



Annexes

Annex A1: Defining and characterising student resilience in PISA

Annex A2: A profile of student resilience

Annex A3: Closing the gap? Enhancing the performance of socio-economically disadvantaged students

Annex A4: Conclusions and policy implications

Annex A5: Technical notes



Table A1.1 Shares of resilient and disadvantaged low achievers among all students, by country and gender

	Internationally comparable definition of resilient and disadvantaged low achievers							
	Resilient students						Disadvantaged low achievers	
	All students		Male		Female			
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD								
Australia	15.5	(0.4)	15.7	(0.6)	15.4	(0.6)	7.4	(0.4)
Austria	12.7	(0.8)	13.5	(1.2)	11.9	(0.9)	9.9	(1.0)
Belgium	12.4	(0.5)	11.9	(0.7)	12.9	(0.8)	9.8	(0.6)
Canada	17.1	(0.6)	18.0	(0.8)	16.2	(0.6)	6.1	(0.4)
Czech Republic	13.3	(0.8)	13.4	(1.1)	13.2	(1.0)	8.4	(0.7)
Denmark	10.6	(0.5)	11.2	(0.8)	10.0	(0.8)	10.4	(0.8)
Finland	22.2	(0.7)	21.5	(1.0)	22.9	(1.1)	2.6	(0.3)
France	10.9	(0.7)	10.4	(0.9)	11.4	(0.8)	11.2	(0.9)
Germany	12.6	(0.6)	11.8	(0.7)	13.4	(0.9)	8.8	(0.8)
Greece	10.5	(0.7)	8.7	(0.8)	12.4	(0.9)	10.3	(0.9)
Hungary	12.7	(0.7)	12.5	(0.9)	12.9	(1.0)	7.3	(0.6)
Iceland	9.4	(0.5)	8.3	(0.7)	10.4	(0.8)	12.6	(0.6)
Ireland	14.4	(0.7)	14.4	(1.0)	14.4	(0.9)	7.6	(0.8)
Italy	11.0	(0.5)	10.9	(0.6)	11.0	(0.6)	10.4	(0.5)
Japan	17.6	(0.8)	17.2	(0.9)	18.0	(1.0)	6.3	(0.7)
Korea	17.7	(0.9)	17.8	(1.3)	17.7	(1.1)	5.3	(0.6)
Luxembourg	9.7	(0.4)	10.0	(0.6)	9.5	(0.6)	11.2	(0.5)
Mexico	7.7	(0.4)	8.3	(0.6)	7.2	(0.7)	10.5	(1.0)
Netherlands	14.8	(0.7)	14.6	(1.0)	14.9	(1.0)	7.6	(0.7)
New Zealand	15.2	(0.6)	15.5	(0.9)	14.9	(0.9)	7.6	(0.6)
Norway	8.9	(0.5)	8.0	(0.7)	9.9	(0.9)	12.5	(0.8)
Poland	14.1	(0.7)	12.9	(0.8)	15.2	(0.9)	7.1	(0.5)
