47
Bulgaria	m	1.04	1.07	-0.82
Colombia	m	1.37	1.28	-0.21
Dominican Republic	m	0.86	1.44	-0.57
Peru	m	1.78	1.3	0.04
Thailand	m	0.65	1.8	0.48
Uruguay	m	1.4	1.14	0.23

* See note at the beginning of this Chapter.
Notes: Only countries/economies with valid data for at least one outcome are presented.
Urban schools are those in communities of more than 100 000 people, as reported by school principals.
Disciplinary climate is measured through the PISA index of disciplinary climate. The school value is the average of individual students' reports.
**Source:** OECD, PISA 2015 Database, Tables 7.7 and 7.29.
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The likelihood that schools serving students with an immigrant background will have adequate material and human resources depend both on the amount invested in the education system and the extent to which education policies target disadvantaged student populations. This means that students with an immigrant background can encounter very different learning environments depending on the overall amount spent on education, how expenditures are allocated, and how well resources are used to create environments that benefit all learners.

Material resources include school infrastructure and equipment; human resources encompass the quantity and quality of education staff, and how staff members behave towards students; time resources indicate the amount of learning time and any extracurricular activities that are available. While education policies can shape the intended learning time, the quality of the teaching staff determines how much of the intended learning time is, in fact, dedicated to learning. The quality of infrastructure and equipment determines the availability of extracurricular activities and the effectiveness of learning time.

Figure 7.1 ■ **How education policies can promote the resilience of students with an immigrant background**
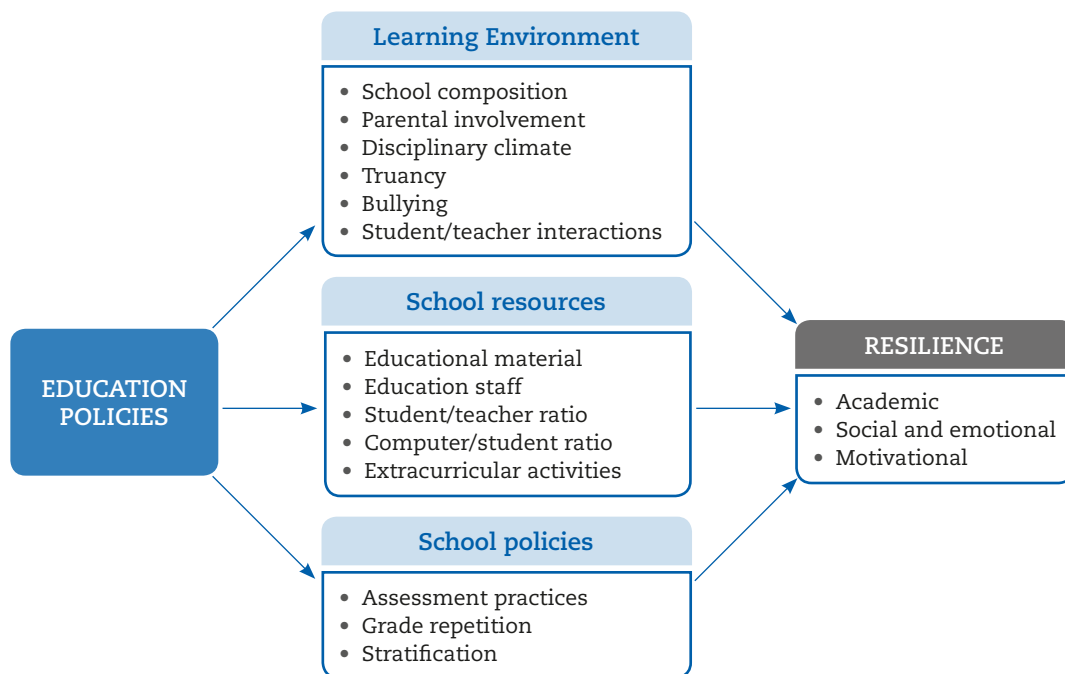
While evidence suggests that lack of material resources can have adverse effects on learning (Schneider, 2002; Uline and Tschannen-Moran, 2008), research shows that after a certain threshold is reached, it is not the quantity of resources, but rather how well resources are spent that determines learning outcomes (Burtless, 1996; Nannyonjo, 2007; Nicoletti and Rabe, 2012; OECD, 2013, 2016a; Suryadarma, 2012; Wei Clifton and Roberts, 2011). These results indicate that the focus of schools and policy makers should be on identifying factors that make a difference to the learning and well-being outcomes of immigrant students, and targeting resources to ensure that more of what helps these students flourish is offered to them. The academic achievement, and social and emotional well-being of immigrant students is inevitably determined by the quality of school resources, how effectively they are used, and how equitably they are distributed across schools, rather than their sheer quantity (Gamoran, Secada and Marrett, 2000; OECD, 2016a).

How resources are allocated can have particularly large effects on the outcomes of first- and second-generation immigrant students because these students tend to be more socio-economically disadvantaged than students without an immigrant background, students of mixed heritage and returning foreign-born students (see Chapter 6). They also tend to be concentrated in specific residential areas. In some countries

and economies, residential segregation based on income, and immigrant and ethnic background translates into differences in the quantity and quality of educational resources (Reardon and Owens, 2014), with significant consequences on students' opportunities to receive high-quality instruction (Roemer, 1998).

The chapter first examines if and to what extent different school environments are associated with a greater likelihood that students with an immigrant background will be academically, socio-emotionally and motivationally resilient. The chapter then identifies the education policies that are associated with the likelihood that students with an immigrant background will be resilient, considering academic, social, emotional and motivational dimensions of resilience.

Figure 7.1 presents a conceptual model of how education policies and practices can promote academic, social, emotional and motivational resilience among students with an immigrant background. The figure suggests that education policies can promote the various dimensions of the resilience of students with an immigrant background by shaping the learning environment in schools and the resources schools have to facilitate immigrant students' integration.

The learning environment and the academic, social, emotional and motivational resilience of immigrant students

The resources, policies and stakeholders of a school all contribute to shaping the learning environment. The learning environment comprises what happens in the classroom, in the school, in general, and in the wider community (OECD, 2013). The character of the community surrounding the school is shaped by the interactions between students, teachers, parents and school principals. In turn, the nature and quality of these interactions depend on the legislation regulating them and on specific school practices and parents' attitudes.

Learning environments can be described as innovative, dynamic, collaborative, smart or authentic (Engerström, 2009) and they can be labelled as positive or negative. The quality of the learning environment in a school is, first and foremost, measured by the school climate. Several studies highlight the importance of a positive classroom climate for students' academic achievement (Güzel and Berberoğlu, 2005; Shin et al., 2009; OECD, 2004; Ma et al., 2013). Some of the facets of a positive school climate that have been shown to be associated with positive academic performance are: supportive teacher-student interactions, good student-student relationships, and an orderly learning atmosphere with clear disciplinary rules (Creemers and Kyriakides, 2008; Harris and Chrispeels, 2006; Hopkins, 2005; Scheerens and Bosker, 1997). Even more notably, research suggests that supportive teacher-student interactions, good student-student relationships, and the strong focus on student learning that characterises schools with a positive disciplinary climate are particularly beneficial to disadvantaged students (Murray and Malmgren, 2005; Cheema and Kitsantas, 2014).

Meaningful learning is more likely to happen in a disciplined environment, where students can listen to what the teacher says and can concentrate on academic tasks (Ma and Willms, 2004). A school's disciplinary climate is also a strong predictor of sense of belonging at school (Arum and Velez, 2012; Chiu et al., 2016). The learning environment of classrooms is shaped by teachers' attitudes as well as the disciplinary climate (Fraser, 2015). Some classroom dynamics spread to the school level. For example, the effects of truancy may go beyond the single truant student and have consequences for other students, by creating resentment among those who attend class, by indicating that they, too, can skip class or by lowering the quality of instruction because of the disruptions caused by frequent absences (Wilson et al., 2008).

A school's learning environment significantly influences student performance and engagement at school (Engerström, 2009; Thapa et al., 2013). It also has an impact on the overall well-being of students. For example, disciplinary climate is a strong predictor of students' sense of belonging at school (Arum and Velvez, 2012; Chiu et al., 2016; OECD, 2003). Positive relationships between students and teachers are also particularly important for the social and emotional well-being of disadvantaged students (Battistich et al., 1997).

Learning requires an orderly, supportive and positive environment not only within the classroom but also outside (Jennings and Greenberg, 2009). Studies have found that supportive relationships among teachers, students and families can improve the performance of students, especially disadvantaged students

(Crosnoe, Johnson and Elder, 2004; Hughes and Kwok, 2007). Linguistic or economic barriers can prevent families with an immigrant background from fully integrating into a school's social environment. That, in turn, can influence a child's academic results and broader well-being.

Studies suggest that the likelihood that socio-economically disadvantaged students will be academically resilient is higher when they attend schools that offer more and higher-quality resources and extracurricular activities (Agasisti and Longobardi, 2017; 2014a; 2014b). Since resources invested in education are often found to be weakly associated with education outcomes overall (Hanushek, 1986; 1997; 2003; Burtless, 2011), these results suggest that the availability of high-quality resources may benefit those who are at the greatest risk of falling behind. This could be because a lack of human, material and time resources within the family might be one of the reasons why such students are academically disadvantaged in the first place. The availability of such resources in school acts as a safety net that prevents these students from falling behind their classmates.

There is also evidence that students who are at a particularly high risk of falling behind academically because of their socio-economic status benefit more than other students from attending schools that establish close collaborations among the students, their families and the local community (Bryan, 2005; Ali and Jerald, 2001; Harris, 2007; Kannapel et al., 2005). Bryan (2005) also highlights the importance of having dedicated figures within the school, such as mentors and counsellors, specifically trained and assigned to support these students and build partnerships with families and communities.

School composition

Immigrant students are often not evenly represented across schools. Evidence indicates that in Canada, the United Kingdom and the United States, 60-65% of immigrant students would have to move to another school to achieve an even distribution across schools country-wide (Schnepf, 2004). This percentage is slightly lower in Australia, France, Germany, the Netherlands, New Zealand and Sweden (around 50% would have to move) and lowest in Switzerland (40%). Moreover, schools are also split along socio-economic lines. Socio-economic segregation in secondary schools (according to parents' background, excluding immigrant background) is particularly pronounced in Belgium, Germany and Hungary, somewhat less so in the United Kingdom and the United States, and the least prevalent in Nordic countries (Jenkins et al., 2008).

In part, the concentration in schools of immigrant students and social disadvantage arises from broader residential segregation and from the tendency, among native families, to avoid schools with large numbers of immigrant students. Some of these families fear that students with an immigrant background will require greater attention from teachers and will slow the pace of instruction because of language barriers or other difficulties associated with their background.

PISA 2015 shows that students with an immigrant background tend to be more concentrated in urban areas than native students, an indication of residential segregation. In school questionnaires, principals were asked about the size of the community where their school was located. Responses were coded so that schools were considered to be in an urban area if they were found in a city of at least 100 000 people and in a rural area if they were in less populous communities. Figure 7.2 shows that in the majority of countries and economies, immigrant students were less likely to be enrolled in rural schools. On average across OECD countries, the percentage of students enrolled in rural schools was 17 percentage points lower among immigrant students than native students (15 percentage points lower across EU countries).

Table 7.3 (available on line) shows that, in the majority of countries and economies, second-generation immigrant students were the most likely to be enrolled in urban schools. On average across OECD countries, they were 20 percentage points more likely than native students to be found in urban schools (16 percentage points across EU countries), followed by first-generation immigrant students who were 16 percentage points more likely (15 percentage points across EU countries). Returning foreign-born students and native students of mixed heritage were, respectively, seven and eight percentage points more likely than native students to be enrolled in schools in urban areas (seven and eight percentage points, respectively, across EU countries).

Figure 7.2 ■ **Enrolment in urban schools, by immigrant background**

Schools in communities with more than 100 000 citizens
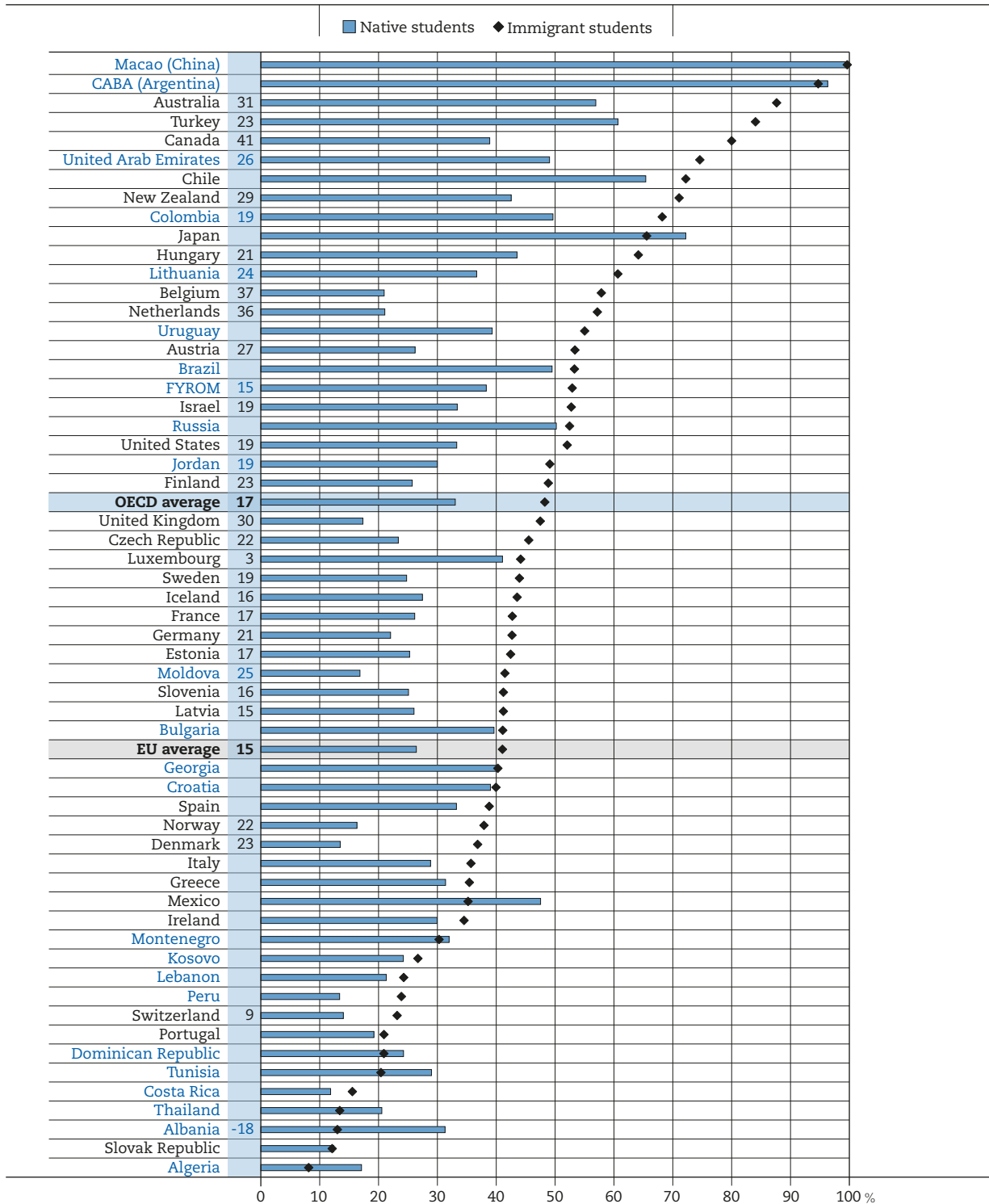
Notes: Only countries with valid data on immigrant students and where not all students are in urban or rural communities are shown. Urban schools are schools located in communities with more than 100 000 citizens, as reported by school principals.

Statistically significant differences between immigrant and native students are shown next to country/economy names. For the OECD and EU average, 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 percentage of immigrant students enrolled in urban schools.

Source: OECD, PISA 2015 Database, Table 7.3.

StatLink ⟦⟧ http://dx.doi.org/10.1787/888933682167

Another reason why students with an immigrant background could end up concentrated in particular schools stems from the different criteria native and immigrant families apply when choosing a school for their children. While students in some school systems are assigned to their neighbourhood school, in recent decades, reforms in many countries have tended to give greater choice to parents and students, to enable them to choose the schools that meet the child's education needs or preferences (Heyneman, 2009). One reason these policies have been adopted is that the competition created by choice compels institutions to organise programmes and instruction in ways that better meet diverse student requirements and interests, thus reducing the cost of failure and mismatches (Card, Dooley and Payne 2010; Woessmann et al., 2007). This all assumes that students and parents have adequate information and choose schools based on their quality.

But some studies have questioned the validity of the underlying assumptions about parental and student choice, such as equal access to information about schools (Berends and Zottola, 2009; Hess and Loveless, 2005; Jensen et al., 2013; Waslander, Pater and van der Weide, 2010). Previous PISA findings, for instance, clearly show that even if most parents would like their child to attend the best school, disadvantaged parents weigh financial considerations more than advantaged parents do when choosing a school (OECD, 2015). Furthermore, to the extent that immigrants and natives belong to different religious denominations and have different cultural traditions, school choice based on such considerations can lead to a lack of integration in schools. As a result, adopting school-choice practices can lead to greater segregation, which, in turn, can result in differences in teacher quality and student achievement across schools, harming disadvantaged students the most (Behrman et al., 2016; Ladd, 2002; Valenzuela, Bellei and Rios, 2014). And when students are segregated, there are fewer opportunities for them to socialise and learn about each other's cultures and traditions.

In PISA 2015, students in 18 countries and economies took home a questionnaire for their parents to complete. Parents were asked which criteria they consider important when choosing a school for their child. They were asked to report how much importance they give ("not important", "somewhat important", "important" or "very important") to 11 criteria, mainly related to school quality, financial constraints, the school's philosophy or mission, and geographic distance between their home and the school.

Figure 7.3 ▪ **Immigrant-native differences in school-choice criteria**

Difference in the percentage of immigrant parents and native parents who indicated that the following criteria are important when choosing a school, after accounting for socio-economic status
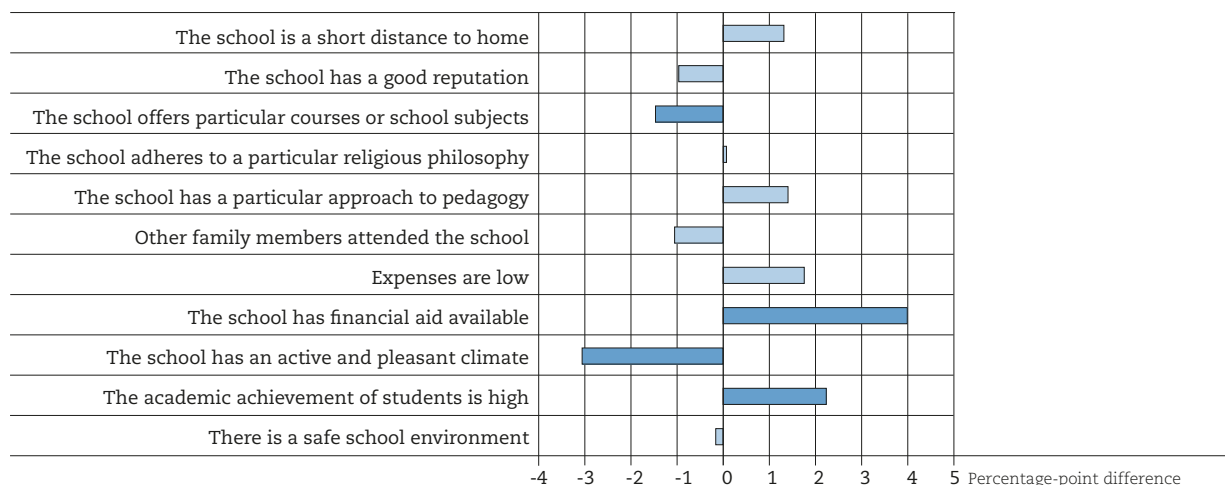
Notes: Results are averages for the countries and economies that distributed the parental questionnaire and have valid estimates.
Statistically significant differences in the percentage of immigrant and native parents who reported that they consider a criterion important when choosing a school are marked in a darker tone.
Socio-economic status is measured by the PISA index of economic, social and cultural status (ESCS).
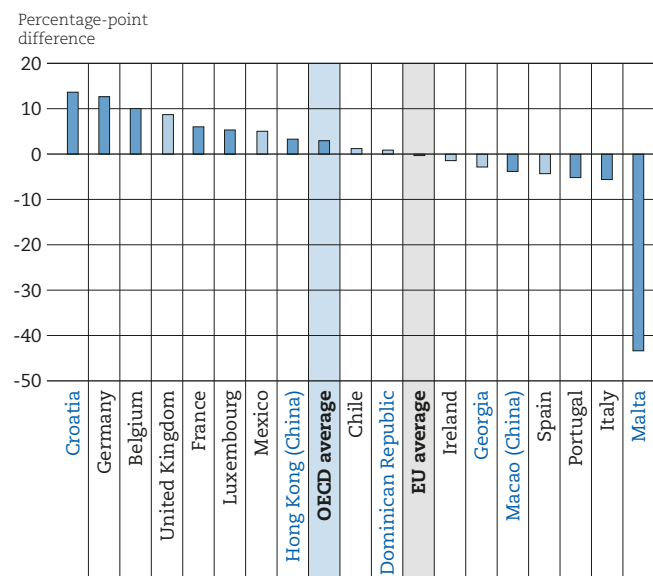**Source:** OECD, PISA 2015 and 2003 Database, Table 7.5.
StatLink ⟐⟐ http://dx.doi.org/10.1787/888933682186

Figure 7.3 indicates that, on average across the 17 countries and economies that distributed the parent questionnaire in PISA 2015 and had valid estimates, and after accounting for socio-economic status, there were no differences between immigrant and native parents in the importance they give to how distant the school is from home, the reputation of the school, the pedagogical approach used in the school or its religious philosophy, and the fact that other family members attended the school, that expenses are low, and that the school has a pleasant environment. However, the parents of immigrant students were more likely than the parents of native students to consider the availability of financial aid and the academic achievement of students in the school as important criteria to guide their choice. By contrast, the parents of native students were more likely than the parents of immigrant students to consider important the availability of particular courses and the overall climate in the school.

Table 7.5 (available on line) and Figures 7.4, 7.5 and 7.6, however, indicate that there are considerable differences across countries in the relative importance native and immigrant parents assign to the various criteria. In particular, Figure 7.4 suggests that, in Belgium, Croatia, France, Germany, Hong Kong (China) and Luxembourg, the parents of immigrant students were more likely than the parents of native students to consider the religious philosophy of the school. Conversely, in Italy, Macao (China), Malta and Portugal, the parents of native students were more likely to consider the religious philosophy of the school. Figure 7.5 shows that in Belgium, Germany, Hong Kong (China), Ireland, Luxembourg and the United Kingdom, the parents of immigrant students were more likely than the parents of native students to consider the availability of financial aid in the school, while in Mexico, the parents of native students were more likely to consider the availability of financial aid (financial support given to families to help them cover education expenses). By contrast, Figure 7.6 suggests that in Belgium, France, Germany, Hong Kong (China), Ireland, Luxembourg, Mexico and Spain, the parents of native students were more likely than the parents of immigrant students to consider whether the school has an active and pleasant climate.

Figure 7.4 ■ **Immigrant-native differences in the importance of a school's religious philosophy**

Difference in the percentage of immigrant parents and native parents who indicated that the religious philosophy the school adheres to is important when choosing a school, after accounting for socio-economic status

Notes: Results are displayed for the countries and economies that distributed the parent questionnaire and have valid estimates of immigrant-native gaps.

Statistically significant differences in the percentage of immigrant and native parents who reported that they consider the school's religious ideology important when choosing a school after accounting for their socio-economic status are marked in a darker tone.
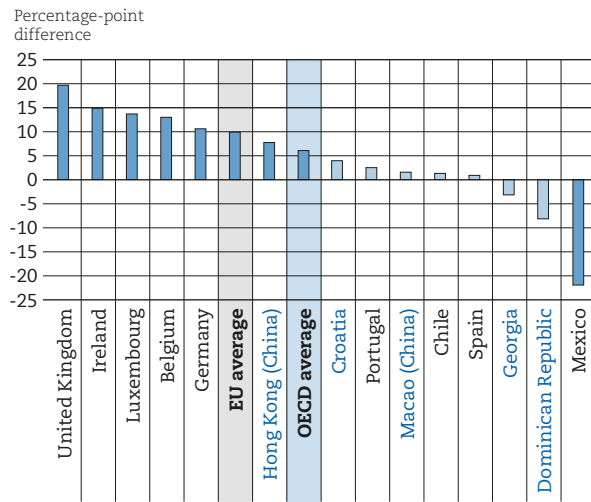
Socio-economic status is measured by the PISA index of economic, social and cultural status (ESCS).

Countries and economies are ranked in descending order of the difference in the percentage of immigrant and native parents who reported that they consider the school's religious ideology important when choosing a school, after accounting for their socio-economic status.

Source: OECD, PISA 2015 Database, Table 7.5.

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Figure 7.5 ■ **Immigrant-native differences in the importance of financial aid for school**

Difference in the percentage of immigrant parents and native parents who indicated that the availability of financial aid is important when choosing a school, after accounting for socio-economic status

Notes: Results are displayed for the countries and economies that distributed the parent questionnaire and have valid estimates of immigrant-native gaps.

Statistically significant differences in the percentage of immigrant and native parents who reported that they consider the availability of financial aid important when choosing a school after accounting for their socio-economic status are marked in a darker tone.
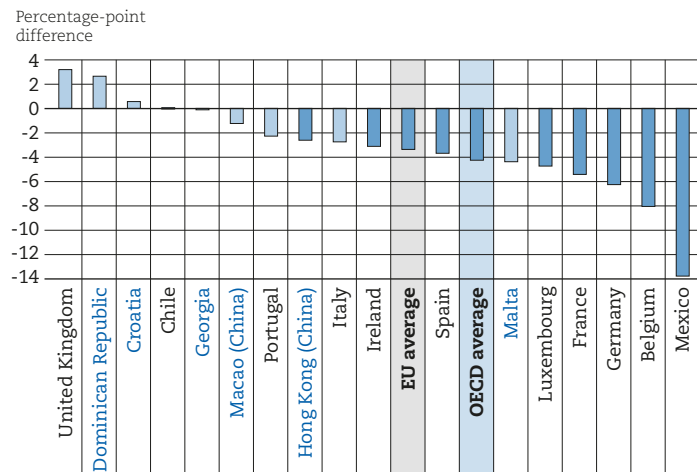
Socio-economic status is measured by the PISA index of economic, social and cultural status (ESCS).

Countries and economies are ranked in descending order of the difference in the percentage of immigrant and native parents who reported that they consider the availability of financial aid important when choosing a school, after accounting for their socio-economic status.

Source: OECD, PISA 2015 Database, Table 7.5.

StatLink ⧉ http://dx.doi.org/10.1787/888933682224

Figure 7.6 ■ **Immigrant-native differences in the importance of school climate**

Difference in the percentage of immigrant parents and native parents who indicated that knowing that the school has an active and pleasant climate is important when choosing a school, after accounting for socio-economic status

Notes: Results are displayed for the countries and economies that distributed the parent questionnaire and have valid estimates of immigrant-native gaps.

Statistically significant differences in the percentage of immigrant and native parents who reported that knowing that the school has an active and pleasant climate is important when choosing a school after accoutning for their socio-economic status are marked in a darker tone.

Socio-economic status is measured by the PISA index of economic, social and cultural status (ESCS)".

Countries and economies are ranked in descending order of the difference in the percentage of immigrant and native parents who reported that knowing that the school has an active and pleasant climate is important when choosing a school, after accounting for their socio-economic status.
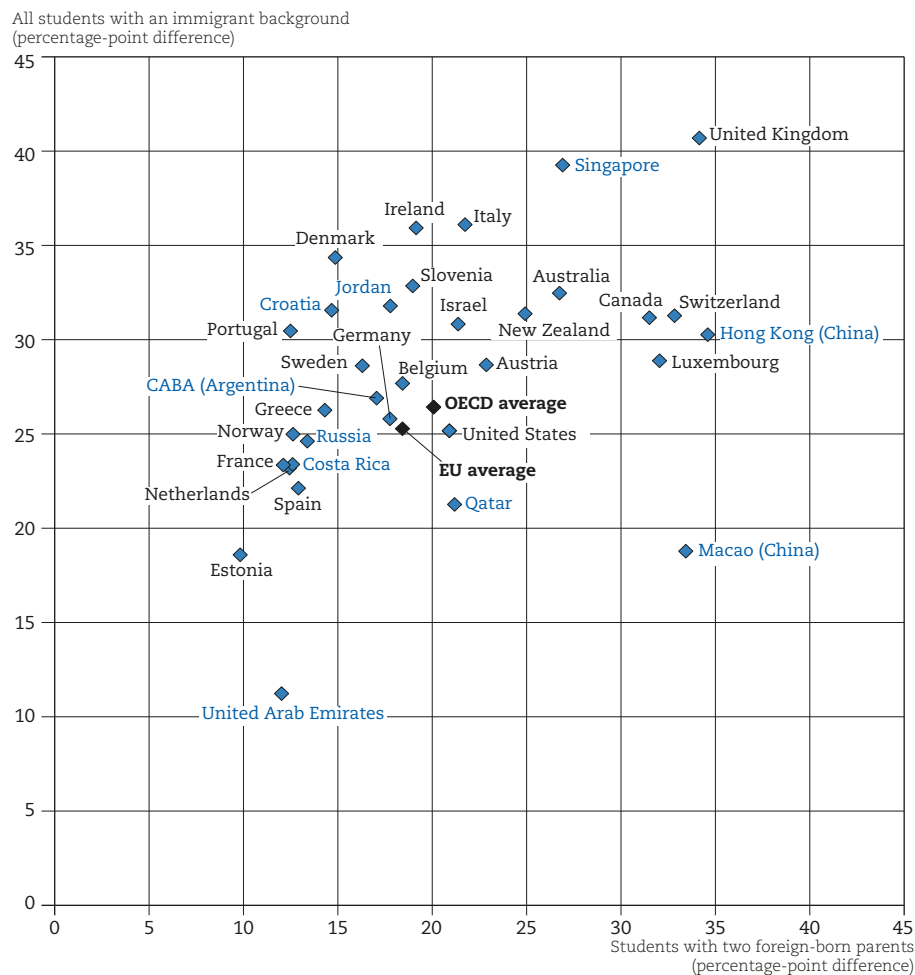
Source: OECD, PISA 2015 Database, Table 7.5.

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The effect of school composition, and the academic and well-being outcomes of immigrant students might be subject to thresholds or "tipping points" whereby the negative consequences of a high concentration of disadvantaged or students with an immigrant background might be particularly severe (Szulkin and Jonsson, 2007; Andersen and Thomsen, 2011). A number of studies on the impact of a high concentration of students with immigrant parents suggest that it is not immigrant background, *per se,* but, rather, the concentration of socio-economic disadvantage that has a negative effect on education outcomes (Rumberger and Palardy, 2005; van der Slik *et al.*, 2006; OECD, 2012; OECD, 2016b). However, little is known about the effect of the socio-economic and immigrant composition of a school's student population on the broader well-being outcomes of students with an immigrant background.

Measuring the concentration of students with an immigrant background in schools in a reliable and internationally comparable way is challenging in many respects, mainly because of the variation in the percentage of immigrant students across countries. PISA 2015 relied on two indices to measure the concentration of students with an immigrant background in schools. The first is the index of current concentration, which represents the percentage of students with and without an immigrant background that would have to be relocated from one school to another so that all schools would have an identical percentage of students with an immigrant background. The second measure is the index of maximum potential concentration, which represents the minimum percentage of students that would have to be moved across schools if all students with an immigrant background were allocated to the largest schools.

Figure 7.7 ▪ **Avoiding high concentrations of immigrant students in particular schools**
Distance between current and maximum potential concentration

Notes: Only countries where the percentage of immigrant students is higher than 6.25% are shown.
Source: OECD, PISA 2015 Database, Tables 7.6 and 7.7.
StatLink ⬛ᆒᆒ⬛ http://dx.doi.org/10.1787/888933682262

By defining country-specific thresholds for the school-level concentration of students with an immigrant background, these indices address some of the shortcomings of other concentration measures and provide a benchmark that reflects more accurately the relative similarity between the composition of schools and their social context.

The difference between the two indices indicates the distance between the current mix of native students and students with an immigrant background in schools and the highest possible degree of segregation of students with an immigrant background in a country/economy, given the overall percentage of students with an immigrant background and the size of the country's/economy's schools. The maximum potential concentration is a hypothetical scenario in which all immigrant students attend the largest schools in the country, and hence where the largest number of them can be found in the same schools and classrooms. Given this scenario, countries and economies where the difference between the two indices is larger can be seen as having greater success in avoiding segregating students with an immigrant background into particular schools.

Table 7.6 and Table 7.7 (available on line) report current and potential maximum levels of concentration of students with an immigrant background. The difference between the two is related to the fact that while Table 7.6 only considers students with two foreign-born parents (both native-born and foreign-born students), Table 7.7 also considers mixed-heritage students and returning foreign-born students. Table 7.6 reveals that current levels of concentration and the maximum levels of concentration of immigrant students that could occur in a country/economy differed the most – over 30 percentage points – in Canada, Hong Kong (China), Luxembourg, Macao (China), Switzerland and the United Kingdom. They were the most similar – lower than 15 percentage points – in Costa Rica, Croatia, Denmark, Estonia, France, Greece, the Netherlands, Norway, Portugal, the Russian Federation (hereafter "Russia"), Spain and the United Arab Emirates.

The picture changes, however, when considering mixed-heritage students and returning foreign born students. In particular, Table 7.6 shows that the United Kingdom had a very good record of avoiding the concentration of immigrant students in schools, while Estonia and the United Arab Emirates did comparatively poorly on this measure. Denmark did poorly when considering first- and second-generation immigrant students but very well when considering returning foreign-born and mixed-heritage students. Conversely, Macao (China) did very well when considering only first- and second-generation immigrant students, but comparatively poorly when considering mixed-heritage and returning foreign-born students.

Results presented in the left panel of Figure 7.8 indicate that, on average, the likelihood that students of similar socio-economic status will attain baseline levels of academic proficiency is lower when they attend schools with a high concentration of immigrant students. Across OECD countries, attending a school with between one in ten and one in four students with an immigrant background compared to attending a school where fewer than one in ten students has an immigrant background corresponds to a decrease of two percentage points in the probability that such a student will reach baseline levels of academic proficiency (three percentage points across EU countries).

PISA results show that the higher the concentration of immigrant students in a school, the larger the difference in academic outcomes. In 2015, across OECD countries, the difference in likelihood of attaining baseline academic proficiency between students attending schools where up to one in ten students is an immigrant student and those in schools where between one in four and one in two students has an immigrant background was four percentage points. The difference was 13 percentage points when comparing students in schools where up to one in 10 students has an immigrant background and students attending schools where more than one in two students have an immigrant background (across EU countries, these differences were even larger: eight percentage points for the first comparison and 19 percentage points for the second). Figure 7.8 reveals a large degree of heterogeneity across countries. In particular, a gradient effect is observed in Belgium, Denmark, France, Germany, Greece and Slovenia, while in Austria, Italy, Spain and Switzerland, only very high concentrations of immigrant students were associated with a decrease in the likelihood that students will reach baseline levels of academic proficiency.

Figure 7.8 ▪ **Academic proficiency and concentration of immigrant students in school**

Difference in the percentage of students attaining baseline academic proficiency compared to schools where less than 10% of students are immigrant students
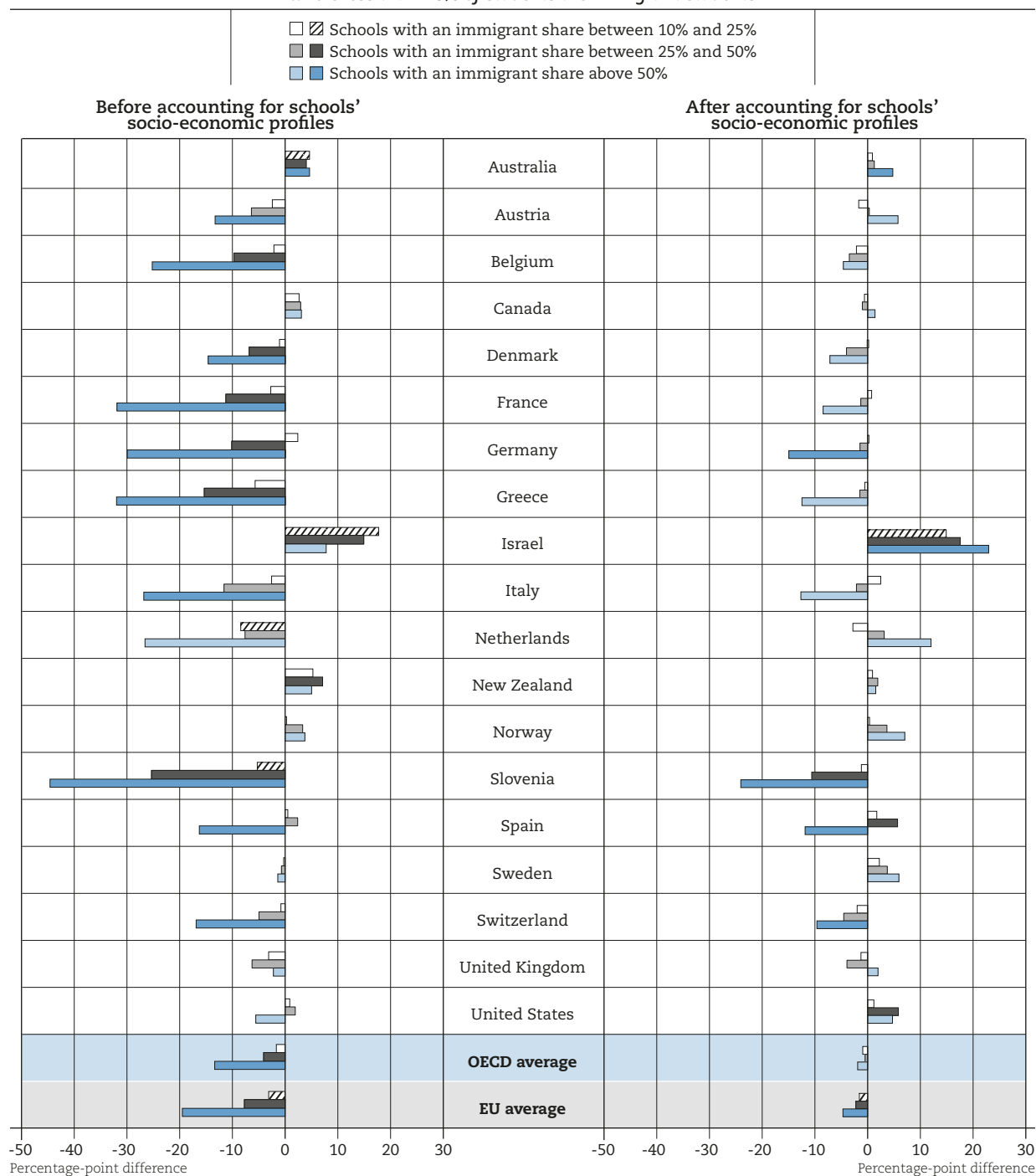
Notes: Only countries with valid estimates for schools with each immigrant share are shown.

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

Results in the left panel are obtained from regressions accounting for students' gender, socio-economic status and language spoken at home. The regressions used to obtain estimates for the right panel also accounted for the school's socio-economic profile.

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

Countries and economies are ranked in alphabetical order.

Source: OECD, PISA 2015 Database, Table 3.7.

StatLink ⟜☞ http://dx.doi.org/10.1787/888933682281

The right panel of Figure 7.8 suggests that most of the difference is due to the socio-economic composition of schools attended by a large number of immigrant students, and the detrimental effect of socio-economic disadvantage on academic performance. On average across OECD countries, and after accounting for the socio-economic profile of schools, no association can be identified between the percentage of immigrant students attending a school and the likelihood that students attending that school will attain baseline levels of academic proficiency. After accounting for schools' socio-economic profile, a high concentration of immigrant students was associated with poorer performance in Germany, Slovenia, Spain and Switzerland. Slovenia was the only country where students who attend schools where more than one in four students has an immigrant background are less likely to attain baseline levels of proficiency, after accounting for the school's socio-economic profile. Interestingly, the association between the concentration of immigrants in a school and academic performance was similar across students with and without an immigrant background (Table 7.9, available on line).

The concentration of immigrant students in schools appears to be even more weakly associated with students' ability to feel a sense of belonging at their school and their sense of identification with the school. Figure 7.9 suggests that, before accounting for the socio-economic profile of the school, the difference in the sense of belonging among students who attend a school where between one in ten and one in four students has an immigrant background, and students who attend schools where fewer than one in ten students is an immigrant student was significant only in Belgium (where students in the former group were five percentage points less likely to report a strong sense of belonging), the Netherlands (five percentage point less likely) and Slovenia (6 percentage point less likely). In Australia students in the former group were four percentage points more likely to report feeling like they belong at school. The difference was wider when comparing students who attend schools where fewer than one in 10 students has an immigrant background and students who attend schools where more than one in two students is an immigrant student. In Austria, Denmark, France and Switzerland, this difference amounted to more than five percentage points. Interestingly, in Australia, Norway and the United Kingdom, students' sense of belonging at school was stronger among students who attend schools where more than one in two students were immigrants.

Accounting for the socio-economic profile of schools explains most of the negative associations between high concentrations of immigrant students and a sense of belonging (although Switzerland is an important outlier). In Australia, Norway and the United Kingdom, larger concentrations of students with an immigrant background were generally associated with stronger feelings of belonging at school community among both native and immigrant students.

Table 7.11 (available on line) shows the association between the concentration of immigrants in a school and the share of immigrant and native students who report feeling like they belong at school. On average across OECD countries, after accounting for the socio-economic profile of the school, native students who in 2015 attended a school where over one in two students had an immigrant background were four percentage points less likely to report a sense of belonging at school compared to native students who attended schools where fewer than one in ten students was an immigrant student. The difference was as large as 26 percentage points in Switzerland.

Parental involvement in the school community
Learning requires an orderly, supportive and positive environment not only within the classroom but also outside (Jennings and Greenberg, 2009). A school's learning environment does not uniquely involve school climate; it includes any interactions among members of the school community. Parental involvement can help create a socially connected school where students, teachers, parents and principals work together to create a positive learning environment. Supportive relationships among teachers, students and families can also improve student performance, particularly among disadvantaged students (Crosnoe, Johnson and Elder, 2004; Hughes and Kwok, 2007). Parental involvement can thus improve the academic and social resilience of immigrant students.

In PISA 2015, the involvement of parents in the school community was measured by asking parents how many friends of their child and parents of their child's friends they know. It also asked how many of the school staff parents would feel comfortable talking to if they had a question about their child. Parents are defined as being involved in the school community if their response to all three questions was greater than three.

Figure 7.9 ▪ Sense of belonging and concentration of immigrant students in school

Difference in the percentage of students reporting a sense of belonging at school compared to schools where less than 10% of students are immigrant students
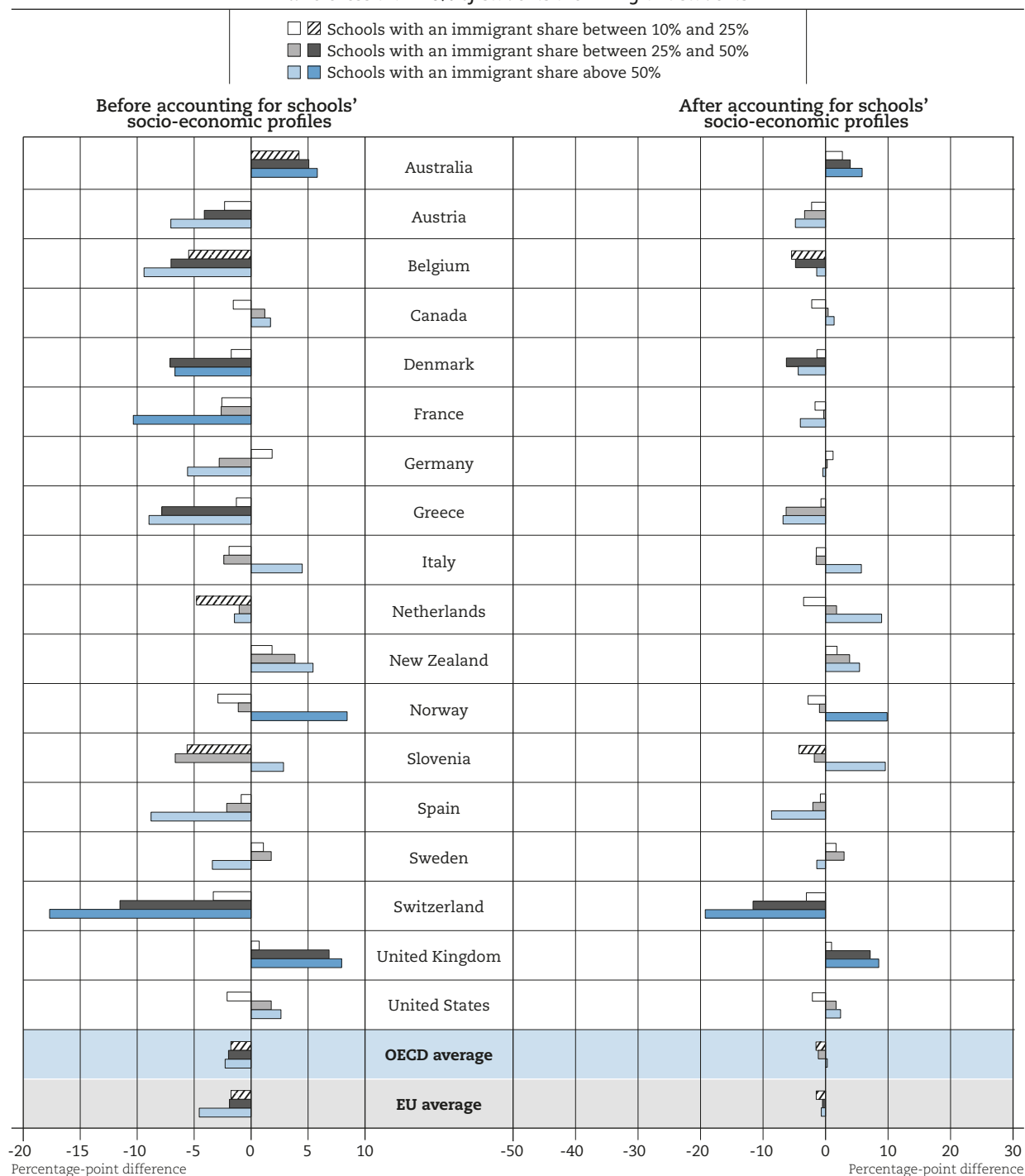
Notes: Only countries with valid estimates for schools with each immigrant share are shown.

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".

Results in the left panel are obtained from regressions accounting for students' gender, socio-economic status and language spoken at home. The regressions used to obtain estimates for the right panel also accounted for the school's socio-economic profile.

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

Source: OECD, PISA 2015 Database, Table 7.10.

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Figure 7.10 shows that in 11 out of 17 countries and economies where the parental questionnaire was distributed, the parents of immigrant students are less likely than the parents of native students to be involved in the school community. On average across OECD countries with available data, they were 17 percentage points less likely to be connected with the school community; across EU countries they were 19 percentage points less likely. In Germany, Ireland, Italy, Spain and the United Kingdom, the parents of immigrant students were more than 20 percentage points less likely than the parents of native students to be involved in the school community.

Figure 7.10 ■ **Students whose parents are involved in the school community, by immigrant background**
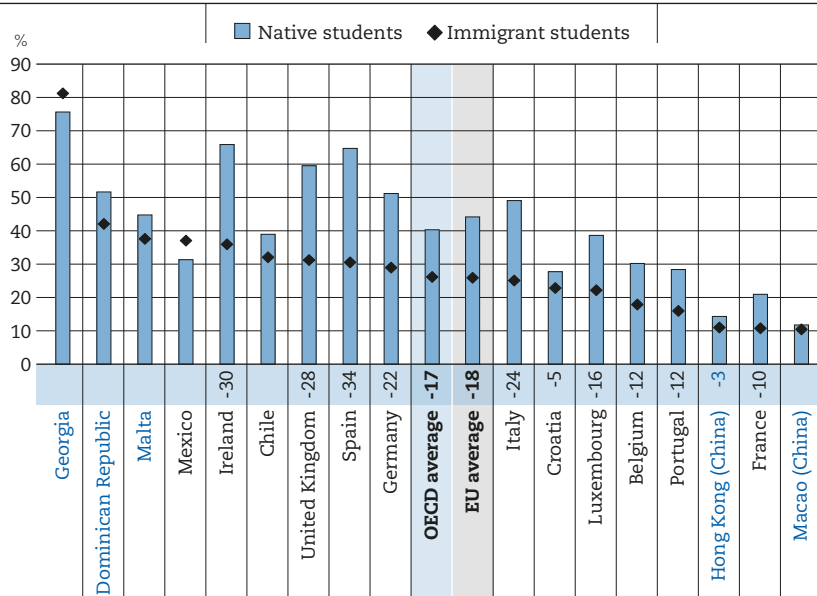
Notes: Only countries that distributed the parental questionnaire and have valid data on immigrant students are shown.