Portugal	15.4	(0.8)	15.8	(1.1)	15.0	(1.0)	5.4	(0.6)
Slovak Republic	10.8	(0.6)	10.7	(0.8)	11.0	(0.9)	10.4	(0.7)
Spain	14.7	(0.6)	14.8	(0.8)	14.6	(0.8)	6.5	(0.5)
Sweden	12.1	(0.7)	12.4	(0.9)	11.7	(1.0)	9.1	(0.6)
Switzerland	13.6	(0.5)	13.5	(0.6)	13.6	(0.7)	8.7	(0.5)
Turkey	11.1	(0.8)	11.5	(1.1)	10.7	(0.9)	6.9	(0.8)
United Kingdom	13.5	(0.6)	14.1	(0.7)	13.0	(0.8)	8.9	(0.5)
United States	9.9	(0.7)	10.9	(0.9)	8.9	(0.8)	12.6	(1.4)
OECD average	13.0	(0.1)	13.0	(0.1)	13.1	(0.1)	8.6	(0.1)
Partners								
Argentina	4.2	(0.4)	4.1	(0.7)	4.3	(0.6)	18.9	(1.7)
Azerbaijan	2.6	(0.7)	2.7	(0.8)	2.6	(0.7)	18.8	(1.0)
Brazil	6.5	(0.5)	7.1	(0.7)	6.0	(0.6)	13.0	(0.8)
Bulgaria	4.9	(0.4)	4.7	(0.6)	5.2	(0.6)	19.0	(1.6)
Chile	8.2	(0.7)	8.7	(0.9)	7.7	(0.9)	11.6	(1.0)
Colombia	6.3	(0.6)	7.3	(0.8)	5.5	(0.8)	13.1	(1.2)
Croatia	12.3	(0.6)	12.3	(0.8)	12.3	(1.0)	7.3	(0.6)
Estonia	18.4	(0.9)	16.3	(1.1)	20.6	(1.2)	4.2	(0.5)
Hong Kong-China	24.8	(1.0)	27.2	(1.3)	22.5	(1.3)	2.1	(0.3)
Indonesia	7.9	(0.8)	8.4	(1.0)	7.3	(0.8)	8.0	(0.8)
Israel	6.4	(0.6)	6.9	(0.8)	6.0	(0.7)	17.3	(0.9)
Jordan	7.3	(0.5)	5.2	(0.5)	9.4	(1.0)	12.6	(0.7)
Kyrgyzstan	0.5	(0.1)	0.5	(0.2)	0.4	(0.2)	28.5	(1.0)
Latvia	13.4	(0.8)	12.3	(1.2)	14.5	(0.9)	7.1	(0.7)
Lithuania	11.3	(0.6)	10.2	(1.0)	12.5	(0.8)	9.9	(0.6)
Macao-China	24.3	(0.8)	24.6	(1.1)	24.0	(1.1)	1.5	(0.3)
Montenegro	3.7	(0.5)	3.2	(0.5)	4.2	(0.6)	19.4	(0.6)
Romania	4.0	(0.6)	3.7	(0.6)	4.4	(1.0)	17.2	(1.5)
Russian Federation	11.2	(0.9)	10.6	(1.0)	11.8	(1.1)	9.6	(0.8)
Serbia	5.3	(0.5)	5.1	(0.6)	5.6	(0.6)	15.8	(1.1)
Slovenia	13.6	(0.5)	12.4	(0.7)	14.7	(0.8)	8.2	(0.4)
Chinese Taipei	19.2	(0.8)	19.8	(0.9)	18.5	(1.1)	4.5	(0.5)
Thailand	11.7	(0.7)	10.4	(1.1)	12.7	(0.7)	5.5	(0.6)
Tunisia	8.7	(0.8)	9.0	(1.0)	8.4	(0.9)	10.3	(0.7)
Uruguay	7.6	(0.6)	7.3	(0.7)	7.8	(0.8)	13.1	(0.9)



Table A1.2 PISA index of economic, social and cultural status for system average, resilient and disadvantaged low achievers

	Index of social, economic and cultural status					
	All students		Disadvantaged low achievers		Resilient	
	Mean index	S.E.	Mean index	S.E.	Mean index	S.E.
OECD						
Australia	0.21	(0.02)	-0.74	(0.01)	-0.57	(0.02)
Austria	0.20	(0.02)	-0.80	(0.04)	-0.56	(0.02)
Belgium	0.17	(0.02)	-0.94	(0.02)	-0.66	(0.02)
Canada	0.37	(0.02)	-0.61	(0.02)	-0.43	(0.02)
Czech Republic	0.03	(0.02)	-0.88	(0.02)	-0.70	(0.02)
Denmark	0.31	(0.03)	-0.78	(0.03)	-0.54	(0.03)
Finland	0.26	(0.02)	-0.67	(0.02)	-0.55	(0.02)
France	-0.09	(0.03)	-1.10	(0.02)	-0.93	(0.04)
Germany	0.29	(0.03)	-0.84	(0.03)	-0.51	(0.03)
Greece	-0.15	(0.04)	-1.33	(0.02)	-1.09	(0.03)
Hungary	-0.09	(0.03)	-1.19	(0.02)	-0.89	(0.03)
Iceland	0.77	(0.01)	-0.30	(0.02)	-0.12	(0.03)
Ireland	-0.02	(0.03)	-1.01	(0.02)	-0.85	(0.03)
Italy	-0.07	(0.02)	-1.21	(0.01)	-1.02	(0.02)
Japan	-0.01	(0.02)	-0.83	(0.02)	-0.71	(0.02)
Korea	-0.01	(0.02)	-0.96	(0.03)	-0.83	(0.02)
Luxembourg	0.09	(0.01)	-1.32	(0.02)	-0.92	(0.04)
Mexico	-0.99	(0.04)	-2.50	(0.03)	-2.31	(0.03)
Netherlands	0.25	(0.03)	-0.83	(0.04)	-0.59	(0.03)
New Zealand	0.10	(0.02)	-0.89	(0.02)	-0.71	(0.02)
Norway	0.42	(0.02)	-0.47	(0.02)	-0.31	(0.02)
Poland	-0.30	(0.02)	-1.24	(0.02)	-1.11	(0.02)
Portugal	-0.62	(0.04)	-2.06	(0.02)	-1.87	(0.02)
Slovak Republic	-0.15	(0.03)	-1.17	(0.05)	-0.89	(0.02)
Spain	-0.31	(0.03)	-1.56	(0.02)	-1.35	(0.02)
Sweden	0.24	(0.02)	-0.72	(0.02)	-0.54	(0.03)
Switzerland	0.09	(0.02)	-0.98	(0.02)	-0.75	(0.02)
Turkey	-1.28	(0.05)	-2.48	(0.03)	-2.33	(0.03)
United Kingdom	0.19	(0.02)	-0.79	(0.02)	-0.56	(0.02)
United States	0.14	(0.04)	-0.96	(0.03)	-0.73	(0.02)
OECD average	0.00	(0.00)	-1.07	(0.00)	-0.86	(0.00)
Partners						
Argentina	-0.64	(0.07)	-2.02	(0.03)	-1.79	(0.04)
Azerbaijan	-0.45	(0.03)	-1.62	(0.03)	-1.57	(0.05)
Brazil	-1.12	(0.03)	-2.61	(0.02)	-2.41	(0.04)
Bulgaria	-0.21	(0.05)	-1.42	(0.04)	-1.04	(0.03)
Chile	-0.70	(0.06)	-2.03	(0.03)	-1.88	(0.06)
Colombia	-1.00	(0.05)	-2.44	(0.04)	-2.28	(0.05)
Croatia	-0.11	(0.02)	-1.09	(0.02)	-0.93	(0.03)
Estonia	0.14	(0.02)	-0.79	(0.02)	-0.71	(0.03)
Hong Kong-China	-0.67	(0.03)	-1.74	(0.02)	-1.60	(0.02)
Indonesia	-1.52	(0.05)	-2.72	(0.02)	-2.65	(0.03)
Israel	0.22	(0.02)	-0.81	(0.02)	-0.61	(0.04)
Jordan	-0.57	(0.03)	-1.94	(0.05)	-1.66	(0.04)
Kyrgyzstan	-0.66	(0.02)	-1.64	(0.03)	-1.57	(0.02)
Latvia	-0.02	(0.02)	-1.10	(0.02)	-0.91	(0.02)
Lithuania	0.04	(0.03)	-1.08	(0.02)	-0.87	(0.02)
Macao-China	-0.91	(0.01)	-1.89	(0.02)	-1.77	(0.02)
Montenegro	-0.02	(0.01)	-1.08	(0.02)	-0.93	(0.03)
Romania	-0.37	(0.04)	-1.52	(0.04)	-1.14	(0.03)
Russian Federation	-0.10	(0.03)	-1.01	(0.02)	-0.92	(0.02)
Serbia	-0.14	(0.03)	-1.20	(0.02)	-1.04	(0.02)
Slovenia	0.13	(0.01)	-0.88	(0.01)	-0.71	(0.03)
Chinese Taipei	-0.31	(0.02)	-1.25	(0.02)	-1.10	(0.02)
Thailand	-1.43	(0.03)	-2.57	(0.03)	-2.48	(0.02)
Tunisia	-1.20	(0.07)	-2.75	(0.03)	-2.63	(0.03)
Uruguay	-0.51	(0.03)	-1.95	(0.03)	-1.69	(0.04)

[Part 1/3]
Table A1.3 Differences in the components of the economic, social and cultural status index