Involvement of parents in the school community is measured by asking parents how many friends of their child and parents of their child's friends they know, and how many of the school staff they would feel comfortable talking to if they had a question about their child. Parents are defined as being involved in the school community if their response to all three questions was greater than three.

Statistically significant differences between immigrant and native students are shown next to country/economy names. For the OECD and EU average, this number refers only to the subset of countries/economies with valid data on both groups of students.

Countries and economies are ranked in descending order of the percentage of immigrant students whose parents are involved in the school community.

Source: OECD, PISA 2015 Database, Table 7.12.

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Parents' involvement in the school community has a strong effect on the well-being of their children. Table 7.13 shows the association between having parents involved in the school community and the likelihood that students in those schools will reach baseline levels of academic proficiency[1], report high levels of sense of belonging at school[2], report that they are satisfied with their life[3], report low levels of schoolwork-related anxiety[4], and have high motivation to achieve[5]. On average across OECD countries, the children of parents involved in the community were six percentage points more likely to report that they feel like they belong at school and that they are satisfied with their life (seven or six percentage points, respectively, across EU countries). The effect is particularly strong in the United Kingdom: students with involved parents were around 12 percentage points more likely to report that they feel like they belong at school and that they are satisfied with their life. In the United Kingdom, the percentage of immigrant students whose parents reported being involved in the community was 28 percentage points lower than of native students. Effects were approximately the same in Luxembourg, but immigrant students were only 16 percentage points less likely than native students to have parents who were involved in the school community. In Ireland and Spain, the percentage of immigrant students whose parents were involved in the community were, respectively, 30 and 34 percentage points lower than that of native students, but the effect of parents' involvement in the school community on a child's sense of belonging at school and life satisfaction was about half as strong as in the United Kingdom.

In Ireland, Italy, Luxembourg and the United Kingdom, immigrant students were less likely to have parents involved in the school community and parental involvement is associated with an increased likelihood of reaching baseline academic proficiency of around four percentage points, at least. The effect of parental involvement in the school community on students' schoolwork-related anxiety and motivation to achieve are not as pronounced as on the other outcomes considered. In Germany, immigrant students are less likely than native students to have parents who are involved in the school community, and parental involvement increases the likelihood of students reporting low anxiety and high motivation by around five percentage points.

Table 7.13 ■ Parents' involvement in the school community, and students' academic and well-being outcomes

■ Statistically significant and **positive** value
■ Statistically significant and **negative** value
□ Missing or invalid estimate

	Percentage-point difference between immigrant and native students in the percentage of students whose parents are involved in the school community	Effect of parents' involvement in the school community (percentage-point change)				
		On the likelihood of attaining baseline academic proficiency	On the likelihood of reporting a sense of belonging at school	On the likelihood of reporting being satisfied with life	On the likelihood of reporting low schoolwork-related anxiety	On the likelihood of reporting high achievement motivation
Mexico	5.73	-0.52	0.70	2.64	2.16	1.60
Georgia	5.58	7.88	8.20			
Macao (China)	-1.34	-1.53	7.10	0.18	-3.14	4.31
Hong Kong (China)	-3.32	-0.45	6.13	9.46	2.42	5.33
Croatia	-4.89	3.10	3.13	3.98	-1.87	0.53
Chile	-6.88	5.60	3.95	5.74	2.61	-0.63
Malta	-7.17	5.74	13.71			
Dominican Republic	-9.59	2.13	2.05	3.68	0.56	-1.64
France	-10.19	-0.31	6.88	5.57	2.02	-0.08
Belgium	-12.31	1.88	3.46		1.99	4.32
Portugal	-12.41	-3.86	1.71	2.29	-2.40	2.50
Luxembourg	-16.44	4.25	11.11	9.04	4.35	1.27
OECD average	-17.37	1.95	5.58	5.65	1.93	1.35
EU average	-18.36	2.97	6.99	6.12	1.60	1.21
Germany	-22.22	1.16	5.38	5.02	5.49	4.33
Italy	-23.96	3.89	7.52	5.05	-1.73	-1.84
United Kingdom	-28.27	8.68	11.94	12.49	1.65	-0.82
Ireland	-29.91	4.38	6.79	6.05	3.85	0.00
Spain	-34.17	3.74	5.25	5.57	2.63	1.90

Notes: Only those countries with a valid estimate for the immigrant-native gap in the percentage of students whose parents are involved in the school community are displayed. The OECD and EU average percentage-point differences are based only on countries with reliable estimates for both native and immigrant students.

Involvement of parents in the school community is measured by asking parents how many friends of their child and parents of their child's friends they know, and how many of the school staff they would feel comfortable talking to if they had a question about their child. Parents are defined as being involved in the school community if their response to all three questions was greater than three.

Results on the effects of parents' involvement in the school community are obtained from regressions that account for students' gender, immigrant background and socio-economic status, as well as the socio-economic profile of schools.

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

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".

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

Students who reported 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".

Students who reported high motivation to achieve are students who reported that they "agree" or "strongly agree" with the statement "I want to be the best, whatever I do".

Countries and economies are ranked in descending order of the percentage-point difference between immigrant and native students in the percentage of students whose parents are involved in the school community.

Source: OECD, PISA 2015 Database Tables 7.12 and 7.24.

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Disciplinary climate

In PISA 2015, disciplinary climate was evaluated by asking students about the frequency with which "students don't listen to what the teacher says", "there is noise and disorder", "the teacher has to wait a long time for students to quiet down", "students cannot work well" and "students don't start working for a long time after the lesson begins" during their science lessons in school. Possible answers were "every lesson", "most lessons", "some lessons" and "never or hardly ever". Responses were combined to create an index of disciplinary climate with an average of zero and standard deviation of one across OECD countries. Since index scores are based on students' subjective perception of the disciplinary climate in their science class, school averages were calculated in order to obtain objective school-level measurements.
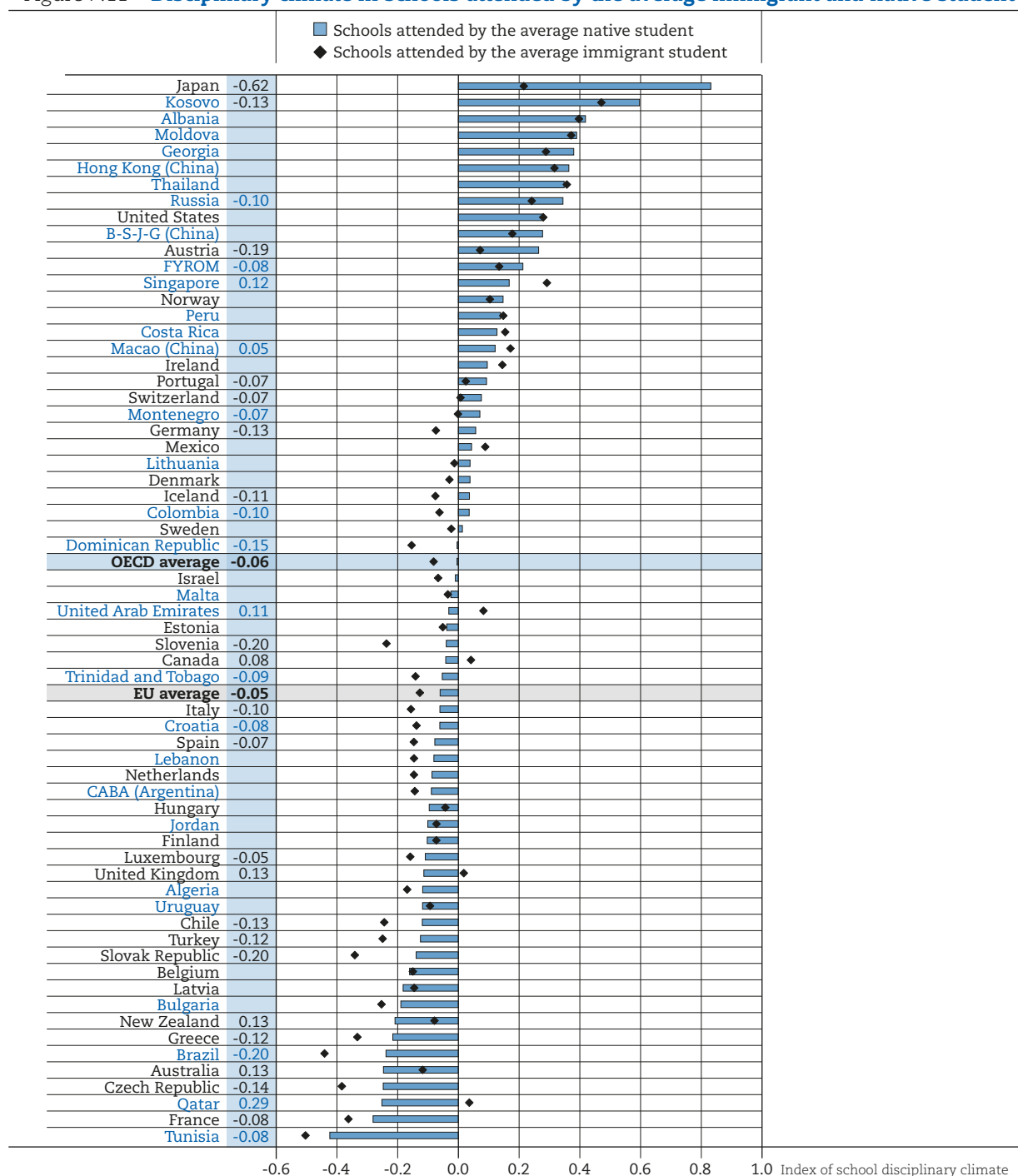
Figure 7.11 shows differences across countries and economies in the disciplinary climate of schools attended by native and immigrant students. It suggests that in 26 countries and economies out of the 63 considered, 15-year-old immigrant students in 2015 tended to be enrolled in schools characterised by a worse disciplinary climate. On average, the difference was not large: 0.06 point across OECD countries and 0.05 point across EU countries. However, large differences are observed across countries. For example, in Brazil, the Slovak Republic and Slovenia, immigrant students were more likely be enrolled in schools where the disciplinary climate was considerably worse compared to the disciplinary climate of schools in which native students were enrolled (a mean index difference of about 0.20 point). The difference was largest in Japan (0.62 point). By contrast, in Australia, Canada, Macao (China), New Zealand, Qatar, Singapore, the United Arab Emirates and the United Kingdom, immigrant students tended to be enrolled in schools with a more positive disciplinary climate than native students. Results reported in Table 7.14 (available on line) indicate that first- and second-generation immigrant students were enrolled in schools that had similar disciplinary climates and that, on average across OECD and EU countries, returning foreign-born students and native-born students with an immigrant background attended schools whose disciplinary climate was similar to those attended by native students.

But does disciplinary climate matter for academic performance, and social and emotional well-being? Table 7.15 shows the association between disciplinary climate, at the school level, and the likelihood that students in those schools will reach baseline levels of academic proficiency, report high levels of sense of belonging at school, report that they are satisfied with their life, report low levels of schoolwork-related anxiety, and have high motivation to achieve. Estimated associations control for socio-economic status at the individual and school level, the student's gender, his or her immigration background and the ISCED level of the class he or she is currently enrolled in.

Results suggest that a school's disciplinary climate was a strong predictor of academic achievement and well-being in PISA 2015. A 0.10-point increase in the index was associated with a change of between 0.04 and 3.77 percentage points in the probability of attaining baseline levels of academic proficiency. Since in many countries and economies the mean difference in the index between native and immigrant students was larger than 0.10 point, the findings indicate a strong association between the learning environment to which native and immigrant students are exposed and the likelihood that these students will attain baseline levels of academic proficiency. Schools' disciplinary climate is thus particularly important for the academic resilience of immigrant students.

The association between disciplinary climate and sense of belonging at school was also strong. A change of 0.10 point in the mean index corresponded to a difference of between 0.40 and 2.12 percentage points in the likelihood of students reporting a strong sense of belonging at school. The association between disciplinary climate and students' satisfaction with life was weaker but significant in most countries, while the association between disciplinary climate, on the one hand, and emotional and motivational outcomes (schoolwork-related anxiety and achievement motivation) on the other, was less pronounced.

In Austria, Brazil, Chile, Colombia, the Czech Republic, the Dominican Republic, Germany, Greece, Iceland, Italy, Japan, Kosovo, Russia, the Slovak Republic, Slovenia, and Turkey, on average, immigrant students attended schools whose disciplinary climate was considerably worse than the disciplinary climate in the schools attended by the average native student (mean index difference greater than 0.10 point). In several of these countries, this difference had a large effect on students' academic and well-being outcomes.

Figure 7.11 ■ **Disciplinary climate in schools attended by the average immigrant and native student**

■ Schools attended by the average native student
◆ Schools attended by the average immigrant student

Country/economy	Significant difference
Japan	-0.62
Kosovo	-0.13
Albania	
Moldova	
Georgia	
Hong Kong (China)	
Thailand	
Russia	-0.10
United States	
B-S-J-G (China)	
Austria	-0.19
FYROM	-0.08
Singapore	0.12
Norway	
Peru	
Costa Rica	
Macao (China)	0.05
Ireland	
Portugal	-0.07
Switzerland	-0.07
Montenegro	-0.07
Germany	-0.13
Mexico	
Lithuania	
Denmark	
Iceland	-0.11
Colombia	-0.10
Sweden	
Dominican Republic	-0.15
OECD average	**-0.06**
Israel	
Malta	
United Arab Emirates	0.11
Estonia	
Slovenia	-0.20
Canada	0.08
Trinidad and Tobago	-0.09
EU average	**-0.05**
Italy	-0.10
Croatia	-0.08
Spain	-0.07
Lebanon	
Netherlands	
CABA (Argentina)	
Hungary	
Jordan	
Finland	
Luxembourg	-0.05
United Kingdom	0.13
Algeria	
Uruguay	
Chile	-0.13
Turkey	-0.12
Slovak Republic	-0.20
Belgium	
Latvia	
Bulgaria	
New Zealand	0.13
Greece	-0.12
Brazil	-0.20
Australia	0.13
Czech Republic	-0.14
Qatar	0.29
France	-0.08
Tunisia	-0.08

-0.6   -0.4   -0.2   0.0   0.2   0.4   0.6   0.8   1.0 Index of school disciplinary climate

Notes: Only countries with valid data on immigrant students are shown.

The index of disciplinary climate was constructed based on students' responses about the frequency (i.e. "every lesson", "most lessons", "some lessons" and "never or hardly ever") with which "students don't listen to what the teacher says", "there is noise and disorder", "the teacher has to wait a long time for students to quiet down", "students cannot work well" and "students don't start working for a long time after the lesson begins" during their science lessons in school. The school score on the index was calculated as the average of the index values for students in the school.

Statistically significant differences between immigrant and native students are shown next to country/economy names. For the OECD and EU average, this number refers only to the subset of countries/economies with valid data on both groups of students.

Countries and economies are ranked in descending order of the average index of school disciplinary climate in schools attended by the average immigrant student.

Source: OECD, PISA 2015 Database, Table 7.14.

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Table 7.15 ▪ **School disciplinary climate, and students' academic and well-being outcomes**

	Statistically significant and **positive** value
	Statistically significant and **negative** value
	Missing or invalid estimate

	Difference in the index of school disciplinary climate between schools attended by the average immigrant student and those attended by the average native student	Effect of a 0.10-point increase in the school climate index (percentage-point change)				
		On the likelihood of attaining baseline academic proficiency	On the likelihood of reporting a sense of belonging at school	On the likelihood of reporting being satisfied with life	On the likelihood of reporting low schoolwork-related anxiety	On the likelihood of reporting high achievement motivation
Qatar	0.29	3.26	1.57	0.00	-0.63	0.20
United Kingdom	0.13	0.71	0.83	0.40	0.01	0.24
New Zealand	0.13	0.37	0.58		0.21	0.04
Australia	0.13	0.72	0.84		0.06	0.03
Singapore	0.12	0.31	0.59		0.40	-0.32
United Arab Emirates	0.11	1.99	1.46	0.65	-0.15	0.01
Canada	0.08	0.40	0.40		0.05	0.32
Hungary	0.05	1.72	1.08	0.49	-0.11	0.12
Macao (China)	0.05	3.58	2.12	0.81	-0.39	-0.91
Ireland	0.05	0.80	0.96	0.67	0.47	-0.08
Mexico	0.05	1.43	0.47	0.55	0.25	0.41
Latvia	0.04	0.72	0.20	0.49	0.17	-0.06
Finland	0.03	0.48	0.18	0.51	0.31	0.44
Jordan	0.03	0.73	1.09			
Costa Rica	0.03	1.21	-0.19	0.05	0.26	0.51
Uruguay	0.02	0.04	0.32	0.66	0.08	-0.07
Belgium	0.01	0.70	0.98	0.52	0.58	-0.50
Peru	0.01	0.72	0.80	0.89	-0.19	-0.14
Thailand	0.01	1.38	0.88	0.92	1.31	0.17
United States	0.00	1.26	0.50	0.22	0.21	-0.02
Malta	-0.01	2.57	0.73			
Estonia	-0.01	1.23	0.74	0.08	-0.04	-0.27
Moldova	-0.02	0.45	1.93			
Albania	-0.02	-0.90	0.72			
Sweden	-0.04	0.76	0.95		-0.18	0.06
Norway	-0.04	1.08	0.61		0.34	-0.19
Hong Kong (China)	-0.05	1.30	1.02	0.59	-0.01	0.12
Luxembourg	-0.05	1.73	0.82	0.03	0.41	-0.19
Algeria	-0.05	0.89	0.29			
Lithuania	-0.05	1.51	0.68	0.55	0.03	0.31
EU average	-0.05	1.34	0.85	0.50	0.19	-0.10
CABA (Argentina)	-0.05	0.82	0.68			
Israel	-0.06	0.44	m		0.09	0.09
Netherlands	-0.06	1.64	0.66	0.06	0.35	-0.35
OECD average	-0.06	1.06	0.71	0.44	0.18	-0.03
Bulgaria	-0.06	2.27	1.28	0.41	0.27	0.06
Lebanon	-0.07	1.20	2.02			
Denmark	-0.07	0.64	0.70		0.32	-0.43
Portugal	-0.07	0.31	0.38	0.53	0.21	0.07
Switzerland	-0.07	0.73	1.53	0.23	0.72	0.12
Spain	-0.07	0.43	0.20	0.80	0.24	0.02
Montenegro	-0.07	2.53	0.60	0.26	-0.04	-0.08
Croatia	-0.08	3.77	1.61	0.61	-0.05	-0.60
FYROM	-0.08	1.80	1.59			
Tunisia	-0.08	0.86	0.87	0.60	0.68	0.18
France	-0.08	1.07	0.81	0.90	-0.20	-0.02
Trinidad and Tobago	-0.09	2.32	0.80			
Georgia	-0.09	0.94	1.67			
Italy	-0.10	0.77	1.12	0.56	-0.02	0.11
Colombia	-0.10	1.29	0.78	0.48	0.33	0.17
B-S-J-G (China)	-0.10	1.98	1.10	1.26	0.38	0.08
Russia	-0.10	1.38	1.05	0.63	-0.29	0.38
Iceland	-0.11	0.42	0.37	0.06	0.27	-0.18
Greece	-0.12	2.38	1.28	0.67	0.14	-0.48
Turkey	-0.12	3.15	0.85	0.60	0.54	0.02
Chile	-0.13	1.92	0.77	0.06	0.11	0.10
Kosovo	-0.13	1.45	1.02			
Germany	-0.13	1.03	0.82	0.53	0.70	-0.23
Czech Republic	-0.14	1.25	0.91	0.27	0.07	-0.23
Dominican Republic	-0.15	0.73	0.58	0.44	0.03	0.12
Austria	-0.19	0.68	0.26	0.36	0.05	-0.27
Slovenia	-0.20	0.69	0.57	0.38	0.42	-0.07
Slovak Republic	-0.20	2.04	0.88	0.56	-0.13	-0.23
Brazil	-0.20	1.31	1.06	0.42	0.24	-0.16
Japan	-0.62	1.13	0.49	0.44	-0.38	0.34

Notes: Only those countries with a valid estimate for the immigrant-native gap in the school disciplinary climate index are displayed. The OECD and EU average percentage-point differences are based only on countries with reliable estimates for both native and immigrant students.

The index of disciplinary climate was constructed based on students responses about the frequency (i.e. "every lesson", "most lessons", "some lessons" and "never or hardly ever") with which "students don't listen to what the teacher says", "there is noise and disorder", "the teacher has to wait a long time for students to quiet down", "students cannot work well" and "students don't start working for a long time after the lesson begins" during their science lessons in school. The school score on the index was calculated as the average of the index values for students in the school.

Results on the effects of school climate are obtained from regressions accounting for students' gender, immigrant background, socio-economic status, the ISCED level of the class where they are enrolled, and the socio-economic profile of schools.

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

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".

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

Students who reported 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".

Students who reported high motivation to achieve are those who reported that they "agree" or "strongly agree" with the statement "I want to be the best, whatever I do".

Countries and economies are ranked in descending order of the mean difference in the index of school disciplinary climate between schools attended by the average immigrant student and those attended by the average native student.

Source: OECD, PISA 2015 Database Tables 7.14 and 7.24.

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In Brazil, Chile, Colombia, the Czech Republic, Germany, Greece, Japan, Kosovo, Russia, the Slovak Republic and Turkey, a 0.10-point change in the disciplinary climate index reduced the likelihood of students attaining baseline academic proficiency by more than 1 percentage point. In Turkey, the effect amounted to a three percentage-point difference. The effects on the likelihood of students feeling like they belong at school were smaller within this group of countries; it is larger than one percentage point only in Brazil, Greece, Italy, Kosovo and Russia.

Truancy

Truancy is also a factor shaping the learning environment at school (OECD, 2016b). When truancy is pervasive, not only do many students miss learning opportunities, thus reducing opportunities for peer-to-peer learning, the pace of instruction is disrupted, teacher motivation and self-efficacy decline, and students are exposed to an atmosphere that devalues learning. Furthermore, truant students can generate resentment among students who attend class regularly; they might also tempt other students to skip class as well (Wilson et al., 2008). For immigrant students, truancy can also affect the likelihood of being academically resilient.
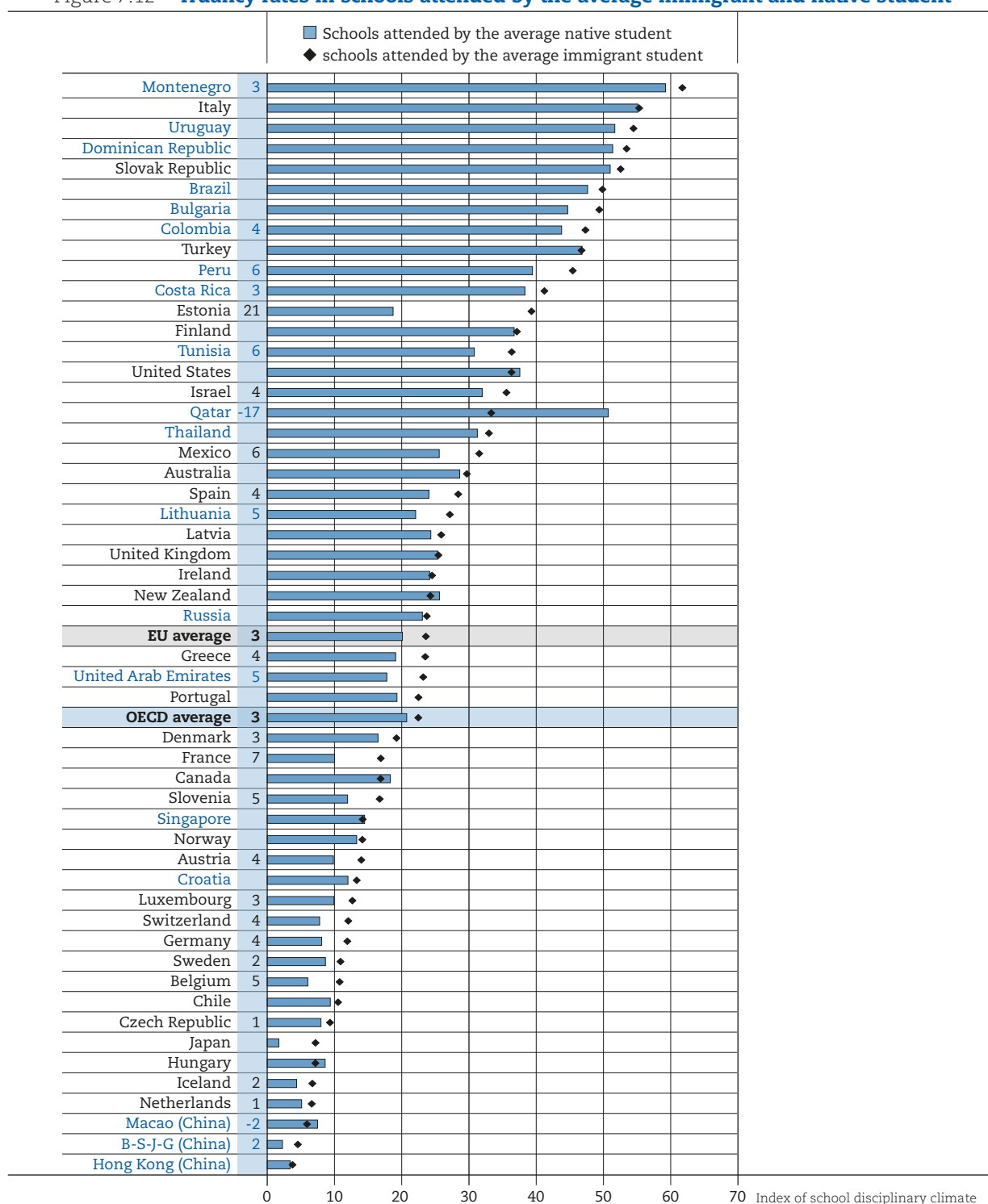
PISA 2015 measured truancy by asking students how many school days they had skipped in the two weeks prior the PISA test. In this chapter, truancy reflects the percentage of students in a school who reported that they had skipped at least one day of school in that two-week period.

Figure 7.12 shows that immigrant students in 2015 on average attended schools with higher truancy rates than the schools that native students attended. On average across OECD and EU countries, the average immigrant student attended a school where the rate of truancy was three percentage points higher than the average rate in schools attended by the average native student. The difference in truancy rates between the schools attended by the average immigrant and the schools attended by the average native was larger than five percentage points in Estonia (21 percentage points), France, Lithuania, Mexico, Peru, Tunisia and the United Arab Emirates. In Macao (China) and Qatar, immigrant students, on average, attended schools where the truancy rate was lower than in schools attended by native students.

Table 7.16 (available on line) shows that, on average, foreign-born returning students and native students of mixed heritage also attended schools where truancy was more widespread than in the schools that native students attended, although gaps between these two groups of students with an immigrant background and native students were smaller than those between other groups of immigrant students. On average across OECD countries, returning foreign-born students and native students of mixed heritage attended schools where the percentage of truant students was one percentage point larger than in schools attended by native students (two and one percentage points larger respectively across EU countries). Interestingly, it is often the case that in countries where immigrant students in 2015 were enrolled in schools with higher rates of truancy, the same was true for foreign-born returning students and native students of mixed heritage. This is observed in Austria, Estonia and Switzerland, where the differences between natives and students with an immigrant background were above average across all immigrant backgrounds.

Table 7.17 shows the association between the percentage of students in a school who play truant and the likelihood that students in that school will reach baseline levels of academic proficiency, report a strong sense of belonging, report being satisfied with their life, have low levels of schoolwork-related anxiety, and are highly motivated to achieve.

Table 7.17 indicates that the adverse effects of school level truancy rates were strongest on academic proficiency and sense of belonging in those countries and economies with less truancy. In Beijing-Shanghai-Jiangsu-Guangdong (China) (hereafter "B-S-J-G [China]") and the Netherlands, in 2015 a 10 percentage-point increase in the rate of truancy in a school was associated with a 14 percentage-point reduction in the likelihood that a student attained baseline levels of academic proficiency. However, since in these two economies the difference in average truancy between the schools that native and immigrant students attended was small (about two percentage points), school-level truancy did not explain much of the difference in academic outcomes between native and immigrant students.

Figure 7.12 ■ **Truancy rates in schools attended by the average immigrant and native student**

■ Schools attended by the average native student
◆ schools attended by the average immigrant student

Country	diff	
Montenegro	3	
Italy		
Uruguay		
Dominican Republic		
Slovak Republic		
Brazil		
Bulgaria		
Colombia	4	
Turkey		
Peru	6	
Costa Rica	3	
Estonia	21	
Finland		
Tunisia	6	
United States		
Israel	4	
Qatar	-17	
Thailand		
Mexico	6	
Australia		
Spain	4	
Lithuania	5	
Latvia		
United Kingdom		
Ireland		
New Zealand		
Russia		
EU average	**3**	
Greece	4	
United Arab Emirates	5	
Portugal		
OECD average	**3**	
Denmark	3	
France	7	
Canada		
Slovenia	5	
Singapore		
Norway		
Austria	4	
Croatia		
Luxembourg	3	
Switzerland	4	
Germany	4	
Sweden	2	
Belgium	5	
Chile		
Czech Republic	1	
Japan		
Hungary		
Iceland	2	
Netherlands	1	
Macao (China)	-2	
B-S-J-G (China)	2	
Hong Kong (China)		

Index of school disciplinary climate (0, 10, 20, 30, 40, 50, 60, 70)

Notes: Only countries with valid data on immigrant students are shown.

The truancy rate is defined as the percentage of students in a school who reported that they had skipped at least one day of school in the two weeks prior to the PISA test.

Statistically significant differences between immigrant and native students are shown next to country/economy names. For the OECD and EU average, this number refers only to the subset of countries/economies with valid data on both groups of students.

Countries and economies are ranked in descending order of the average percentage of truant students in schools attended by the average immigrant student.

Source: OECD, PISA 2015 Database, Table 7.16.

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Table 7.17 ■ **School-level truancy, and students' academic and well-being outcomes**

Legend:
- Statistically significant and **positive** value
- Statistically significant and **negative** value
- Missing or invalid estimate

	Percentage-point difference in the percentage of truant students in schools attended by the average immigrant student and those attended by the average native student	Effect of a 10 percentage-point increase in the percentage of truant students in a school (percentage-point change)				
		On the likelihood of attaining baseline academic proficiency	On the likelihood of reporting a sense of belonging at school	On the likelihood of reporting being satisfied with life	On the likelihood of reporting low schoolwork-related anxiety	On the likelihood of reporting high achievement motivation
Estonia	20.59	-1.92	-1.83	-0.39	-0.05	0.91
France	6.87	-6.70	-2.04	-0.99	0.14	2.54
Peru	6.00	-2.46	0.61	0.87	-0.91	-0.44
Mexico	5.95	-4.97	-1.75	-0.37	-2.00	-1.14
Tunisia	5.57	-1.80	-0.85	-0.09	-0.12	-0.72
Japan	5.45	-14.62	-6.64	-3.92	7.52	-2.50
United Arab Emirates	5.42	1.53	-1.83	-1.80	-3.16	-0.94
Lithuania	5.09	-6.69	-2.07	-1.06	0.98	-0.42
Slovenia	4.77	-7.82	-3.56	-0.46	0.20	1.78
Belgium	4.73	-6.41	-5.23	1.54	-2.97	3.94
Bulgaria	4.70	-4.48	-2.93	-0.40	0.93	1.25
Greece	4.41	-8.44	-2.24	-1.51	0.49	0.87
Spain	4.36	-2.76	0.07	-1.10	0.42	1.28
Switzerland	4.26	-4.69	-4.53	-0.93	-1.25	0.51
Austria	4.16	-5.43	-3.00	-1.26	0.96	1.80
Germany	3.81	-4.77	-1.10	-1.28	-1.01	2.08
EU average	3.61	-5.18	-2.57	-0.88	-0.22	1.13
Israel	3.60	-1.45			-3.00	-0.02
Colombia	3.55	-2.70	-1.36	-0.14	-0.67	-0.46
Costa Rica	2.90	-2.30	-0.34	-0.08	0.08	0.37
Uruguay	2.78	-0.35	-0.31	-0.19	0.11	0.10
Denmark	2.75	-2.53	-1.58		-0.44	1.26
Luxembourg	2.75	-10.16	-10.15	-2.94	-7.38	6.10
OECD average	2.70	-5.06	-2.63	-1.00	-0.22	0.85
Montenegro	2.51	-1.09	-0.52	-0.63	2.07	-0.86
Iceland	2.34	-4.79	-2.27	-2.60	0.18	2.91
B-S-J-G (China)	2.29	-13.66	-5.90	-6.28	-0.03	0.79
Sweden	2.23	-3.75	-2.82		-0.10	-0.11
Brazil	2.21	-2.35	-1.21	-0.68	-0.06	0.49
Dominican Republic	2.07	-2.42	-0.94	-0.53	-0.77	0.83
Thailand	1.73	-4.34	-1.77	-1.34	-1.63	-0.06
Portugal	1.73	-2.14	-1.01	-0.64	-0.35	0.65
Slovak Republic	1.55	-1.64	-0.58	-0.18	0.92	1.00
Latvia	1.55	-4.39	-2.24	-1.82	0.30	0.26
Netherlands	1.50	-14.06	-5.13	-0.90	-0.75	1.66
Czech Republic	1.35	-7.07	-2.64	-1.44	0.21	-0.66
Croatia	1.30	-12.04	-4.38	-2.81	1.03	1.26
Chile	1.16	-6.58	-1.30	1.28	-2.08	0.79
Australia	1.06	-0.92	0.01		-0.11	-0.29
Norway	0.84	-3.36	-3.42		0.00	2.18
Russia	0.65	-3.91	-2.39	-1.33	0.54	0.82
Finland	0.40	-0.13	0.16	-0.60	-0.33	-2.38
Hong Kong (China)	0.36	-17.03	-6.94	-7.94	-0.05	-2.03
Ireland	0.32	-1.56	-1.64	-0.14	0.27	0.97
Italy	0.19	-4.97	0.03	-0.62	-0.58	2.52
United Kingdom	0.08	-1.53	-0.90	-0.30	-0.31	-0.09
Turkey	-0.07	0.26	-0.65	-0.81	0.21	-0.22
Singapore	-0.28	-2.75	-0.74		-0.95	0.11
United States	-1.24	-1.83	-0.94	0.34	-0.10	-0.22
New Zealand	-1.35	-3.59	-1.21		-0.66	0.10
Canada	-1.45	-3.95	-0.68		-2.25	4.90
Hungary	-1.45	-6.08	-2.37	0.40	0.95	0.73
Macao (China)	-1.58	-15.80	-2.89	-5.39	1.87	6.23
Qatar	-17.40	-7.54	-2.21	0.96	2.62	0.15

Notes: Only those countries with a valid estimate for the difference in the percentage of truant students in schools attended by the average immigrant student and those attended by the average native student are displayed. The OECD and EU average percentage-point differences are based only on countries with reliable estimates for both native and immigrant students.

The percentage of truant students in a school is defined as the percentage of students in a school who reported that they had skipped at least one day of school in the two weeks prior to the PISA test.

Results on the effects of school average truancy are obtained from regressions accounting for students' gender, immigrant background, socio-economic status, the ISCED level of the class where they are enrolled, and the socio-economic profile of schools.

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

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".

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

Students who reported 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".

Students who reported high motivation to achieve are those who reported that they "agree" or "strongly agree" with the statement "I want to be the best, whatever I do".

Countries and economies are ranked in descending order of the percentage-point difference in the percentage of truant students in schools attended by the average immigrant student and those attended by the average native student.

Source: OECD, PISA 2015 Database Tables 7.16 and 7.24.

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In another set of countries, the effects of truancy were weaker, but the average difference between schools attended by the average native student and those attended by the average immigrant student was larger. In Belgium, France, Greece, Lithuania and Slovenia, where this difference was more than four percentage points, a 10 percentage-point increase in the percentage of students who played truant during the two weeks prior to the PISA test reduced the probability that students attained baseline academic proficiency by at least six percentage points. Truancy's negative effect on students' sense of belonging ranged from 1 to 10 percentage points; its effects on life satisfaction, schoolwork-related anxiety and motivation were small.

Bullying

Relationships between students also affect school climate and its conduciveness to effective learning and well-being. Bullying is a form of student-on-student interaction that has harmful effects on individual students, their families and the school community. Bullies or victims of bullying perform worse academically and are more likely to show symptoms of depression, feel lonely and have low self-esteem (Konishi et al. 2010; Townsend et al., 2008; Haynie et al., 2001; Kochel et al., 2012; Striegel-Moore et al., 2002). Students who are frequently bullied may feel constantly insecure and have difficulties finding their place at school (Rivara and Le Menestrel, 2016). They are also more likely to experience schoolwork-related anxiety (Berry and Hunt, 2009) and to report low satisfaction with life (OECD, 2017).

Immigrant students are more likely to be victimised because of differences in language, culture, ethnicity and appearance (Qin, Way and Rana, 2008). They can be targeted because of poor language proficiency (Peguero, 2008) or long-standing conflicts between ethnic or national groups (McKenney et al. 2006). Rates of victimisation are higher among recent arrivals (OECD, 2017) because of their unfamiliarity with the language or weaker social networks.

Figure 7.13 ■ **Victims of frequent bullying, by immigrant background**
Based on students' self-reports
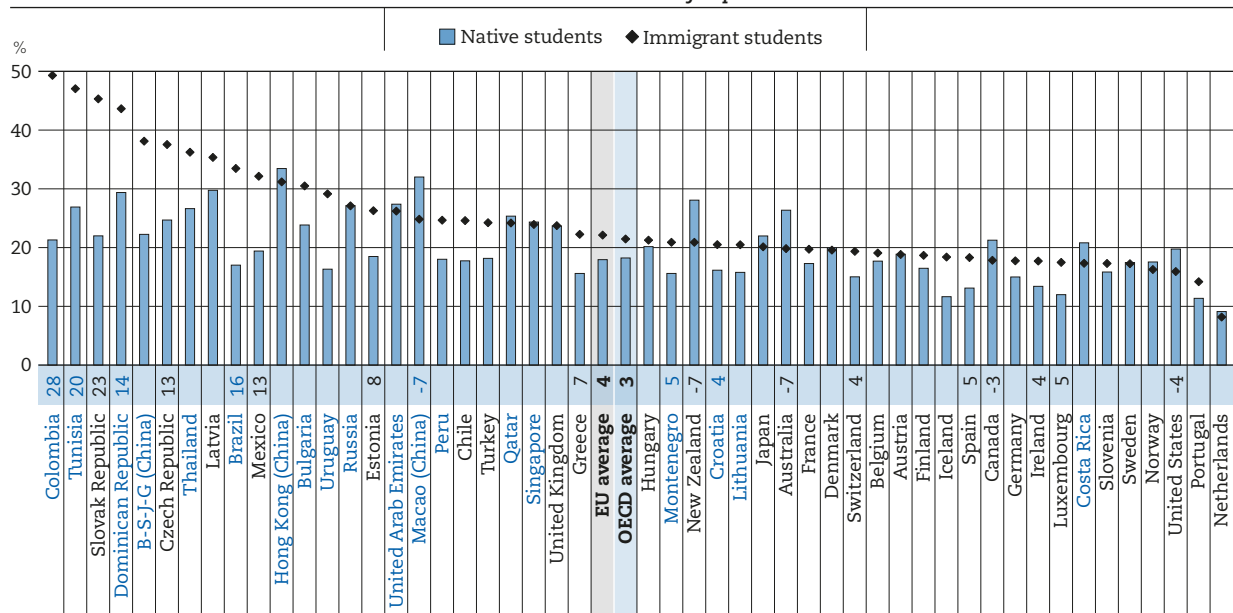
Notes: Only countries with valid data on immigrant students are shown.

Students who reported being frequently bullied are those who answered "a few times a month" or "once a week or more" to at least one of the the questions about how often, during the previous 12 months: "Other students left me out of things on purpose"; "Other students made fun of me"; "I was threatened by other students"; "Other students took away or destroyed things that belong to me"; "I got hit or pushed around by other students"; and "Other students spread nasty rumours about me".

Statistically significant differences between immigrant and native students are shown next to country/economy names. For the OECD and EU average, this number refers only to the subset of countries/economies with valid data on both groups of students.

Countries and economies are ranked in descending order of the percentage of immigrant students who reported being victims of frequent bullying.

Source: OECD, PISA 2015 and 2012 Database, Table 7.18.

StatLink ⫶⫶⫶ http://dx.doi.org/10.1787/888933682376

In PISA 2015, bullying was measured by asking students how often they experienced the following in the previous 12 months: "other students left me out of things on purpose"; "other students made fun of me"; "I was threatened by other students"; "other students took away or destroyed things that belong to me"; "I got hit or pushed around by other students"; or "other students spread nasty rumours about me". Possible responses were "never or almost never", "a few times a year", "a few times a month", "once a week or more". Answers were coded into binary responses where the first two answers correspond to "rarely" and the latter two are considered "often". The six items were then summarised into a single binary variable indicating whether a child reported that he or she had frequently experienced at least one form of bullying in the previous 12 months.

Figure 7.13 shows that PISA results are consistent with the finding in the literature that immigrant students are more likely than native students to be victims of bullying. On average across OECD countries, the percentage of immigrant students who reported having been victim of at least one form of bullying in the previous 12 months was three percentage points greater than that of native students (four percentage points greater across EU countries). In Brazil, Colombia, the Czech Republic, the Dominican Republic, Mexico, the Slovak Republic and Tunisia, the difference was greater than 10 percentage points. By contrast, in Australia, Canada, Macao (China), New Zealand and the United States, native students were more likely than immigrant students to be victims of frequent bullying.

Results show that, in 40 out of the 50 countries and economies that included questions on bullying in the student questionnaire and had valid data on immigrant students, victims of frequent bullying were less likely to attain baseline levels of proficiency in the three core PISA subjects. On average across OECD countries, they were six percentage points less likely to do so. In Croatia, the Czech Republic, Greece, Luxembourg, Montenegro, Portugal, the Slovak Republic and Spain, where immigrant students were more likely to be frequent victims of bullying, these students were more than eight percentage points less likely to attain baseline academic proficiency (Table 7.19).

Table 7.19 shows that bullying has strong adverse effects on immigrant students' sense of belonging at school and satisfaction with life. In all countries and economies with available data, students who reported being frequent victims of at least one form of bullying in the previous 12 months were less likely to feel satisfied with their life or feel that they belong at school. On average across OECD and EU countries, the percentages of students who reported feeling like they belong at school and being satisfied with life were 23 and 18 percentage points lower, respectively, among bullied students than among students who reported that they were not frequently bullied during that period (22 and 18 percentage points, respectively, across EU countries). In all countries and economies where immigrant students were more likely to be victims of frequent bullying, the adverse effects of bullying on both immigrant students' likelihood of being satisfied with life and the likelihood of reporting a sense of belonging was more than 11 percentage points. Effects were particularly strong in Ireland, where immigrant students were 4 percentage points more likely than native students to be frequent victims of bullying, and where bullied students were 30 percentage points less likely than native students to feel like they belong at school and 24 percentage points less likely to be satisfied with their life. There bullying played a considerably role in decreasing the social and emotional resilience of immigrant students.

Frequently bullied students were less likely to enjoy low levels of schoolwork-related anxiety in all countries and economies with available data except Japan. On average across OECD and EU countries, frequently bullied students were 10 percentage points less likely to report low levels of such anxiety. In countries where immigrant students were more often frequent victims of bullying, the adverse effects of bullying on the likelihood of having low levels of anxiety ranged from two percentage points (in Brazil) to 17 percentage points in Switzerland. The effects of bullying on achievement motivation were not statistically significant in the majority of countries and economies.

Student-teacher interactions

The well-paced and orderly instruction that can occur in a positive disciplinary climate where students attend school regularly appears to be a necessary, but not a sufficient, condition to ensure that immigrant students receive the support they need to become academically, socially and emotionally resilient.

Table 7.19 ■ Frequent bullying, and students' academic and well-being outcomes

		Statistically significant and **positive** value
		Statistically significant and **negative** value
		Missing or invalid estimate

	Percentage-point difference between immigrant and native students in the percentage of students who reported being victims of frequent bullying	Effect of being bullied frequently (percentage-point change)				
		On the likelihood of attaining baseline academic proficiency	On the likelihood of reporting a sense of belonging at school	On the likelihood of reporting being satisfied with life	On the likelihood of reporting low schoolwork-related anxiety	On the likelihood of reporting high achievement motivation
Colombia	28.01	-5.41	-13.13	-13.84	-3.58	-1.18
Slovak Republic	23.32	-8.71	-23.25	-17.91	-7.70	1.69
Tunisia	20.14	-1.86	-15.55	-14.31	-10.14	-0.23
Brazil	16.46	-4.79	-20.66	-13.88	-1.85	-0.35
B-S-J-G (China)	15.86	-3.85	-18.67	-17.78	-6.84	-0.70
Dominican Republic	14.26	-2.47	-11.69	-11.98	-3.43	-1.24
Czech Republic	12.85	-8.04	-19.14	-18.12	-10.56	-0.04
Uruguay	12.82	-4.27	-21.28	-18.99	-2.75	3.05
Mexico	12.73	-5.88	-18.66	-14.37	-9.70	-0.57
Thailand	9.60	-9.28	-17.93	-10.87	-14.83	-0.46
Estonia	7.80	-0.58	-19.71	-13.13	-7.57	0.83
Chile	6.85	-6.56	-21.65	-15.51	-13.49	0.47
Iceland	6.75	-6.99	-25.92	-26.79	-12.21	-2.53
Greece	6.66	-8.87	-26.23	-18.42	-5.47	2.88
Bulgaria	6.65	-4.31	-14.40	-14.19	-9.87	2.03
Peru	6.65	-5.52	-16.67	-15.44	-5.13	-2.24
Turkey	6.07	-4.49	-14.62	-18.76	-6.63	-1.76
Latvia	5.60	-6.81	-19.46	-13.02	-11.05	1.74
Luxembourg	5.49	-11.38	-24.27	-18.18	-8.64	4.90
Montenegro	5.30	-8.52	-15.51	-14.58	-3.35	3.10
Spain	5.19	-8.49	-22.50	-18.13	-7.83	1.02
Lithuania	4.70	-7.47	-9.64	-18.58	-7.37	-1.59
Croatia	4.35	-9.28	-22.24	-16.83	-14.54	3.20
Switzerland	4.33	-6.26	-24.37	-18.91	-17.15	3.58
Ireland	4.30	-2.15	-30.27	-24.24	-9.85	0.11
EU average	4.23	-6.71	-22.34	-18.22	-10.01	1.80
OECD average	3.11	-5.97	-23.15	-18.13	-9.86	1.25
Portugal	2.83	-11.06	-25.55	-18.08	-9.53	-2.56
Germany	2.75	-5.25	-29.48	-21.29	-15.97	-1.22
France	2.43	-5.43	-9.13	-16.79	-12.28	4.42
Finland	2.20	-4.46	-30.14	-14.57	-10.06	1.55
Slovenia	1.46	-6.89	-20.99	-21.23	-6.65	6.79
Belgium	1.38	-4.55	-21.12	-22.40	-13.04	3.09
Hungary	1.10	-6.56	-26.56	-18.56	-11.37	-1.88
United Kingdom	0.04	-6.30	-31.71	-24.03	-8.42	-1.01
Austria	-0.04	-2.90	-20.41	-16.77	-11.06	2.26
Russia	-0.05	-3.79	-22.09	-14.46	-6.03	2.98
Sweden	-0.20	-6.46	-18.01		-6.18	1.23
Denmark	-0.40	-7.33	-20.83		-7.07	5.02
Singapore	-0.41	-7.14	-25.88		-6.06	0.46
Netherlands	-0.94	-7.39	-30.72	-17.27	-11.83	4.59
Qatar	-1.16	-8.96	-23.14	-17.94	-10.80	-2.35
United Arab Emirates	-1.18	-11.83	-22.24	-15.54	-9.60	-2.32
Norway	-1.28	-7.35	-32.68		-8.14	-0.20
Japan	-1.85	-1.85	-14.58	-13.77	-1.81	1.27
Hong Kong (China)	-2.28	-1.13	-12.23	-11.40	-6.46	-2.46
Canada	-3.42	-6.73	-26.51		-7.88	1.31
Costa Rica	-3.49	1.10	-16.01	-19.59	-3.07	-4.57
United States	-3.83	-7.22	-28.10	-19.56	-8.48	-0.54
Australia	-6.53	-8.50	-34.39		-10.46	-0.99
New Zealand	-7.18	-7.13	-30.27		-11.84	-1.23
Macao (China)	-7.18	-7.35	-20.07	-11.55	-8.95	7.41

Notes: Only those countries with a valid estimate for the difference in the percentage of immigrant and native students who reported being victims of frequent bullying are displayed. The OECD and EU average percentage-point differences are based only on countries with reliable estimates for both native and immigrant students.