	Wealth						Educational resources						
	Resilient students		Disadvantaged low achievers		Difference in the mean index between resilient students and disadvantaged low achievers		Resilient students		Disadvantaged low achievers		Difference in the mean index between resilient students and disadvantaged low achievers		
	Mean	S.E.	Mean	S.E.	Dif	S.E.	Mean	S.E.	Mean	S.E.	Dif	S.E.	
OECD	Australia	-0.08	(0.03)	0.04	(0.02)	-0.12	(0.04)	-0.15	(0.04)	-0.47	(0.03)	0.32	(0.05)
	Austria	-0.25	(0.04)	-0.34	(0.04)	0.10	(0.06)	0.24	(0.06)	-0.07	(0.05)	0.31	(0.08)
	Belgium	-0.18	(0.04)	-0.31	(0.03)	0.13	(0.05)	0.00	(0.04)	-0.37	(0.04)	0.37	(0.05)
	Canada	-0.23	(0.03)	-0.21	(0.02)	-0.02	(0.04)	-0.27	(0.04)	-0.49	(0.03)	0.23	(0.05)
	Czech Republic	-0.97	(0.04)	-1.04	(0.03)	0.07	(0.05)	0.09	(0.06)	-0.56	(0.05)	0.65	(0.08)
	Denmark	0.43	(0.07)	0.44	(0.04)	-0.01	(0.08)	-0.17	(0.06)	-0.20	(0.04)	0.03	(0.07)
	Finland	-0.01	(0.05)	0.12	(0.03)	-0.13	(0.05)	-0.35	(0.08)	-0.45	(0.04)	0.10	(0.08)
	France	-0.62	(0.04)	-0.69	(0.03)	0.07	(0.06)	0.18	(0.07)	-0.31	(0.05)	0.49	(0.09)
	Germany	-0.22	(0.05)	-0.27	(0.03)	0.05	(0.06)	0.15	(0.08)	-0.15	(0.05)	0.30	(0.09)
	Greece	-0.77	(0.05)	-0.75	(0.03)	-0.02	(0.05)	-0.80	(0.06)	-1.26	(0.03)	0.46	(0.07)
	Hungary	-1.01	(0.05)	-0.98	(0.03)	-0.02	(0.05)	-0.26	(0.08)	-0.93	(0.05)	0.67	(0.10)
	Iceland	0.56	(0.05)	0.68	(0.03)	-0.12	(0.06)	0.13	(0.05)	-0.14	(0.04)	0.28	(0.07)
	Ireland	-0.34	(0.04)	-0.34	(0.03)	-0.00	(0.05)	-0.29	(0.06)	-0.72	(0.04)	0.42	(0.08)
	Italy	-0.52	(0.02)	-0.60	(0.02)	0.08	(0.03)	0.14	(0.04)	-0.39	(0.04)	0.52	(0.06)
	Japan	-0.56	(0.04)	-0.50	(0.03)	-0.06	(0.04)	-1.03	(0.05)	-1.19	(0.04)	0.16	(0.06)
	Korea	-0.79	(0.04)	-0.87	(0.04)	0.08	(0.05)	-0.40	(0.05)	-0.74	(0.03)	0.34	(0.06)
	Luxembourg	0.00	(0.06)	-0.20	(0.03)	0.20	(0.06)	0.02	(0.08)	-0.07	(0.04)	0.09	(0.09)
	Mexico	-2.41	(0.05)	-2.56	(0.05)	0.16	(0.07)	-1.28	(0.05)	-1.59	(0.04)	0.31	(0.06)
	Netherlands	0.19	(0.04)	0.22	(0.04)	-0.02	(0.06)	-0.07	(0.05)	-0.44	(0.05)	0.36	(0.07)
	New Zealand	-0.15	(0.05)	-0.23	(0.03)	0.08	(0.05)	-0.40	(0.07)	-0.64	(0.04)	0.24	(0.07)
	Norway	0.25	(0.05)	0.32	(0.04)	-0.06	(0.06)	-0.13	(0.05)	-0.43	(0.05)	0.31	(0.07)
	Poland	-1.51	(0.04)	-1.46	(0.03)	-0.04	(0.05)	-0.23	(0.05)	-0.68	(0.04)	0.45	(0.07)
	Portugal	-0.72	(0.04)	-0.91	(0.03)	0.19	(0.05)	0.06	(0.06)	-0.49	(0.04)	0.55	(0.08)
	Slovak Republic	-1.42	(0.04)	-1.45	(0.04)	0.03	(0.05)	-0.29	(0.08)	-1.13	(0.07)	0.84	(0.12)