Students who reported being frequently bullied are those who answered "a few times a month" or "once a week or more" to at least one of the the questions about how often, during the previous 12 months: "Other students left me out of things on purpose"; "Other students made fun of me"; "I was threatened by other students"; "Other students took away or destroyed things that belong to me"; "I got hit or pushed around by other students"; and "Other students spread nasty rumours about me".

Results on the effects of being bullied frequently are obtained from regressions that account for students' gender, immigrant background and socio-economic status, as well as the socio-economic profile of schools.

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

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".

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

Students who reported 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".

Students who reported high motivation to achieve are those who reported that they "agree" or "strongly agree" with the statement "I want to be the best, whatever I do".

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 victims of frequent bullying.

Source: OECD, PISA 2015 Database Tables 7.19 and 7.24.

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Immigrant students need support from their teachers in order to make the most of the learning opportunities that are available to them (Klem and Connell, 2004). The literature suggests that at-risk students have more positive attitudes and higher academic motivation if teachers care about them and help them when they need it (Pitzer and Skinner, 2016; Ricard and Pelletier, 2016).

One of the ways in which PISA can be used to examine the support teachers give to students with an immigrant background is by asking students to report the frequency with which, over the previous 12 months, "teachers called on [me] less often than they called on other students"; "teachers graded [me] harder than they graded other students"; "teachers gave [me] the impression that they think [I] am less smart than [I] really am"; "teachers disciplined [me] more harshly than other students"; "teachers ridiculed [me] in front of others"; and "teachers said something insulting to [me] in front of others". Possible responses were "never or almost never", "a few times a year", "a few times a month", "once a week or more". Answers were coded into binary responses where the first two answers correspond to "rarely" and the latter two are considered "frequently". The six items were then summarised into a single binary variable indicating whether a student reported having frequently experienced at least one of the situations detailed above in the previous 12 months.

The use of such a variable was preferred over an index, because the latter consists of an average of the responses to the six questions, which could mask important results. For example, a student could report being insulted once a week or more, but respond "never" to all other questions, which would yield a relatively low score on an index, similar to another student answering "a few times a year" to all questions. The proposed binary variable is more effective in signalling frequent mistreatment of any sort.[6]

Figure 7.14 ■ **Students reporting unfair treatment by teachers, by immigrant background**
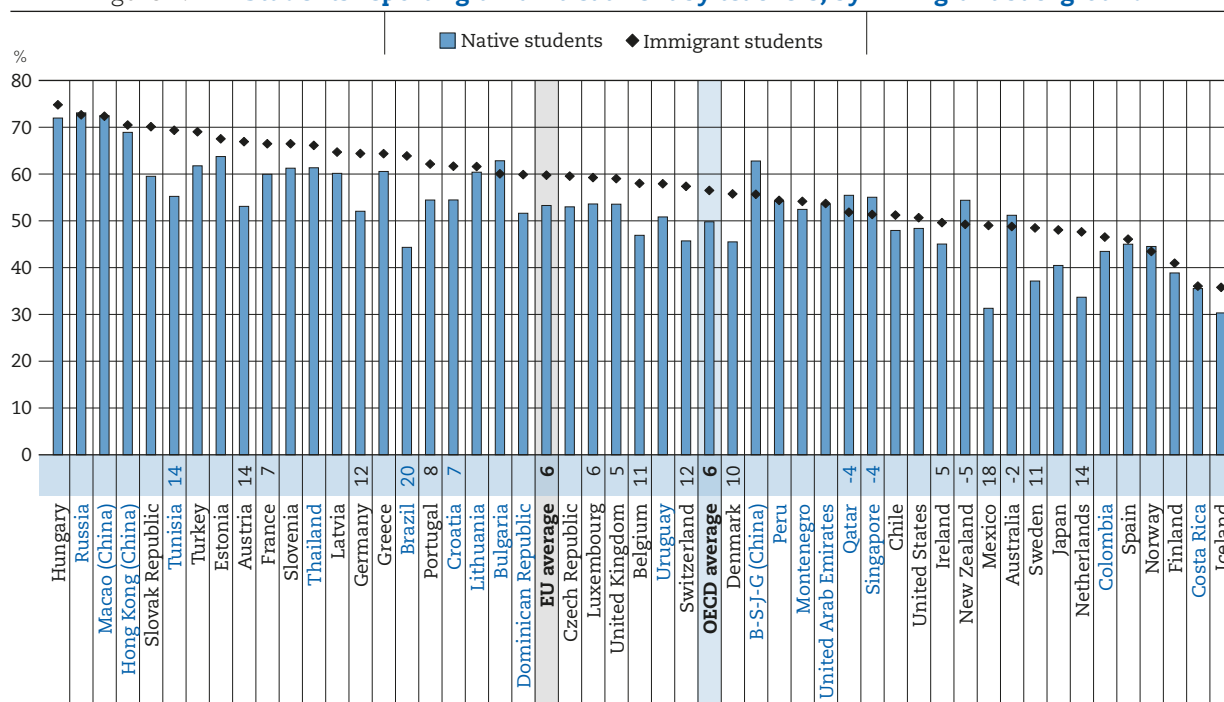
Notes: Only countries with valid data on immigrant students are shown.

Students who reported frequent unfair treatment by their teachers are those who answered "a few times a month" or "once a week or more" to at least one of the questions of how often, during the previous 12 months: "Teachers called me less often than they called on other students"; "Teachers graded me harder than they graded other students"; "Teachers gave me the impression that they think I am less smart than I really am"; "Teachers disciplined me more harshly than other students"; "Teachers ridiculed me in front of others"; and "teachers said something insulting me in front of others".

Statistically significant differences between immigrant and native students are shown next to country/economy names. For the OECD and EU average, this number refers only to the subset of countries/economies with valid data on both groups of students.

Countries and economies are ranked in descending order of the percentage of immigrant students who reported unfair treatment by teachers.

Source: OECD, PISA 2015 Database, Table 7.20.

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Figure 7.14 shows that in 16 countries and economies the percentage of students who reported that they were frequently treated unfairly in the previous 12 months was higher among immigrant students than native students. On average across OECD and EU countries, the difference was approximately six percentage points, but significant differences were observed across countries. In Austria, Belgium, Brazil, Denmark, Germany, Mexico, the Netherlands, Sweden, Switzerland and Tunisia, the difference was greater than 10 percentage points; in Brazil and Mexico, it was more than 15 percentage points.

Table 7.20 (available on line) shows that, in most countries and economies, first- and second-generation immigrant students were equally likely to report frequent unfair treatment from their teachers. However, in Norway, Spain Sweden, the United Kingdom and the United States, second-generation immigrant students were more likely to report so. The table also shows that students with an immigrant background who have at least one native-born parent were also more likely than native students to report being treated unfairly by their teachers. In Mexico and Peru, the percentage of native students of mixed heritage who reported unfair treatment was over 20 percentage points higher than the percentage of native students who so reported. In Colombia, the Dominican Republic and the Netherlands, the difference was between 12 and 14 percentage points. In Belgium, Colombia, Croatia and the Dominican Republic, foreign-born returning students were over 10 percentage points more likely to report frequent unfair treatment from their teachers than their native peers. Unfair treatment by teachers can decrease both the academic and social resilience of immigrant students.

Table 7.21 shows the adverse consequences of enduring at least one form of perceived mistreatment from a teacher on academic and well-being outcomes. In all countries and economies but three, the percentage of students who attained baseline levels of academic proficiency was lower among students who perceived unfairness by their teachers compared to other students. On average across OECD and EU countries the difference was about eight percentage points. In Denmark, Mexico and Sweden, where immigrant students were over 10 percentage points more likely than native students to report having suffered some form of unfair treatment from their teachers in the previous 12 months, students who so reported were more than 10 percentage points less likely to attain baseline levels of academic proficiency than other students. Because these results are obtained while accounting for students' and schools' socio-economic profile, they do not reflect the lower likelihood that immigrant students attain baseline levels of proficiency and the greater likelihood that they perceive unfair treatment by their teachers.

The association between students reporting that they have been treated unfairly by their teachers and students' outcomes are even more pronounced when considering students' social and emotional well-being. On average across OECD, students who reported that their teachers frequently treated them unfairly during the previous 12 months were 11 percentage points less likely feel a sense of belonging at school (10 percentage points less likely across EU countries), 10 percentage points less likely to reporting feeling satisfied with their life (10 percentage points less likely across EU countries), and eight percentage points less likely to report low levels of schoolwork-related anxiety (eight percentage points less likely across EU countries). The effects on achievement motivation were smaller and significant only in a small group of countries.

In several countries and economies, the negative effects of perceived teacher unfairness are strong for more than one well-being outcome. In Belgium, Germany, Mexico, Switzerland and Tunisia, where immigrant students were more than 10 percentage points more likely than native students to report frequent unfair treatment from their teachers, students who so reported were at least 9 percentage points less likely to report feeling like they belong at school, feeling satisfied with their life, and that they do not suffer much from schoolwork-related anxiety. In Belgium and Mexico, these students were as much as 14 percentage points less likely to report feeling a sense of belonging. In Ireland and the United Kingdom, they were 16 and 17 percentage points, respectively, less likely to report feeling like they belong at school, and 16 and 14 percentage points, respectively, less likely to report being satisfied with life. Evidence shows that poor teacher-student relations have a strong impact on several aspects of students' well-being as well as on their academic performance.

Table 7.21 ■ **Perceived frequent unfair treatment by teachers, and students' academic and well-being outcomes**

Legend:
- Statistically significant and **positive** value
- Statistically significant and **negative** value
- Missing or invalid estimate

	Percentage-point difference between immigrant and native students in the percentage of students who reported frequent unfair treatment by teachers	Effect of perceiving frequent unfair treatment by teachers (percentage-point change)				
		On the likelihood of attaining baseline academic proficiency	On the likelihood of reporting a sense of belonging at school	On the likelihood of reporting being satisfied with life	On the likelihood of reporting low schoolwork-related anxiety	On the likelihood of reporting high achievement motivation
Brazil	19.53	-7.87	-6.47	-3.65	-2.00	1.53
Mexico	17.70	-12.06	-14.11	-9.87	-12.25	-1.82
Tunisia	14.13	-5.01	-11.93	-12.42	-9.83	-1.60
Netherlands	13.97	-3.48	-9.89	-7.85	-5.91	2.65
Austria	13.83	-5.15	-5.25	-12.55	-14.44	-1.16
Germany	12.34	-5.81	-10.51	-11.15	-13.31	0.72
Switzerland	11.67	-8.98	-11.68	-10.26	-9.41	2.05
Sweden	11.35	-11.70	-12.23		-8.10	5.69
Belgium	11.10	-6.54	-13.97	-10.92	-11.53	2.82
Slovak Republic	10.60	-10.81	-12.44	-7.45	-9.63	-1.71
Denmark	10.25	-10.10	-12.57		-4.49	3.20
Dominican Republic	8.26	-5.69	-8.94	-4.98	-4.40	2.10
Portugal	7.69	-6.31	-9.59	-10.06	-5.30	1.52
Japan	7.59	-6.86	-8.81	-9.55	-3.36	3.11
Turkey	7.27	-6.08	-1.78	-10.21	-8.33	0.86
Croatia	7.21	-7.87	-10.48	-6.47	-9.61	2.69
Uruguay	7.09	-6.18	-7.85	-5.89	-2.04	3.58
Czech Republic	6.56	-10.29	-10.67	-8.19	-7.45	3.14
EU average	6.55	-7.61	-10.17	-9.90	-8.16	1.70
France	6.53	-6.68	-10.27	-10.20	-9.33	2.33
OECD average	6.33	-7.90	-10.54	-10.14	-7.98	1.44
Luxembourg	5.64	-7.76	-11.25	-10.60	-10.55	1.85
Iceland	5.47	-10.81	-10.55	-13.65	-10.24	3.99
United Kingdom	5.46	-7.02	-16.64	-13.78	-4.47	1.25
Slovenia	5.22	-4.09	-6.63	-9.68	-6.25	-0.10
Thailand	4.79	-6.82	-4.80	-4.31	-9.11	0.06
Ireland	4.58	-6.22	-16.36	-15.83	-6.66	-0.40
Latvia	4.55	-9.11	-7.93	-7.10	-6.63	3.57
Greece	3.80	-8.03	-7.30	-8.71	-5.44	2.15
Estonia	3.79	-5.53	-9.75	-10.98	-7.31	2.96
Chile	3.28	-6.85	-10.10	-6.21	-10.84	0.05
Colombia	3.06	-5.02	-8.93	-8.52	-2.15	0.15
Hungary	2.83	-8.92	-9.59	-8.89	-10.18	-1.06
United States	2.29	-7.92	-12.11	-9.98	-8.76	0.00
Finland	2.08	-10.33	-12.22	-8.13	-9.49	2.39
Montenegro	1.71	-5.65	-3.04	-9.82	-5.67	-0.35
Hong Kong (China)	1.57	-1.75	-4.25	-6.97	-6.66	2.11
Lithuania	1.20	-9.66	-4.36	-6.12	-8.85	0.79
Spain	1.08	-8.68	-5.25	-11.20	-4.52	1.13
Costa Rica	0.53	-7.23	-8.27	-9.86	-0.58	-0.24
Peru	0.23	-6.07	-8.37	-10.46	-4.30	0.02
United Arab Emirates	0.16	-11.55	-13.47	-9.97	-10.64	-0.89
Macao (China)	-0.10	-3.75	-6.98	-7.43	-7.61	0.00
Russia	-0.42	-6.17	-9.48	-9.61	-8.76	3.48
Norway	-1.07	-9.75	-16.71		-6.50	3.77
Australia	-2.40	-6.69	-13.86		-6.50	-0.22
Bulgaria	-2.79	-0.49	-6.10	-5.77	-6.91	4.42
Qatar	-3.62	-8.55	-10.21	-11.15	-8.38	1.94
Singapore	-3.68	-4.64	-9.05		-5.37	0.29
New Zealand	-5.14	-8.07	-15.03		-6.01	-0.91
B-S-J-G (China)	-7.11	-0.23	-5.17	-6.37	-5.29	1.06

Notes: Only those countries with a valid estimate for the difference in the percentage of immigrant and native students who reported being treated unfairly by their teachers are displayed. The OECD and EU average percentage-point differences are based only on countries with reliable estimates for both native and immigrant students.

Students who reported frequent unfair treatment by their teachers are those who answered "a few times a month" or "once a week or more" to at least one of the questions of how often, during the previous 12 months: "Teachers called me less often than they called on other students"; "Teachers graded me harder than they graded other students"; "Teachers gave me the impression that they think I am less smart than I really am"; "Teachers disciplined me more harshly than other students"; "Teachers ridiculed me in front of others"; and "teachers said something insulting me in front of others".

Results on the effects of perceiving frequent unfair treatment by teachers are obtained from regressions that account for students' gender, immigrant background and socio-economic status, as well as the socio-economic profile of schools.

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

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".

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

Students who reported 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".

Students who reported high motivation to achieve are those who reported that they "agree" or "strongly agree" with the statement "I want to be the best, whatever I do".

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 frequent unfair treatment by teachers.

Source: OECD, PISA 2015 Database Table 7.20 and Table 7.24.

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Another aspect of student-teacher relations that PISA 2015 aimed to measure was the amount of academic feedback and guidance that students receive from their teachers. Students were asked to report, with reference to their science class, the frequency with which "the teacher tells me how I am performing in this course"; "the teacher gives me feedback on my strength in this subject"; "the teacher tells me in which areas I can improve"; "the teacher tells me how I can improve my performance"; and "the teacher advises me on how to reach my learning goals". Possible responses were "never or almost never", "some lessons", "many lessons" and "every lesson or almost every lesson". Responses were summarised in a single index signalling whether a student answered "many lessons" or "every lesson or almost every lesson" to at least one of the five questions.

Figure 7.15 shows that immigrant students were more likely than native students to report receiving frequent feedback from their teachers. On average across OECD and EU countries, the percentage of student answering "many lessons" or "every lesson or almost every lesson" to at least one of the questions was six percentage points higher among immigrant students than among native students. To account for the fact that the feedback from science teachers is related to students' science performance and that immigrant students tend to perform worse than native students, Figure 7.15 also shows differences accounting for science performance. Some of the differences are reduced but most remain statistically significant, indicating that immigrant students were not receiving more feedback than native students simply because they performed worse in their science classes. On average across OECD and EU countries, the difference dropped to five and four percentage points respectively, after accounting for science performance.

Table 7.22 (available on line) shows that, on average across OECD countries, first-generation immigrant students were five percentage points more likely than second-generation immigrant students to report receiving frequent teacher feedback. In Canada, Greece, Israel and Spain, the difference was larger than ten percentage points. In the majority of countries and economies, returning foreign-born students and native students of mixed heritage were as likely as native students to report that they receive frequent feedback from their teachers.

Table 7.23 shows the effects of receiving feedback from teachers on well-being outcomes. The effect on academic performance is not calculated because of the risk of reverse causality (students who perform worse are likely to receive more feedback, which could be misinterpreted as more feedback causing poorer academic outcomes). In 37 countries and economies out of 59 with valid estimates of immigrant–native gaps in receiving frequent teacher feedback and its effect on sense of belonging, students were more likely to report that they feel like they belong at school if they received academic feedback from their science teacher. On average across OECD and EU countries, the effect was a two percentage-point increase in the likelihood of feeling a sense of belonging at school. In Macao (China), Qatar and Singapore, where immigrant students were more likely than native students to receive feedback from their teachers, the effect was greater than seven percentage points. In Chile, Estonia, France and Norway, where immigrant students were over 10 percentage points more likely than native students to receive feedback from their teachers, students who reported receiving feedback were over three percentage points more likely to report feeling that they belonged at school. Receiving regular feedback from their teachers can improve the academic and social resilience of immigrant students.

On average across OECD countries, receiving feedback and support from the science teacher increased the likelihood of students being satisfied with life by approximately five percentage points (four percentage points across EU countries). The effect was significant in several countries where immigrant students were more likely to report that they receive feedback from their teachers, namely Chile, Costa Rica, Estonia, Finland, Germany, Lithuania, Luxembourg, Macao, Qatar, Switzerland and the United States. In Chile and Estonia, the percentage of immigrant students who reported receiving frequent feedback from their science teacher was around 11 percentage points larger than the percentage of native students who so reported, even after accounting for their science scores. In both countries, students who reported receiving frequent feedback were around eight percentage points more likely to report being satisfied with their life. Receiving regular feedback from teachers can also improve the emotional resilience of immigrant students.

Figure 7.15 ■ **Immigrant-native differences in receiving teachers' feedback**

Differences in the percentage of immigrant and native students who reported that they receive frequent feedback from their science teacher

◇ ◆ Before accounting for science performance
▢ ▣ After accounting for science performance
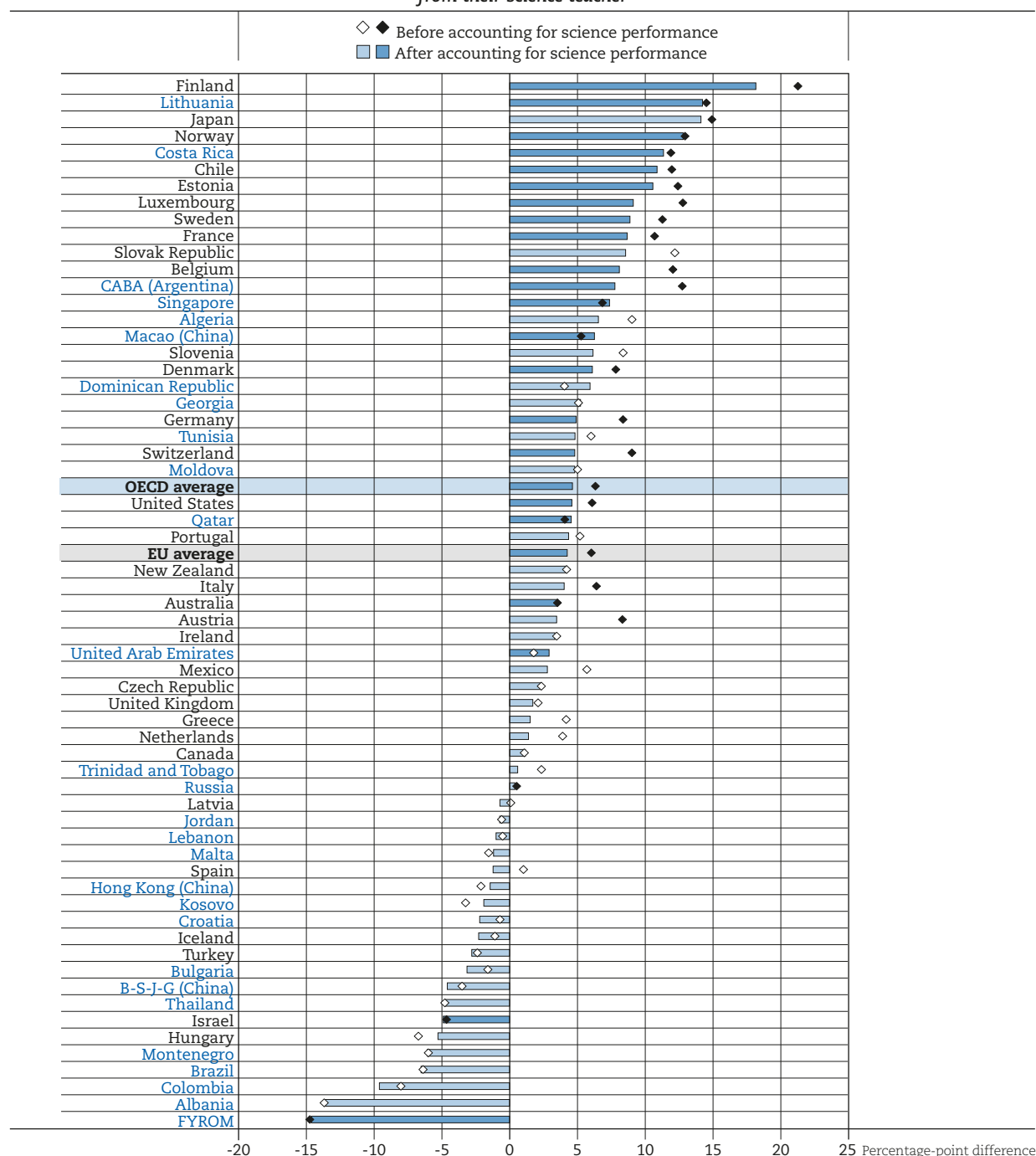
Notes: Only countries with valid estimates of immigrant-native gaps before and after accounting for science performance are displayed. Statistically significant immigrant-native gaps are marked in a darker tone.

Students who reported receiving frequent feedback from their science teacher are those who answered "many lessons" or "every lesson or almost every lesson" to at least one of the statements: "The teacher tells me how I am performing in this course"; "The teacher gives me feedback on my strength in this subject"; "The teacher tells me in which areas I can improve"; "The teacher tells me how I can improve my performance"; and "The teacher advises me on how to reach my learning goals".

Countries and economies are ranked in descending order of the percentage of immigrant students who reported that they receive frequent feedback from their science teacher, after accounting for their science performance.

Source: OECD, PISA 2015 Database, Table 7.22.

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Table 7.23 ■ **Receiving frequent feedback from the science teacher, and students' well-being**

Legend:
- Statistically significant and **positive** value
- Statistically significant and **negative** value
- Missing or invalid estimate

	Percentage-point difference between immigrant and native students in the percentage of students who reported that they received frequent feedback from their science teacher		Effect of receiving frequent feedback from the science teacher (percentage-point change)			
	Before accounting for science performance	After accounting for science performance	On the likelihood of reporting a sense of belonging at school	On the likelihood of reporting being satisfied with life	On the likelihood of reporting low schoolwork-related anxiety	On the likelihood of reporting high achievement motivation
Finland	21.27	18.17	1.64	3.72	-1.04	2.58
Lithuania	14.52	14.23	-1.45	2.89	-0.06	1.99
Japan	14.93	14.12	2.21	7.67	-4.61	6.55
Norway	12.94	12.80	3.47		-0.44	2.57
Costa Rica	11.90	11.35	0.29	6.09	-1.87	0.85
Chile	11.97	10.88	5.15	8.07	-0.28	5.27
Estonia	12.42	10.57	3.46	7.54	-3.38	5.11
Luxembourg	12.78	9.12	-2.80	4.78	-2.79	4.64
Sweden	11.28	8.88	-0.05		2.03	1.68
France	10.70	8.67	3.01	1.36	-2.62	3.56
Slovak Republic	12.19	8.56	-0.98	2.67	-0.59	1.10
Belgium	12.05	8.10	-3.70	2.02	-4.17	6.69
CABA (Argentina)	12.74	7.77	2.63			
Singapore	6.84	7.37	7.28		-0.18	3.64
Algeria	9.03	6.55	-3.11			
Macao (China)	5.27	6.26	8.23	4.94	1.26	6.63
Slovenia	8.37	6.15	4.46	4.81	-0.78	1.88
Denmark	7.83	6.10	2.50		0.51	3.60
Dominican Republic	4.04	5.93	5.14	3.46	-2.52	2.75
Georgia	5.08	5.23	12.35			
Germany	8.37	4.90	0.60	4.68	-0.27	4.28
Tunisia	6.01	4.82	5.28	9.64	-0.94	1.39
Switzerland	9.02	4.80	-1.33	3.69	-0.70	3.99
Moldova	5.01	4.80	9.55			
OECD average	6.33	4.64	2.27	4.68	-1.39	3.16
United States	6.08	4.59	4.93	6.34	-2.29	1.64
Qatar	4.07	4.54	9.06	5.79	0.76	2.31
Portugal	5.19	4.35	2.61	4.33	-2.40	4.73
EU average	6.03	4.25	2.17	3.87	-1.43	3.52
New Zealand	4.20	4.19	7.57		-0.86	2.67
Italy	6.41	4.02	3.07	2.23	-0.98	5.26
Australia	3.53	3.54	4.33		-1.44	2.12
Austria	8.32	3.47	1.05	2.30	-1.48	2.04
Ireland	3.47	3.34	5.12	4.23	-2.12	2.30
United Arab Emirates	1.78	2.91	9.21	8.80	1.19	2.50
Mexico	5.70	2.78	1.98	4.55	0.64	2.10
Czech Republic	2.34	2.27	-0.39	2.26	-2.28	0.90
United Kingdom	2.10	1.71	8.66	4.64	-3.01	1.34
Greece	4.17	1.51	3.10	5.95	-0.87	1.64
Netherlands	3.91	1.39	1.36	0.85	-1.53	2.08
Canada	1.08	1.16	5.72		-0.44	2.70
Trinidad and Tobago	2.34	0.59	7.70			
Russia	0.52	0.39	4.80	3.07	-4.45	2.05
Latvia	0.08	-0.72	0.49	2.45	-4.06	4.07
Jordan	-0.59	-0.74	8.55			
Lebanon	-0.52	-1.00	9.57			
Malta	-1.55	-1.19	10.78			
Spain	1.02	-1.22	2.77	7.03	-3.67	0.89
Hong Kong (China)	-2.12	-1.44	9.67	10.00	0.31	3.88
Kosovo	-3.25	-1.91	6.33			
Croatia	-0.71	-2.21	0.50	3.32	0.44	2.89
Iceland	-1.09	-2.29	-4.01	1.18	-3.21	5.07
Turkey	-2.38	-2.80	-0.21	8.46	2.70	3.01
Bulgaria	-1.61	-3.15	3.66	5.17	-1.73	5.16
B-S-J-G (China)	-3.51	-4.60	12.43	11.85	-3.80	2.41
Thailand	-4.78	-4.75	5.37	3.25	0.56	0.24
Israel	-4.66	-4.89			-3.37	2.37
Hungary	-6.73	-5.29	3.22	3.99	1.62	3.22
Montenegro	-6.00	-6.09	8.04	4.29	0.24	1.07
Brazil	-6.39	-6.54	2.89	4.78	-3.02	2.64
Colombia	-8.02	-9.61	-1.53	6.01	-1.16	1.33
Albania	-13.68	-13.66	7.15			
FYROM	-14.75	-14.62	2.93			

Notes: Only those countries with a valid estimate for the difference in the percentage of immigrant and native students who reported receiving frequent feedback from their science teacher are displayed. The OECD and EU average percentage-point differences are based only on countries with reliable estimates for both native and immigrant students.

Students who reported receiving frequent feedback from their science teacher are those who answered "many lessons" or "every lesson or almost every lesson" to at least one of the questions about how often: "The teacher tells me how I am performing in this course"; "The teacher gives me feedback on my strength in this subject"; "The teacher tells me in which areas I can improve"; "The teacher tells me how I can improve my performance"; and "The teacher advises me on how to reach my learning goals".

Results on the effects of receiving frequent feedback from the science teacher are obtained from regressions that account for students' gender, immigrant background and socio-economic status, as well as the socio-economic profile of schools.

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".

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

Students who reported 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".

Students who reported high motivation to achieve are those who reported that they "agree" or "strongly agree" with the statement "I want to be the best, whatever I do".

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 that they received frequent feedback from their science teacher, after accounting for science performance.

Source: OECD, PISA 2015 Database, Tables 7.22 and 7.24.

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Teacher feedback also has a strong motivating effect on students. On average across OECD countries, students who reported receiving frequent feedback from their science teachers were three percentage points more likely to report high achievement motivation (four percentage points across EU countries). The effect is above average in Belgium, Chile, Denmark, Estonia, France, Germany, Italy, Luxembourg, Macao (China), Singapore and Switzerland, where immigrant students were more likely than native students to report receiving feedback from their teachers.

Teacher feedback tends to increase the likelihood that students will report high levels of schoolwork-related anxiety, although there was no significant effect in all countries where immigrant were more likely to report receiving frequent feedback from their teachers, except in Belgium, Estonia and France. However, this effect is likely to be the result of low science scores influencing both the feedback variable and the measure of anxiety. Indeed, the positive and strong effects of teacher feedback on all other well-being outcomes should also be interpreted in light of the fact that students who receive more feedback are also more likely to be performing badly in science, and poor academic performance has adverse effects on students' well-being. Evidence shows that greater teacher support for immigrant students can significantly improve their well-being outcomes and moderate the effect of poor academic performance on their well-being.

Box 7.1. **Teachers' need for professional development in a multicultural setting, evidence from the Teaching and Learning International Survey**

The finding that many immigrant students reported that their teachers provide them with additional feedback, but that many feel victimised by their teachers could reflect the willingness and eagerness of many teachers to support immigrant students, but also that many lack the skills that would enable them to do so effectively. In teaching students from diverse backgrounds, especially when it comes to immigrant students and students who do not speak the language of the assessment, teachers often feel the need for additional systemic support. As Figure 7.16 below shows, on average, around one in ten teachers participating in the 2013 Teaching and Learning International Survey (TALIS) reported the need for additional professional development when teaching in multicultural settings. In some countries, the reported need is significantly higher than the average. For example, in Brazil, Italy and Mexico, over 25% of teachers reported that they feel they need more assistance in understanding how to address and support their students' needs in muticultural classrooms.

Results presented in this chapter indicate that teachers adapt their behaviours when teaching students with an immigrant background. Such adaptation can occur because teachers understand the specific strengths and weaknesses of immigrant students and try to provide adequate support. It can also result from implicit expectations teachers hold for the student and his or her academic potential and career possibilities (Boser et al., 2014; Lüdemann and Schwerdt, 2013; Klapproth et al., 2013). Moreover, teachers might hold stereotypical notions about different immigrant groups, which can lead them to behave very differently towards members of perceived "model minorities" or "problem groups" (Burgess and Greaves, 2013). In the United Kingdom, teachers' own assessments of the performance of ethnic minority students is lower than that revealed through in standardised assessments (Burgess and Greaves, 2013), whereas in Sweden students with an immigrant background tend to be evaluated more positively than their performance in a standardised test would predict (Lindahl; 2007).

Some studies attempted to evaluate experimentally the extent to which teachers' grading of school work was influenced by the assumed ethnicity of the student, a proxy for immigrant background. Van Ewijk (2011), for example, randomly assigned Dutch-, Turkish- and Moroccan-sounding names to essays in Dutch elementary schools. The essays were then assigned to 100 elementary school teachers for grading. Results did not indicate any bias in grading. However, teachers were found to express lower expectations and more negative attitudes towards students whose essay had been manipulated to have a Turkish- or Moroccan-sounding name. For example, teachers were less likely to expect that such students would continue with upper secondary education. A similar study conducted in Germany suggested that teachers award lower marks to essays of the same quality if the student writing the essay was assigned a Turkish-sounding name (Sprietsma, 2013).

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Moreover, while the effect was small and appeared to be driven by the behaviour of a small number of teachers, as in the Netherlands, teachers were less likely to give a recommendation for upper secondary education to students with a Turkish-sounding name.

Figure 7.16 ■ **Teacher's need for professional development in a multicultural setting**
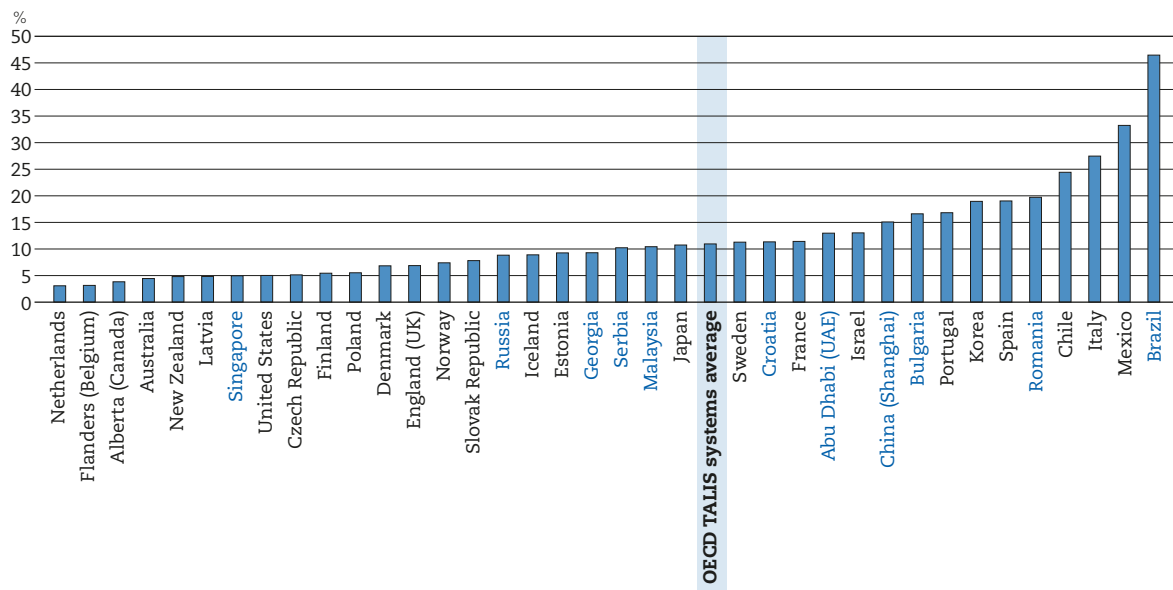
Note: The data from the United States should be interpreted carefully because the United States did not meet the international standards for participation rates.

Source: OECD (2013), *Teaching and Learning International Survey (TALIS): 2013 Complete Database,* http://stats.oecd.org/index.aspx?datasetcode=talis_2013%20.

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School resources and the academic, social, emotional and motivational resilience of immigrant students

Resources invested in education are, on average, weakly associated with education outcomes (Hanushek, 1986; Burtless, 2011). Research shows that this is partially because resources matter only up to a certain level, after which additional resources do not necessarily improve learning outcomes (Burtless, 1996; Nannyonjo, 2007; Nicoletti and Rabe, 2012; OECD, 2013, 2016a; Suryadarma, 2012; Wei Clifton and Roberts, 2011). Other studies show that socio-economically disadvantaged students are more likely to be resilient if they attend schools that have more and better resources (Agasisti and Longobardi, 2014a; 2014b; 2017).

In PISA, school principal questionnaires are used to capture information on the material, human and time resources available to schools. Several useful indicators were constructed using principals' responses: student-teacher ratios, computer-to-student ratios, and the number of extracurricular activities offered.[7] In addition, school principals reported the extent to which their school's capacity to provide instruction is hindered by the following: "a lack of teaching staff"; "inadequate or poorly qualified teaching staff"; "a lack of assisting staff"; "inadequate or poorly qualified assisting staff"; "a lack of educational material"; "inadequate or poor quality educational material"; "a lack of physical infrastructure"; or "inadequate or poor quality physical infrastructure". Possible answers were "not at all", "very little", "to some extent" and "a lot". Responses to these questions were used to construct two binary indices: the index of shortage of educational staff and the index of shortage of educational material. A value of one in the first index indicates schools whose principal answered "to some extent" or "a lot" to at least one of the first four questions listed above. A value of one in the second index indicates that a principal answered "to some extent" or "a lot" to the latter four questions.

Tables 7.25 to 2.29 (available on line) show average scores on the abovementioned indices for schools attended by students from different immigration backgrounds. Table 7.31 below lists countries where, on average, the resources available in schools attended by the average immigrant student and the resources available in schools attended by the average native student are different. Results show that in 2015 differences in resources between schools attended by the average student with an immigrant background and those attended by the average native student tended to be small and not statistically significant. Student/teacher ratios and computer/student ratios were similar across all groups of students, and on average across OECD and EU countries there were no statistically significant differences. The other three indices vary more across immigrant backgrounds in some countries, especially the availability of extracurricular activities.

Table 7.31 ■ **Immigrant-native differences in school resources**

Index	Countries and economies with statistically significant differences between schools attended by the average immigrant student and the average native student	
	Lower/Less for immigrant students	Higher/More for immigrant students
Shortage of educational material	Costa Rica, Jordan, Lithuania, Qatar, Singapore, United Arab Emirates, Uruguay	Albania, Brazil, Bulgaria, Ciudad Autónoma de Buenos Aires (Argentina), Former Yugoslav Republic of Macedonia, Iceland, Macao (China), Mexico, Netherlands, Portugal, United States, Tunisia
Shortage of educational staff	Australia, Costa Rica, Luxembourg, Malta, Montenegro, New Zealand, United Arab Emirates	Austria, Belgium, Ciudad Autónoma de Buenos Aires (Argentina), Croatia, Greece, Italy, Portugal, Slovenia, Tunisia, Turkey
Student/teacher ratio	Belgium, Bulgaria, Israel, Lithuania, Peru, Singapore, Spain, Switzerland, Trinidad and Tobago	Algeria, Estonia, Iceland, Jordan, Kosovo, Latvia, Luxembourg, Macao (China), Malta, New Zealand, Qatar, United Arab Emirates
Computer/student ratio	Canada, Estonia, Former Yugoslav Republic of Macedonia, Macao (China)	Ciudad Autónoma de Buenos Aires (Argentina), Finland, Hong Kong (China), Iceland, Qatar, Slovenia
Availability of extracurricular activities	Belgium, Brazil, Bulgaria, Croatia, Denmark, Estonia, Former Yugoslav Republic of Macedonia, Greece, Hong Kong (China), Germany, Luxembourg, Macao (China), Malta, Mexico, Portugal, Slovenia	Canada, Jordan, Montenegro, Qatar, Singapore, United Arab Emirates

Notes: The index of shortage of educational material was constructed based on school principal responses about the extent to which the school's capacity to provide instruction was hindered by: "a lack of educational material", "inadequate or poor quality educational material", "a lack of physical infrastructure", "inadequate or poor quality infrastructure". Possible responses were "not at all", "very little", "to some extent" and "a lot".
The index of shortage of educational staff was constructed based on school principal responses about the extent to which the school's capacity to provide instruction was hindered by: "a lack of teaching staff", "inadequate or poorly qualified teaching staff", "a lack of assisting staff", "inadequate or poorly qualified assisting staff". Possible responses were "not at all", "very little", "to some extent" and "a lot".
The number of extracurricular activities offered at school was calculated as the sum of the yes/no answers to the question of whether the following activities are available at school: band, orchestra or choir; school play or school musical; school yearbook, newspaper or magazine; volunteering or service activities; science club; science competitions; chess club; club with a focus on computers/ICT; art club or art activities; sporting team or sporting activities; and a country-specific item.
Source: OECD, PISA 2015 Database, Tables 7.25, 7.26, 7.28 and 7.29.
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Table 7.32 lists countries, out of those listed in Table 7.31, where the school resource indices considered had a statistically significant impact on students' academic and well-being outcomes. Results are consistent with the finding that resources are weakly associated with education outcomes; they also show that there is a weak link between educational resources and the well-being of students. However, some individual countries and economies show large differences between immigrant and native students, and strong effects of certain resource indices on students' outcomes. In Albania, for example, immigrant students were 13 percentage points more likely than native students to be enrolled in a school whose principal reported lack of educational material. In those schools, students were 19 percentage points less likely to attain baseline levels of academic proficiency.

The availability of extracurricular activities was the only resource index for which a considerable number of countries showed significant differences between native and immigrant students and significant effects on outcomes. In 13 of the countries and economies shown in Table 7.31, a greater availability of extracurricular activities was associated with an increase in the likelihood of students attaining baseline

levels of academic proficiency; in 9 countries and economies it was associated with an increase their likelihood of feeling like they belong at school. In Brazil, Bulgaria, Malta, Mexico and Portugal, schools attended by the average native student offered around one additional extracurricular activity compared to schools attended by the average immigrant student. In Austria, Bulgaria, Chile and Romania, an additional extracurricular activity offered at school was associated with an increase in the likelihood of students attaining baseline levels of academic proficiency by around two percentage points; in Albania, Korea, and Malta, it increased the likelihood by 3 percentage points; and in Macao (China) and Qatar, it increased the likelihood by almost four percentage points.

Table 7.32 ■ **School resources, and academic and well-being outcomes**

Countries with statistically significant differences in school resource indices between immigrant and native students

	Marginal effect							
	On the likelihood of attaining baseline academic proficiency		On the likelihood of reporting a sense of belonging at school		On the likelihood of reporting being satisfied with life		On the likelihood of reporting low schoolwork-related anxiety	
Index	Positive effect	Negative effect	Positive effect	Negative effect	Positive effect	Negative effect	Positive effect	Negative effect
Shortage of educational material		Albania, Former Yugoslav Republic of Macedonia, Portugal	Jordan, United Arab Emirates	Former Yugoslav Republic of Macedonia	Brazil, Qatar		Qatar, United Arab Emirates	
Shortage of educational staff	Greece, Luxembourg	Australia, United Arab Emirates	Luxembourg	Belgium		Portugal	Luxembourg, Slovenia, United Arab Emirates	Belgium
Student/ teacher ratio	Belgium, Bulgaria, Kosovo, Macao (China), Qatar, Singapore, Switzerland, Trinidad and Tobago, United Arab Emirates		Malta, Spain, Peru, Qatar	Latvia	Belgium	Bulgaria, Qatar, United Arab Emirates		Israel, Latvia, New Zealand, Qatar, United Arab Emirates
Computer/ student ratio	Macao (China), Qatar	Former Yugoslav Republic of Macedonia, Hong Kong (China)	Former Yugoslav Republic of Macedonia, Macao (China)	Finland, Hong Kong (China), Iceland, Slovenia		Finland, Hong Kong (China), Iceland		
Availability of extracurricular activities	Belgium, Bulgaria, Croatia, Estonia, Jordan, Luxembourg, Macao (China), Malta, Portugal, Qatar, Slovenia, United Arab Emirates		Belgium, Brazil, Estonia, Former Yugoslav Republic of Macedonia, Luxembourg, Macao (China), Slovenia, Qatar, United Arab Emirates		Croatia, Macao (China), United Arab Emirates		Belgium, Montenegro	Qatar

Notes: Results on the effects of the indices on academic and well-being outcomes of students are obtained from regressions accounting for students' gender, immigrant background, socio-economic status, the ISCED level of the class where they are enrolled, and the socio-economic profile of schools.

The index of shortage of educational material was constructed based on school principal responses about the extent to which the school's capacity to provide instruction was hindered by: "a lack of educational material", "inadequate or poor quality educational material", "a lack of physical infrastructure", "inadequate or poor quality infrastructure". Possible responses were "not at all", "very little", "to some extent" and "a lot".

The index of shortage of educational staff was constructed based on school principal responses about the extent to which the school's capacity to provide instruction was hindered by: "a lack of teaching staff", "inadequate or poorly qualified teaching staff", "a lack of assisting staff", "inadequate or poorly qualified assisting staff". Possible responses were "not at all", "very little", "to some extent" and "a lot".

The number of extracurricular activities offered at school was calculated as the sum of the yes/no answers to the question of whether the following activities are available at school: band, orchestra or choir; school play or school musical; school yearbook, newspaper or magazine; volunteering or service activities; science club; science competitions; chess club; club with a focus on computers/ICT; art club or art activities; sporting team or sporting activities; and a country-specific item.

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

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".

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

Students who reported 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 7.30 and 7.31.

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Results from PISA 2015 are consistent with the finding that resources are weakly related to education outcomes, or at least that they have an impact on the academic performance of students only to a certain degree, after which they do not make a significant difference. Evidence from the previous section has shown that the school environment has a strong effect on students' academic and well-being outcomes, and that immigrant students tend to be exposed to less-positive learning environments. In terms of school-level factors, differences between immigrant and native students are explained mostly by differences in the school environments to which they are exposed, as opposed to differences in the amount of resources their schools offer. These results imply that, in order to improve the academic, social and emotional resilience of immigrant students, policy makers should focus on the quality and use of resources, rather than the amount of them.

Box 7.2. **The role of sports in promoting academic performance and the social well-being of immigrant students**

There is an extensive literature on the health and cognitive benefits of engagement in sports activities. Several sociological studies show that engagement in leisure activities in general, and in sports activities in particular, can contribute to the integration of immigrants. Sporting environments can offer equal opportunities and promote racial equality among those involved, allowing immigrants to maintain their cultural identity alive while integrating in society (Donnelly and Coackley, 2002; Iwasaki and Bartlett, 2006). By participating in leisure activities in the host country with native populations, immigrants can learn about local customs and culture and interact with native peers on a par (Ito et al., 2011, Makarova and Herzog, 2014). This, in turn, can improve the way immigrants relate to native individuals and create positive social bonds. Participation in sports has a dual cultural function: it allows immigrants to maintain their own culture and interact with the local one (Allen et al., 2010).

Research empirical evidence based on PISA data suggests that sports can play an important role in promoting the integration of immigrant students (Garibaldi, 2017). The intuition behind this work is that an immigrant student coming from a country where the main sports that are practiced are very different from the ones practiced in the host country could struggle to take advantage of the sport environment as a way to effectively integrate with his or her native peers. To test this hypothesis, a measure of sports distance between countries was developed, based on Google searches on sports in each set of countries considered. Annex 1 provides a more detailed explanation of how the measure was constructed and table 7.A1.2 (available on line) presents index values for some combinations of host and origin countries in PISA. The index was then used to explain the PISA scores of immigrant students as well as their well-being.

Table 7.A1.1 displays the results from a regression of the PISA science scores of immigrant students on the sport distance between their country of origin and their host country, controlling for a set of background characteristics. Most importantly, the regression accounts for the geographic and cultural distance between the two countries and includes host and origin country fixed effects, so the effect of sport distance is isolated from other potential confounding factors. The results show that for immigrant boys, a 1-point increase in the sports distance index reduces PISA science scores by over 1-point. The negative effect is halved for immigrant girls.

Figure 7.17 below reports, for a selected group of destination countries, the predicted science scores of immigrant boys based on the sports distance between their country of origin and the host country. Science scores change remarkably across countries of origin. The predicted score of South African immigrant students in New Zealand is six points higher than the one of immigrant students from the United Kingdom and 30 points higher than the one of Malaysian immigrant students. According to the OECD, 10 points are equivalent to one semester of school; therefore, the difference is remarkably large. Albanian immigrant students in Switzerland are predicted to score about 30 points less than Austrian immigrant students.

Significant effects of sports distance were also found on reading and math and scores of immigrant students. An increase in one standard deviation of the sport distance index between the host and native country leads to a decrease in reading score of about 14 points for immigrant boys,

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after accounting for individual characteristics and other measures of distance between native and host countries. Results also show that sport distance is negatively associated with the sense of belonging of immigrant students.

Figure 7.17 ■ **The association between sports distance and immigrant boys' science scores in four destination countries**

Predicted science scores of immigrant boys based on sports distance between host countries and countries of origin
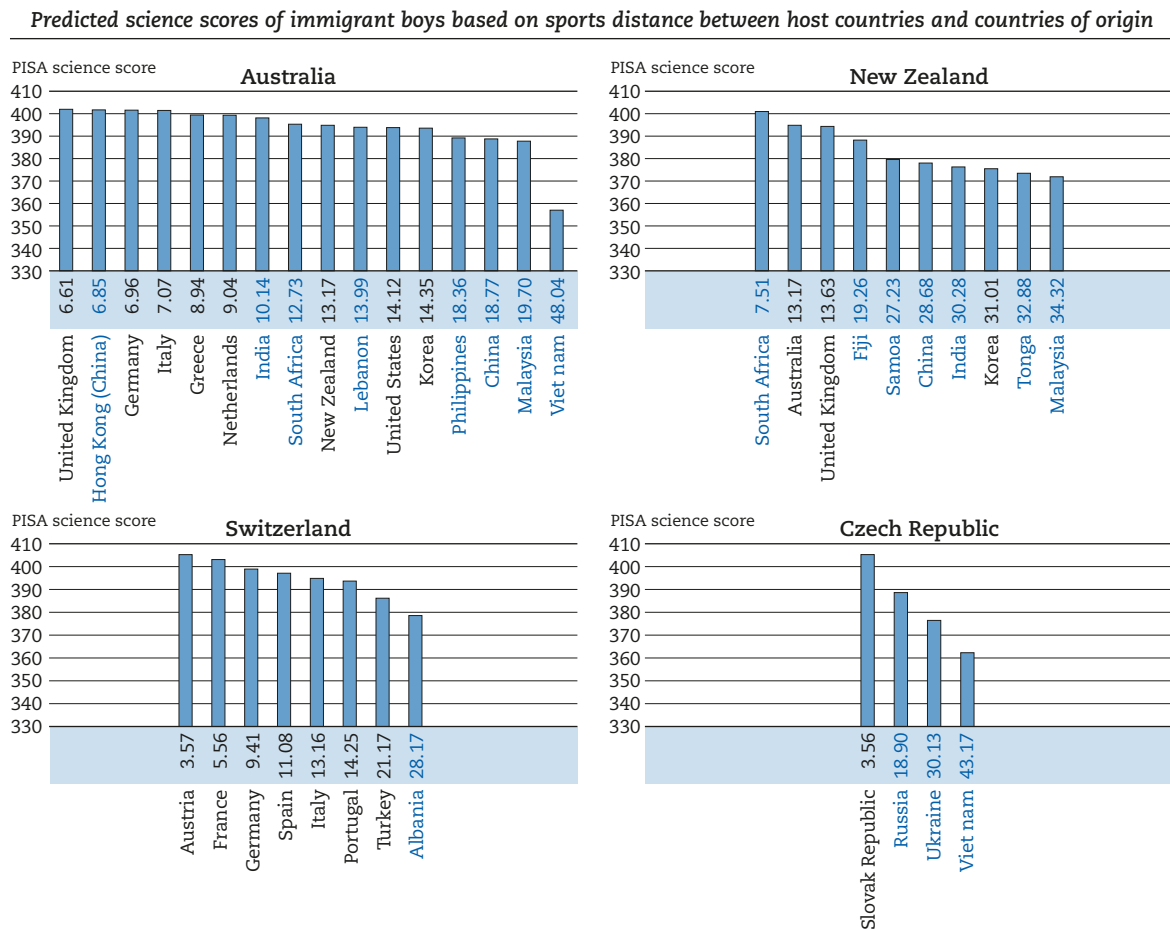
Notes: Host countries are reported on top of the figure and countries of origin are reported on the horizontal axis.

The sport distance between the host and destination countries is reported next to the name of the country of origin of immigrant boys.

Results are based on the regression of science scores of immigrant students on students' gender, ISCED level, parental education, the reported number of books in the household, a dummy for first-generation immigrant students, fixed host and origin country effects and indices of sport, linguistic, geographic and cultural distance between the host and destination country. The sport distance index is also interacted with the gender dummy so that the measured effect is only for male immigrant students. The resulting coefficient is then used to predict the science scores of male imigrant students based on measured sport distance, keeping all other things equal.

The results were obtained using pooled data from the PISA rounds of 2003, 2006, 2009, 2012 and 2015.

Source: Adapted from Garibaldi, E. (2017), "The role of sports for the integration of immigrant students", Universitá L. Bocconi Graduate Thesis, Milano (unpublished).

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School policies to improve the learning environment

Disciplinary climate has been identified as one of the factors explaining immigrant students' comparative disadvantage in academic performance and social well-being. Poorer discipline in class is also correlated with higher incidence of truancy and bullying, two other school-level variables that could explain disadvantages for immigrant students (OECD, 2016b; OECD, 2017). Recent evidence suggests that disciplinary climate is better in schools where teacher turnover is low and principals adopt a transformational leadership style (they motivate colleagues to pursuing the strategic goals of the school) (Agasisti et al., 2018).

To investigate the determinants of a school's disciplinary climate, three models were developed, each having the PISA index of disciplinary climate as the outcome variable. In the first model, the explanatory variables were the school average socio-economic profile and three variables obtained from teacher questionnaires. The first two measured the average amount of years that teachers spent teaching overall and in their current school, the latter being a proxy for teacher turnover. The third variable was the school average score on an index measuring the extent to which the school leader adopted transformational leadership, as measured by teachers' responses to a set of questions.[8] The second model was identical to the first but also included fixed-country effects. The third model was identical to the second, but it also included the previously mentioned school-resource variables: the ratio of computers to students, the ratio of students to teachers, the index of shortage of educational material, the index of shortage of educational staff, and the number of extracurricular activities provided in school. Results are presented in Annex 2.

Table 7.A2.1 shows that school disciplinary climate was higher in schools where the average number of years spent by teachers in their current school was higher. Results presented in the most comprehensive model in Table 7.A2.1 indicate that a one-year increase in the school average is associated with a 0.01-point improvement in school disciplinary climate. By contrast, the average number of years the staff spent teaching in any school is significant only in the first model, and the index of transformational leadership is significant only in the second. As expected, the former has a negative relationship with disciplinary climate, while the latter is positively associated with a more disciplined school climate.

Results from the third model reveal that certain resource factors can improve school disciplinary climate. A higher student/teacher ratio is associated with a poorer disciplinary climate, although effects are small. A one-point increase in the index of shortage of educational staff is associated with a 0.08-point decrease in a school's disciplinary climate. Offering an additional extracurricular activity leads to a 0.01-point increase in the disciplinary climate of a school. Evidence shows that the quality of a school's disciplinary climate depends on school principals and teachers, as well as on the availability and use of school resources.

Previous discussions have identified perceived frequent unfair treatment by teachers as a major obstacle to students attaining baseline levels of academic achievement and well-being. On average across OECD countries, students with an immigrant background, not just immigrant students, were more likely than native students to report being treated unfairly by their teachers. Four models were developed to investigate some school policies associated with perceived unfair treatment of students. The school-level variables considered are the same as those used in the models to estimate disciplinary climate, but the models are estimated at the individual level.

The first two models only include individual-level variables: the gender and socio-economic status of a student, and a binary variable indicating whether the student has an immigrant background. The second model adds fixed-country effects to the first; the third adds the transformational leadership variable and the measures of teacher turnover and years of experience in teaching in general; the fourth model also includes the school-resource variables used in the model to estimate disciplinary climate. Results are presented in Table 7.A2.2 in Annex 2.

The first two models show that girls and more advantaged students are less likely than boys and disadvantaged students to perceive frequent unfair treatment by their teachers. However, the socio-economic status variable becomes statistically insignificant in the models with school-level variables (which include average school socio-economic profile). In all models, students with an immigrant background were more likely than their native peers to report frequent unfair treatment by their teachers. In the second model, they were almost four percentage points more likely to report so.

In model 3, all teacher and school principal variables are significant. As expected, in schools whose principals adopt a transformational leadership style, students were less likely to report unfair teacher treatment. A one-point increase in the transformational leadership index reduces the likelihood of unfair treatment by about 1.4 percentage points in model 3. In schools with lower teacher turnover, students are less likely to perceive that their teachers treat students unfairly: a one-year increase in the average years spent by teachers in their current school reduces the likelihood of unfair treatment by 0.5 point. In schools where teachers have had a longer career, students were more likely to report unfair treatment, but the effect disappears in the fourth model.

In contrast to school disciplinary climate, the incidence of perceived unfair treatment by teachers is not correlated to any of the school-resource factors. Furthermore, the inclusion of such variables does not affect the magnitude of the effects of the variables from the third model, except for the measure of teachers' total experience in teaching. In model 4, the effect of immigrant background is only two percentage points, and is almost not statistically significant. This implies that the greater incidence of perceived unfair treatment by teachers among students with an immigrant background can be explained, in part, by the different types of schools native students and students with an immigrant background attend, and the influence of school factors on the behaviour of teachers.

Assessment practices

The amount and quality of the feedback immigrant students receive from teachers can affect these students' academic and social resilience (see previous sections in this chapter). Assessment practices are another way in which teachers, educators and school systems can ensure that immigrant students are given the opportunity to reach their potential and overcome the difficulties associated with their immigrant background.

PISA 2015 asked school principals how often ("never", "1-2 times a year", "3-5 times a year", "monthly" or "more than once a month") students in the national modal grade for 15-year-olds are assessed using the following methods: mandatory standardised tests, non-mandatory standardised tests, teacher-developed tests, and teachers' judgemental ratings. On average across OECD countries, about one in four students attends a school whose principal reported that mandatory standardised tests are never used to assess students in the modal grade for 15-year-olds, and six in ten students attend schools where these tests are used once or twice a year (see OECD, 2016b). Non-mandatory standardised tests are used somewhat less frequently than mandatory tests, whereas teacher-developed tests and judgemental ratings are used considerably more frequently. For example, on average across OECD countries, almost two in three students attend schools whose principal reported that teacher-developed tests are used at least once a month, while for more than six in ten students, teachers' judgemental ratings are used at least once a month (see OECD, 2016b).

Results from PISA 2015 indicate that there is no association between the percentage of students who attend schools that use different types of assessments and average science performance, except for teachers' judgemental ratings. Across OECD countries, the percentage of students who attend a school where teachers' judgemental ratings are used at least once a month is positively associated with the country's mean science performance (see OECD, 21b, Figure II.4.23). PISA 2015 also indicates that no matter which assessments are used in school, they are not associated with the degree to which socio-economic status explains science performance.

Results shown in Table 7.33 (available on line) indicate that there is no association between the different types of assessments used in schools (based on country-level data) and differences between native and immigrant students in the likelihood of achieving baseline levels of proficiency in reading, mathematics and science, feeling like they belong at school, feeling satisfied with life, having low schoolwork-related anxiety, and being motivated to achieve.

Selecting and grouping students: Vertical and horizontal stratification

Meeting the needs of all learners is not easy. Addressing and accounting for diversity is fundamental if education systems are to be able to promote immigrant students' academic, social and emotional resilience. Many education systems have created homogeneous populations (based on ability) through stratification, tracking policies and ability grouping, and established well-defined and inflexible education pathways from compulsory schooling into further education and training to ensure that instruction is tailored to the specific needs of relatively homogeneous groups (defined by ability, interests and/or preferences). However, selecting and sorting individuals can result in segregation, reinforcing disparities and resulting in differences in opportunities to learn. Many students might then feel they are not being offered equal opportunities to succeed and overcome initial disadvantage (Epple, Newlon and Romano, 2002).

Stratification in education refers to the various ways in which schools and education systems organise instruction for students of varying ability, behaviour, interests and pace of learning (Dupriez et al., 2008).

In comprehensive systems, all students follow a similar path through education, regardless of their abilities, behaviour and interests. Students of different abilities and aspirations are exposed to similar content, pedagogy and peers. In vertically stratified systems, students of similar age are sometimes enrolled in different grade levels, mainly as a result of grade repetition. In horizontally stratified systems, students of different abilities, behaviour or interests are separated into different schools, classes or groups. In these systems, students of similar abilities, interests and motivation are grouped together so that what is learned (content and difficulty) and how the content is taught (pedagogy) can be tailored to better meet students' needs.

The effect of stratification on student outcomes is the subject of ongoing debate. Research has shown that stratification is not always primarily based on academic criteria. Decisions about sorting students are often influenced by students' background characteristics and not just their academic performance (van de Werfhorst and Mijs, 2010). The more stratified an education system is, the more likely it is that disadvantaged students are placed in the least academically oriented learning environments (Van de Werfhorts and Mijs, 2010). Immigrant students are likely to be more frequently subject to unfavourable stratification outcomes because of their socio-economic status and possibly even their migration history. Experimental studies have shown that teacher-student relationships are shaped by the amount of demographic characteristics they share, through active and passive mechanisms (Dee, 2005; Lavy, 2008). Research on the children of immigrants in Germany have found that they are assigned to academic tracks less often than native students, and this difference cannot be attributed to academic performance (Ludemann and Schwert, 2010). Since teachers and school principals, often in conjunction with parents, decide on grade repetition and the selection of students into different programmes, immigrant students could face disadvantages vis-á-vis their native peers.

Grade repetition

Grade repetition is the practice of requiring students who have been in a grade level for a full school year to remain in the same grade for an additional school year (Jimerson, 2001; Jackson, 1975). School leaders and teachers, sometimes in consultation with parents, are responsible for deciding who will be promoted or retained, sometimes within guidelines or regulations coming from national or other levels of government (European Commission, 2011). Grade repetition can be a costly policy, as it generally requires greater expenditure on education and delays students' entry into the labour market (OECD, 2013). Grade repetition is used to give students whose teachers believe are not yet ready for more advanced coursework time to "catch up" with their peers. If the curriculum is cumulative and further learning depends on a solid understanding of what had been previously learned, then promoting students regardless of their mastery of the content might put low-performing students in an increasingly difficult position in higher grades.

Irrespective of its intended effect, grade repetition does not appear to promote academic achievement (Jimerson, 2001). It also appears to affect socio-economically disadvantaged students more than advantaged students (even when the two groups perform similarly in standardised tests). And students who repeated a grade are more likely to drop out of school altogether (Jacob and Lefgren, 2004; Manacorda, 2012).

Table 7.34 (available on line) reports the percentage of students with an immigrant background who repeated at least one grade, and the differences in percentages between native students and various groups of immigrant students, before and after accounting for their performance in the three core PISA subjects. On average across OECD and EU countries, and after accounting for academic performance, in 2015 students with an immigrant background were more likely than native students to have repeated a grade. On average across OECD countries, first-generation immigrant students were six percentage points more likely, while second-generation immigrant students were three percentage points more likely than native students to have repeated a grade (eight and four percentage points across EU countries). On average across OECD countries, returning foreign-born students were five percentage points more likely and native-born students of mixed heritage were two percentage points more likely than native students to have repeated a grade (six and three percentage points more likely across EU countries).

Figure 7.18 ■ **Immigrant-native differences in grade repetition**
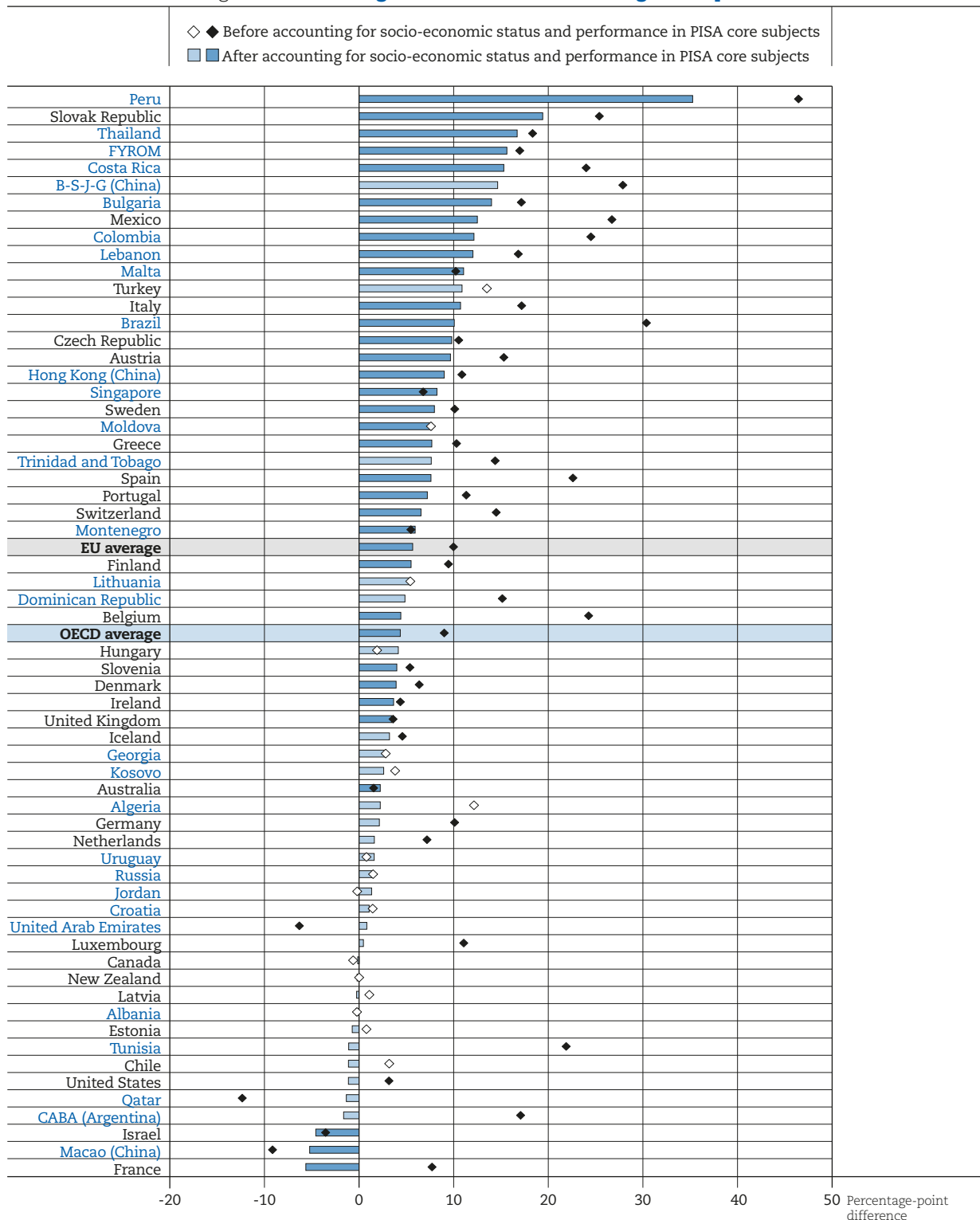
◇ ◆ Before accounting for socio-economic status and performance in PISA core subjects
▢ ▣ After accounting for socio-economic status and performance in PISA core subjects

-20   -10   0   10   20   30   40   50 Percentage-point
difference

Notes: Only countries with valid estimates of immigrant-native gaps before and after accounting for academic performance and socio-economic status are displayed.

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

Countries and economies are ranked in descending order of the difference between immigrant and native students in the percentage of students who had repeated a grade at least once, after accounting for socio-economic status and performance in PISA core subjects.

Source: OECD, PISA 2015 Database, Table 7.34.

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In Austria, Costa Rica, the Former Yugoslav Republic of Macedonia (hereafter "FYROM"), Hong Kong (China), Mexico, the Slovak Republic and Sweden, the percentage of students who had repeated a grade at least once was over 15 percentage points greater among first-generation immigrant students than among native students, after accounting for their academic performance. In Italy and the Slovak Republic, the same was true for second-generation immigrant students compared to native students. In Austria, Costa Rica, Germany, Hong Kong (China), Jordan, Malta, Spain and Switzerland, returning foreign-born students also faced a significant disadvantage, since they were over nine percentage points more likely than native students to have repeated a grade, after accounting for their academic performance. In Bulgaria, Colombia, Costa Rica, the Dominican Republic, FYROM, Peru, Qatar and Spain, the percentage of students who had repeated a grade at least once was over 10 percentage points greater among native-born students of mixed heritage than among native students, after accounting for their academic performance.

Figure 7.18 shows the difference in the percentage of native and immigrant students who had repeated at least one grade, before and after accounting for their performance in the three core PISA domains. In 31 out of 61 countries considered, immigrant students are more likely than native students to have repeated a grade, after accounting for their academic performance. On average across OECD countries, they are four percentage points more likely to have repeated a grade (six percentage points more likely across EU countries); however, values range from a 35 percentage-point disadvantage for immigrant students in Peru, to a four percentage-point advantage in France.

Table 7.35 shows the effects of having repeated at least one grade on students' well-being, after accounting for their academic performance and other control variables. The effect of grade repetition on academic performance was not considered because problems of reverse causality are too great. On average across OECD and EU countries, students who had repeated at least one grade were eight percentage points less likely to report feeling like they belong at school. However, in 17 countries and economies, these students were over 10 percentage points less likely to report a sense of belonging at school. In 11 of these countries, immigrant students were more likely than native students to have repeated at least one grade, after accounting for their academic performance. In FYROM, the Slovak Republic and Thailand, immigrant students are over 15 percentage points more likely than native students to have a repeated a grade. Students in these countries who had repeated at least one grade were 34 percentage points (FYROM), 15 percentage points (the Slovak Republic) and 11 percentage points (Thailand) less likely to report sense of belonging at school than students who had never repeated a grade.

Repeating a grade also negatively affects students' satisfaction with their life, after accounting for their academic performance. On average across OECD countries, students who had repeated a grade were five percentage points less likely to report being satisfied with life (six percentage points less likely across EU countries). The effect was above eight percentage points in Belgium, Costa Rica, the Czech Republic, Montenegro, Spain and Thailand, where immigrant students are more likely to have repeated a grade than native students. Repeating a grade has a negative effect on the likelihood of reporting low levels of schoolwork-related anxiety only in Austria, Finland, France, Israel, Qatar, Israel, Thailand, Tunisia and the United Arab Emirates. Immigrants are more likely to have a repeated a grade in all these countries except Qatar, Tunisia and the United Arab Emirates. On average across OECD countries, students who had repeated a grade were two percentage points less likely to report being motivated to achieve; however, in the majority of countries, effects on motivation are small or not statistically significant.

Results presented in 7.36 (available on line) indicate that there is no association between the percentage of students who had repeated a grade and the difference between native and immigrant students in the likelihood that a student will be academically, socially and emotionally resilient.

Horizontal stratification

In comprehensive systems, all students follow a similar path through education, regardless of their abilities, behaviour and interests; but in horizontally stratified systems, students are separated into different schools, classes or groups based on their ability, behaviour and/or interests. Stratification can occur between schools or within schools. Between-school sorting occurs when some students attend programmes that are primarily academic, while others attend programmes that are primarily vocational or have a combination of academic and vocational elements (Kerckhoff, 2000; LeTendre et al., 2003).

Table 7.35 ■ Grade repetition and students' well-being outcomes

Legend:
- ■ Statistically significant and **positive** value
- ■ Statistically significant and **negative** value
- ■ Missing or invalid estimate

	Percentage-point difference between immigrant and native students in the percentage of students who had repeated a grade at least once		Effect of having repeated a grade at least once (percentage-point change)			
	Before accounting for academic performance and socio-economic status	After accounting for academic performance and socio-economic status	On the likelihood of reporting a sense of belonging at school	On the likelihood of reporting being satisfied with life	On the likelihood of reporting low schoolwork-related anxiety	On the likelihood of reporting high achievement motivation
Peru	46.48	35.29	-4.66	-4.91	0.49	-0.89
Slovak Republic	25.42	19.44	-15.04	-5.77	5.47	-5.59
Thailand	18.36	16.73	-11.05	-8.90	-5.80	-2.05
FYROM	17.01	15.65	-33.82			
Costa Rica	24.03	15.32	-4.57	-10.43	0.28	-0.48
B-S-J-G (China)	27.91	14.67	-1.81	-5.40	-1.98	0.76
Bulgaria	17.17	14.02	-6.10	-7.87	-3.12	4.97
Mexico	26.75	12.52	-7.72	-4.78	2.02	-4.25
Colombia	24.53	12.16	-5.02	-4.81	-0.17	-0.68
Lebanon	16.85	12.06	-2.56			
Malta	10.24	11.07	-1.63			
Turkey	13.53	10.90	-3.97	-4.76	2.49	-3.14
Italy	17.20	10.74	-8.72	-4.80	3.84	0.68
Brazil	30.40	10.08	-5.28	-4.26	2.15	0.70
Czech Republic	10.55	9.81	-10.23	-8.71	0.34	-2.12
Austria	15.32	9.68	-2.38	-5.57	-3.99	0.09
Hong Kong (China)	10.89	9.02	-2.03	-2.93	5.46	-0.59
Singapore	6.80	8.25	-10.93		7.70	-5.31
Sweden	10.13	7.98	-3.82		0.39	-0.69
Moldova	7.62	7.72	-14.65			
Greece	10.32	7.71	-18.74	-1.15	-4.55	-1.37
Trinidad and Tobago	14.41	7.65	-5.93			
Spain	22.63	7.62	-1.91	-11.66	5.90	-3.22
Portugal	11.35	7.23	-5.41	-3.70	3.36	-4.53
Switzerland	14.52	6.56	-8.07	-3.80	-4.19	1.10
Montenegro	5.50	5.95	-17.67	-8.52	5.12	-9.18
EU average	**10.00**	**5.68**	**-7.54**	**-5.93**	-0.60	-1.11
Finland	9.47	5.51	-10.24	-6.30	-10.18	7.26
Lithuania	5.43	5.45	-9.50	-18.23	-0.07	-8.39
Dominican Republic	15.16	4.87	-6.50	-4.40	-1.74	3.51
Belgium	24.29	4.43	-6.44	-8.12	-1.41	2.69
OECD average	**9.02**	**4.37**	**-7.65**	**-5.37**	-0.67	-1.74
Hungary	1.91	4.16	-6.29	-1.50	-3.20	-3.34
Slovenia	5.39	4.00	-9.94	-6.66	-2.97	3.69
Denmark	6.37	3.93	-18.22		-1.96	4.84
Ireland	4.38	3.67	-3.39	-5.09	-1.03	0.42
United Kingdom	3.61	3.46	-10.85	-3.02	0.13	-6.42
Iceland	4.59	3.23	-19.75		6.58	-4.80
Georgia	2.83	2.81	-14.26			
Kosovo	3.83	2.62	-19.32			
Australia	1.55	2.26	-6.71		-2.67	-3.80
Algeria	12.16	2.26	21.00			
Germany	10.11	2.16	-3.43	-4.78	-2.00	-4.80
Netherlands	7.20	1.63	-3.93	-2.85	-0.42	-2.00
Uruguay	0.79	1.61	-5.36	-8.18	5.91	1.01
Russia	1.50	1.42	-18.21	-18.34	3.45	3.27
Jordan	-0.18	1.34	-21.41			
Croatia	1.45	1.08	-5.58	-2.31	5.40	-4.08
United Arab Emirates	-6.30	0.83	-5.26	-9.07	-5.99	-4.28
Luxembourg	11.08	0.47	-4.10	-4.06	-1.31	-0.42
Canada	-0.61	0.03	-14.40		1.67	-9.54
New Zealand	0.02	-0.20	-8.92		-3.95	-10.06
Latvia	1.10	-0.25	-5.81	-3.43	2.28	-0.43
Albania	-0.21	-0.33	-11.76			
Estonia	0.79	-0.71	-7.55	-9.37	-2.10	-5.57
Tunisia	21.91	-1.09	-6.18	-5.51	-4.29	-1.43
Chile	3.20	-1.11	-7.42	-5.70	0.85	0.07
United States	3.17	-1.11	-7.70	-6.99	0.26	-2.13
Qatar	-12.34	-1.33	-9.15	-5.00	-5.09	-2.93
CABA (Argentina)	17.09	-1.62	-3.49			
Israel	-3.52	-4.56			-5.77	-0.82
Macao (China)	-9.14	-5.21	0.01	-2.33	2.70	-3.59
France	7.73	-5.62	-1.95	-6.01	-7.04	1.90

Notes: Only those countries with a valid estimate for the difference in the percentage native and immigrant students who had repeated a grade are displayed. The OECD and EU average percentage-point differences are based only on countries with reliable estimates for both native and immigrant students.

Results on the effects of having repeated a grade are obtained from regressions that account for students' academic performance in the three PISA core subjects, their gender, immigrant background and socio-economic status, as well as the socio-economic profile of schools.

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

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".

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

Students who reported 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".

Students who reported high motivation to achieve are those who reported that they "agree" or "strongly agree" with the statement "I want to be the best, whatever I do".

Countries and economies are ranked in descending order of the percentage-point difference between immigrant and native students in the percentage of students who had repeated a grade at least once, after accounting for academic performance and socio-economic status.
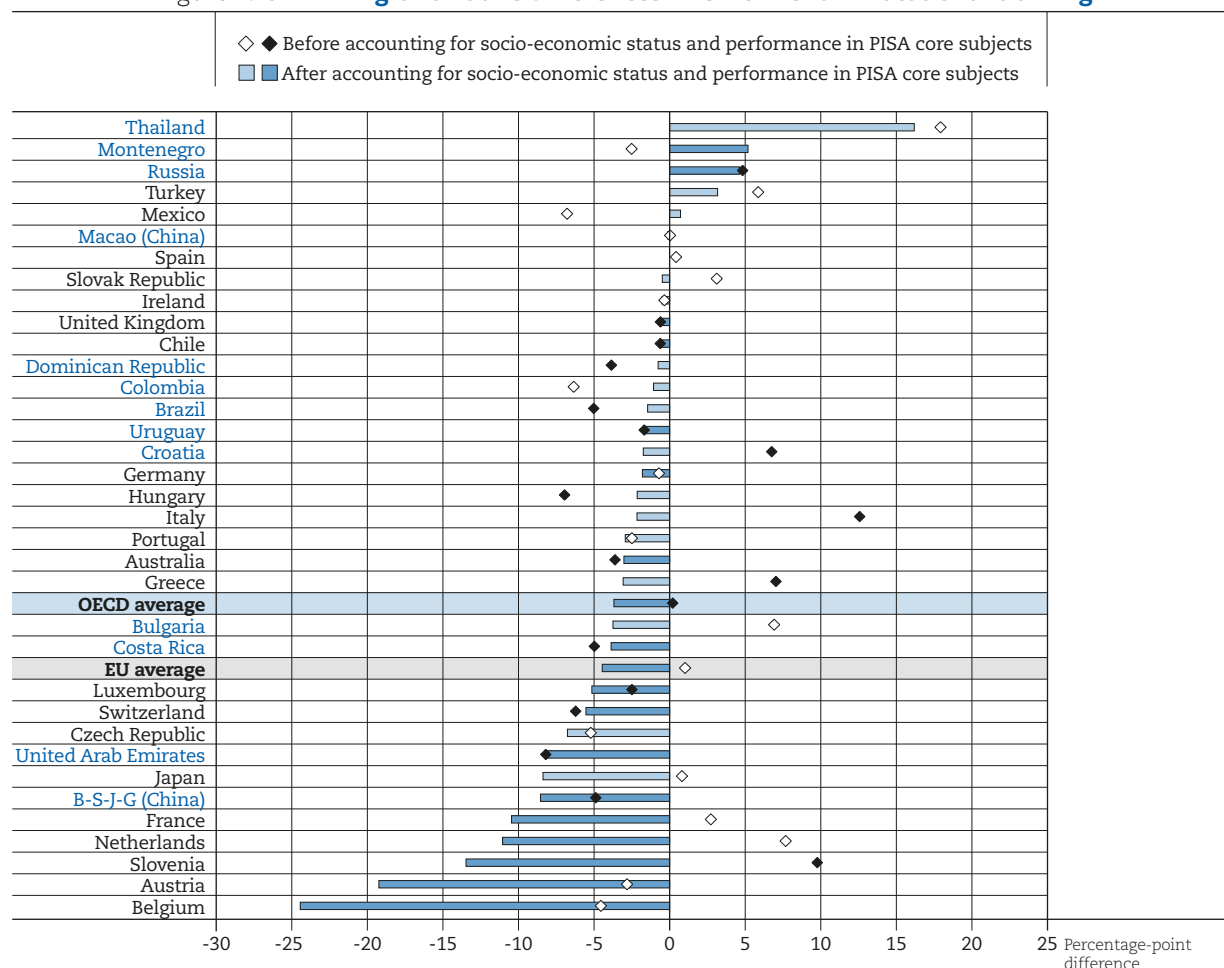
Source: OECD, PISA 2015 Database Table 7.34 and Table 7.40.

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Within-school sorting occurs when students are grouped by ability and placed into different classes or are placed into different study groups within the same class. Most education systems allow a degree of differentiation, but systems differ greatly depending on the age at which students are sorted into different education programmes and the number of programmes that are available. Evidence from PISA 2012 shows that in countries and economies that sort students into different education programmes at an early age, the impact of students' socio-economic status on their performance is stronger than in systems that select and group students later (OECD, 2013).

PISA asked students in what programme they were enrolled; responses were coded to identify vocational tracks. Table 7.37 (available on line) reports the percentage of students with an immigrant background enrolled in vocational tracks and the differences in percentages between native students and students of various immigrant backgrounds, before and after accounting for their performance in the three core PISA subjects. On average in 2015 across OECD countries, and after accounting for students' academic performance, first-generation and second-generation immigrant students were four and three percentage points, respectively, less likely to be enrolled in a vocational track compared to native students of similar ability (across EU countries, five and four percentage points, respectively).

Figure 7.19 ■ **Immigrant-native differences in enrolment in vocational training**

◇ ◆ Before accounting for socio-economic status and performance in PISA core subjects
▫ ▪ After accounting for socio-economic status and performance in PISA core subjects

Notes: Only countries in which some students are enrolled in vocational programs and that have valid estimates of immigrant-native gaps before and after accounting for academic performance and socio-economic status are displayed.
Statistically significant immigrant-native gaps are marked in a darker tone.

Countries and economies are ranked in descending order of the difference in the percentage of immigrant and native students enrolled in vocational training, after accounting for socio-economic status and performance in PISA core subjects.

Source: OECD, PISA 2015 Database, Table 7.37.
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Table 7.38 ■ **Enrolment in vocational programmes and students' well-being outcomes**
Pre-vocational and vocational programmes

Statistically significant and **positive** value
Statistically significant and **negative** value
Missing or invalid estimate

	Percentage-point difference between immigrant and native students in the percentage of students enrolled in vocational programmes		Effect of being enrolled in vocational programmes (percentage-point change)				
	Before accounting for academic performance and socio-economic status	After accounting for academic performance and socio-economic status	On the likelihood of attaining baseline academic proficiency	On the likelihood of reporting a sense of belonging at school	On the likelihood of reporting being satisfied with life	On the likelihood of reporting low schoolwork-related anxiety	On the likelihood of reporting high achievement motivation
Thailand	17.89	16.18	-24.95	-4.85	-5.12	-0.64	0.67
CABA (Argentina)	11.03	10.55	2.48	1.76			
Montenegro	-2.54	5.18	-33.42	1.99	0.53	1.41	4.04
Russia	4.80	4.63	-5.92	5.89	1.04	2.23	-4.81
Turkey	5.83	3.17	-34.58	0.48	4.16	-0.21	3.02
Albania	3.58	2.00	-23.03	-3.50			
Mexico	-6.80	0.72	12.03	0.99	0.47	0.95	-0.31
Georgia	0.24	0.09	-26.27	-4.25			
Macao (China)	0.01	-0.07	-8.79	-3.03	-9.83	9.84	8.75
Spain	0.41	-0.13	-48.99	-2.95	8.21	3.77	11.61
Slovak Republic	3.09	-0.49	-44.98	-0.30	-1.83	1.16	2.46
Ireland	-0.37	-0.50	-60.35	-13.07	-18.96	20.83	-1.53
United Kingdom	-0.63	-0.65	0.64	3.91	3.63	-2.73	-1.76
Chile	-0.64	-0.66	-7.19	12.57	7.25	5.76	8.56
Dominican Republic	-3.87	-0.76	21.52	2.69	4.18	0.78	-2.83
Colombia	-6.36	-1.06	7.92	2.52	0.70	-0.95	-0.01
Brazil	-5.04	-1.46	30.96	2.91	-0.46	-1.05	-1.05
Uruguay	-1.70	-1.64	-10.76	-4.76	9.56	-1.79	1.49
Croatia	6.73	-1.74	-40.91	-0.58	-2.45	7.46	0.54
Germany	-0.72	-1.80	-14.42	-2.03	7.77	2.44	-0.02
Hungary	-6.97	-2.14	-51.57	-3.55	0.19	7.82	-0.45
Italy	12.54	-2.16	-27.03	-6.57	1.51	2.97	-0.16
Portugal	-2.51	-2.93	-25.89	-1.11	2.63	7.77	0.98
Australia	-3.63	-3.02	-12.31	-4.85		-1.71	-1.84
FYROM	-0.65	-3.06	-16.01	-1.24			
Greece	7.01	-3.07	-51.90	-0.52	-4.24	8.82	6.51
OECD average	0.18	-3.58	-24.47	0.16	0.81	4.08	0.26
Bulgaria	6.89	-3.75	-27.84	-0.12	1.43	-0.70	2.14
Costa Rica	-5.00	-3.87	15.20	2.53	2.13	1.67	2.13
EU average	0.50	-4.60	-28.89	-0.37	0.69	4.96	-0.24
Luxembourg	-2.51	-5.14	9.44	3.76	1.53	-2.78	-5.07
Switzerland	-6.23	-5.54	17.83	1.92	-7.02	-4.14	3.47
Czech Republic	-5.23	-6.76	-1.75	4.19	-1.11	-1.20	-2.35
United Arab Emirates	-8.21	-8.22	-13.52	0.84	-6.12	9.66	1.40
Japan	0.80	-8.37	-9.47	-0.46	-0.58	1.45	-1.53
B-S-J-G (China)	-4.90	-8.54	0.81	-4.29	-5.15	1.92	1.88
France	2.70	-10.45	-43.63	3.25	5.88	13.83	3.71
Netherlands	7.65	-11.04	-57.80	0.88	-0.36	4.21	-3.06
Slovenia	9.74	-13.46	-24.83	0.88	0.21	2.11	-5.68
Austria	-2.84	-19.23	-25.13	3.79	1.69	0.07	-3.78
Kosovo	-17.69	-21.94	-10.64	0.08			
Belgium	-4.57	-24.42	-30.87	7.68	3.75	12.36	-6.90

Notes: The table displays only those countries in which some students are enrolled in vocational programmes, with valid estimates of the effect of attending vocational programs on at least two of the five outcomes analysed, and with a valid estimate for the difference between immigrant and native students in the percentage of students enrolled in vocational programs. The OECD and EU average percentage-point differences are based only on countries with reliable estimates for both native and immigrant students.
Results on the effects of being enrolled in vocational programmes are obtained from regressions that account for students' gender, immigrant background and socio-economic status, as well as the socio-economic profile of schools. All regressions but the one for the effect on academic performance also account for the performance of students in the three PISA core subjects.
Students who attain baseline academic proficiency are those who reach at least PISA proficiency Level 2 in all three core PISA subjects: science, reading and mathematics.
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".
Students who reported being satisfied with life are those who reported a life satisfaction of 7 or above on a scale from 0 to 10.
Students who reported 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".
Students who reported high motivation to achieve are those who reported that they "agree" or "strongly agree" with the statement "I want to be the best, whatever I do".
Countries and economies are ranked in descending order of the percentage-point difference between immigrant and native students in the percentage of students enrolled in vocational training, after acounting for academic performance and socio-economic status.
Source: OECD, PISA 2015 Database, Table 7.37 and Table 7.40.
StatLink ⧉ http://dx.doi.org/10.1787/888933682718

In Austria, Belgium, France, Kosovo, the Netherlands and Slovenia, first-generation immigrant students were over 10 percentage points less likely to be enrolled in a vocational track compared to native students. The same was true for second-generation immigrants, except in France. In the majority of countries, differences between native students and returning foreign-born students, and between native students native-born students of mixed heritage were not statistically significant. However, in Austria and Belgium, both groups were at least nine percentage points more likely than native students to be enrolled in a vocational track.

The finding that, in the majority of countries and economies, immigrant students are less likely to be enrolled in vocational tracks than native students, after accounting for their academic performance, is consistent with results showing that immigrant students have greater achievement motivation and that immigrant parents hold more ambitious expectations for their children's education than the parents of native students (OECD, 2015). This could indicate that immigrant students, unlike other socio-economically disadvantaged students, have not internalised low expectations of social mobility. Chapter 8 examines the education and career expectations of immigrant students, and the educational mobility of immigrants and native students in European countries.

Table 7.38 reports, for countries and economies where some students were enrolled in vocational programs and with valid estimates of immigrant-native gaps in enrolment, the effects of being enrolled in a vocational program on on students' well-being, after accounting for their academic performance and other control variables. In most countries and economies, the effects of being enrolled in a vocational track on students' well-being were small, after accounting for their academic performance. In Austria and Belgium, students enrolled in vocational tracks were, respectively, four and eight percentage points more likely to feel like they belonged at school; in France, they were six percentage points more likely to be satisfied with their life and 14 percentage points more likely to report low levels of schoolwork-related anxiety. In all of these countries, immigrant students were less likely to be enrolled in a vocational track.

Table 7.39 (available on line) shows that there is no association at the country level between the percentage of socio-economically disadvantaged students who attend pre-vocational or vocational programmes and the difference between native and immigrant students in the likelihood of attaining baseline levels of academic proficiency or reporting a sense of belonging at school. Results are the same when considering all students, rather than just disadvantaged students.

Annex 7.A1

This section outlines the way in which the index of sports distance was constructed using Google Trend data in Garibaldi (2017). Google Trend provides data on the share of worldwide researches on a topic coming from each country. The actual shares are not available. Instead, normalised values are provided which range between zero and 100, where 100 is the value assigned to the country with the greatest number of researches on the topic. Using Google Trend data from 2004 to 2016, Garibaldi calculates such normalised shares for the set of the most popular sports in the world and for each combination of host and origin country in the PISA rounds of 2003, 2006, 2009, 2012 and 2015. Using such data Garibaldi calculates the so-called "between sports distance" between country A and B for sport S as follows:

$BD_S = |$ *share of searches on sport S from country A – share of searches on sport S from country B* $|$

The between sports distance represent the absolute value of the difference between the share of worldwide searches of sport S coming from country A and the share coming from country B. For example, taking soccer as a sport and Italy and Germany as countries, the between sport distance is a measure of the difference in the shares of the worldwide Google searches on soccer that were made in Italy and Germany. The measure is computed for all sports and countries considered.

Google Trend also allows calculating the share of the total searches in a given country related to a specific topic. Although, actual shares are not available, Google Trends makes available normalised values which range between 0 and 100, where 100 represents the most searched topic. The author uses this information to calculate the importance of each sport in the Google researches of each country and calculate the "within sports distance" between country A and B for sport S as follows:

$WD_S = |$ *share of searches in country A about sport S – share of searches in country B about sport S* $|$

The within sports distance represents the absolute value of the difference between the share of sport S in the Google searches of country A and the share of sport S in the Google searches of country B. For example, it could be the difference between the share of total Italian Google searches that were on soccer and the share of total Google in searches in Germany that were on soccer. The measure is computed for all sports and countries considered.

The final measure of sports distance between countries A and B is calculated as follows:

$$Sport\ distance = \sum_S BD_S * WD_S$$

Where S is the set of all sports considered. Table 7.A1.2 (available on line) presents sports index scores for the set of host and origin countries in the pooled sample of PISA rounds from 2003, 2006, 2009, 2012 and 2012. Table 7.A1.1 below reports the results from the regression of the PISA science scores of immigrant students on the index of sports distance, individual control variables and other measures of dissimilarity between host and origin countries.

Table 7.A1.1 ■ **The association between sports distance and immigrant students' science scores**

Variable	Model 1	Model 2	Model 3
Sports Distance	-0.974*** (-3.04)	-0.812** (-2.33)	-1.085*** (-3.06)
Female student	-2.336 (-1.35)	-2.547 (-1.46)	-4.661*** (-2.73)
Parents' highest educational attainment	5.686*** (7.32)	5.541*** (6.89)	5.513*** (6.86)
Linguistic Distance		-0.216*** (-9.09)	-0.215*** (-9.05)
Sports Distance*Female			0.591*** (3.00)
Constant	415.6*** (50.54)	411.1*** (30.87)	409.1*** (31.00)
Observations	40 252	40 252	40 132
Adjusted R-squared	0.327	0.332	0.333
Host and origin country FE	Yes	Yes	Yes

Notes: t statistics in parentheses
* p<0.10, ** p<0.05, *** p<0.01
Regressions control for the ISCED level of the class where students were enrolled, the ammount of books they reported to have at home and for whether they were first-generation immigrants. Results also account for the geographic and cultural distance between host and origin countries.
The results were obtained using pooled data from the PISA rounds of 2003, 2006, 2009, 2012 and 2015.
Source: Adapted from Garibaldi, E. (2017), "The role of sports for the integration of immigrant students", Universitá L. Bocconi Graduate Thesis, Milano (unpublished).
StatLink 📊 http://dx.doi.org/10.1787/888933682737

Annex 7.A2

This section presents the results from the regression of school disciplinary climate and unfair treatment by teachers on school level factors.

Table 7.A2.1 ■ **Change in school level disciplinary climate associated with school level inputs, regression-based coefficients**

Variable	Model 1	Model 2	Model 3
Average number of years that teachers spent teaching in current school	1.76*** (0.33)	0.93*** (0.34)	0.95*** (0.33)
Average number of years that the teachers spent teaching overall	-1.25*** (0.24)	-0.1 (0.29)	-0.24 (0.30)
Transformational school leader	-0.47 (1.87)	4.2** (1.85)	2.38 (2.10)
School socio-economic profile (school average ESCS)	15.92*** (1.07)	15.73*** (1.19)	14.51*** (1.38)
Computer/student ratio			-2.89 (2.30)
Student/teacher ratio			-0.28*** (0.10)
Index of shortage of educational material			2.21 (2.16)
Index of shortage of educational staff			-8.7*** (2.03)
Number of afterschool activities			1.00** (0.49)
Constant	21.2*** (3.54)	10.16*** (3.60)	17.75*** (5.73)
Observations	157 229	157 229	133 353
Adjusted R-squared	0.109	0.369	0.406
Country FE	No	Yes	Yes

Notes: Standard error in parentheses.
* p<0.10, ** p<0.05, *** p<0.01
ESCS refers to the PISA index of economic, social and cultural status.
Source: OECD, PISA 2015 Database.
StatLink 🔗 http://dx.doi.org/10.1787/888933682756

Table 7.A2.2 ■ **Change in the likelihood that students will report having frequently experienced being unfairly treated by their teachers, regression-based coefficients**

Variable	Model 1	Model 2	Model 3	Model 4
Socio-economic status (ESCS)	-0.51*** (0.18)	-0.87*** (0.17)	-0.15 (0.31)	-0.34 (0.33)
Female student	-7.76*** (0.36)	-7.88*** (0.36)	-8.04*** (0.55)	-8*** (0.57)
Immigrant background	4.84*** (0.69)	3.82*** (0.62)	2.64** (1.09)	1.99* (1.17)
Average number of years that teachers spent teaching in current school			-0.51*** (0.11)	-0.46*** (0.11)
Average number of years that the teachers spent teaching overall			0.24** (0.09)	0.15 (0.10)
Transformational school leader			-1.44** (0.71)	-1.6** (0.73)
School socio-economic profile (school average ESCS)			-2.76*** (0.67)	-2.31*** (0.70)
Computer/student ratio				-0.62 (0.62)
Student/teacher ratio				0.01 (0.03)
Index of shortage of educational material				-0.53 (0.89)
Index of shortage of educational staff				0.8 (0.96)
Number of afterschool activities				-0.23 (0.18)
Constant	54.3*** (0.33)	54.34*** (0.32)	54.71*** (1.40)	57.69*** (2.05)
Observations	388 058	388 058	136 970	118 773
Adjusted R-squared	0.007	0.055	0.038	0.041
Country FE	No	Yes	Yes	Yes

Notes: Standard error in parentheses.
* p<0.10, ** p<0.05, *** p<0.01
ESCS refers to the PISA index of economic, social and cultural status.
Source: OECD, PISA 2015 Database.
StatLink 🔗 http://dx.doi.org/10.1787/888933682775

Notes

1. Students who reach proficiency level 2 in PISA core subjects.

2. Students who report 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 report a life satisfaction of 7 or above on a scale from 1 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. Students to "agree" or "strongly agree" with the statement "I want to be the best, whatever I do".

6. Results obtained with the use of the index are similar to those reported in the chapter.

7. School principals are asked whether their school offers any of the following: band, orchestra or choir; school play or school musical; school yearbook, newspaper or magazine; volunteering or service activities; science club; science competitions; chess club; club with a focus on computers/ICT; art club or art activities; sporting team or sporting activities and a country-specific item. The number of afterschool activities offered was calculated as the sum of positive answers to these questions.

8. The index of transformational leadership is obtained from teacher responses to the following questions: "the principal tries to achieve consensus with all staff when defining priorities and goals in school"; "the principal is aware of my needs"; "the principal inspires new ideas for my professional learning"; "the principal treats teaching staff as professionals"; "the principal ensures our involvement in decision making". Possible responses were "strongly disagree", "disagree", "agree" and "strongly agree".

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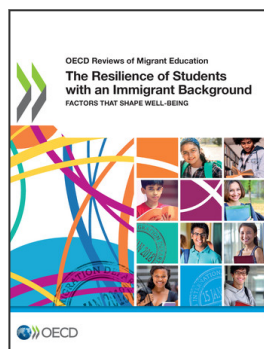
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