	Spain	-0.59	(0.03)	-0.55	(0.03)	-0.05	(0.04)	0.15	(0.05)	-0.35	(0.03)	0.51	(0.06)
	Sweden	0.25	(0.04)	0.31	(0.04)	-0.06	(0.05)	-0.49	(0.06)	-0.71	(0.04)	0.22	(0.08)
Switzerland	-0.35	(0.04)	-0.28	(0.02)	-0.07	(0.05)	0.06	(0.06)	-0.13	(0.04)	0.18	(0.07)	
Turkey	-2.27	(0.06)	-2.48	(0.04)	0.21	(0.07)	-1.31	(0.08)	-1.95	(0.05)	0.64	(0.09)	
United Kingdom	-0.21	(0.07)	-0.07	(0.03)	-0.14	(0.07)	-0.42	(0.06)	-0.64	(0.03)	0.22	(0.06)	
United States	-0.39	(0.04)	-0.44	(0.03)	0.06	(0.05)	-0.73	(0.08)	-0.94	(0.05)	0.21	(0.09)	
OECD average	-0.48	(0.01)	-0.52	(0.01)	0.04	(0.02)	-0.27	(0.01)	-0.61	(0.01)	0.34	(0.01)	
Partners	Argentina	-1.82	(0.06)	-2.05	(0.06)	0.23	(0.09)	-1.02	(0.09)	-1.49	(0.06)	0.47	(0.11)
	Azerbaijan	-2.76	(0.06)	-2.59	(0.04)	-0.17	(0.07)	-1.90	(0.07)	-2.15	(0.07)	0.25	(0.09)
	Brazil	-2.04	(0.05)	-2.34	(0.03)	0.29	(0.06)	-1.57	(0.07)	-1.87	(0.04)	0.30	(0.07)
	Bulgaria	-1.25	(0.05)	-1.45	(0.04)	0.20	(0.06)	-1.10	(0.07)	-1.74	(0.05)	0.63	(0.08)
	Chile	-1.78	(0.07)	-1.85	(0.04)	0.06	(0.07)	-1.22	(0.10)	-1.53	(0.04)	0.30	(0.11)
	Colombia	-2.40	(0.10)	-2.57	(0.06)	0.17	(0.09)	-1.44	(0.12)	-1.86	(0.07)	0.42	(0.12)
	Croatia	-0.98	(0.04)	-1.03	(0.03)	0.06	(0.06)	-0.21	(0.06)	-0.68	(0.04)	0.47	(0.07)
	Estonia	-0.95	(0.04)	-0.93	(0.05)	-0.03	(0.07)	-0.46	(0.06)	-0.62	(0.04)	0.16	(0.07)
	Hong Kong-China	-1.00	(0.04)	-1.01	(0.03)	0.01	(0.05)	-0.34	(0.05)	-0.59	(0.04)	0.25	(0.07)
	Indonesia	-3.48	(0.08)	-3.58	(0.05)	0.10	(0.10)	-1.97	(0.06)	-2.18	(0.05)	0.21	(0.07)
	Israel	-0.80	(0.06)	-0.80	(0.04)	0.00	(0.06)	-0.46	(0.06)	-0.68	(0.04)	0.22	(0.07)
	Jordan	-2.15	(0.06)	-2.20	(0.04)	0.05	(0.06)	-1.59	(0.07)	-2.03	(0.05)	0.44	(0.08)
	Kyrgyzstan	-3.02	(0.06)	-2.81	(0.04)	-0.20	(0.07)	-1.66	(0.06)	-1.87	(0.05)	0.21	(0.08)
	Latvia	-1.25	(0.05)	-1.47	(0.04)	0.22	(0.06)	-0.23	(0.08)	-0.82	(0.05)	0.59	(0.09)
	Lithuania	-1.04	(0.04)	-1.19	(0.03)	0.16	(0.04)	-0.17	(0.07)	-0.89	(0.04)	0.72	(0.08)
	Macao-China	-1.13	(0.05)	-1.13	(0.04)	-0.01	(0.07)	-0.67	(0.05)	-0.99	(0.04)	0.33	(0.07)
	Montenegro	-1.38	(0.04)	-1.12	(0.03)	-0.26	(0.04)	-0.78	(0.05)	-1.23	(0.05)	0.45	(0.08)
	Romania	-1.91	(0.06)	-1.99	(0.05)	0.08	(0.07)	-1.20	(0.08)	-1.75	(0.07)	0.55	(0.10)
	Russian Federation	-1.79	(0.04)	-1.72	(0.03)	-0.06	(0.05)	-0.72	(0.06)	-1.05	(0.05)	0.33	(0.08)
	Serbia	-1.31	(0.04)	-1.28	(0.03)	-0.03	(0.05)	-0.60	(0.07)	-1.03	(0.05)	0.43	(0.09)
Slovenia	-0.36	(0.05)	-0.31	(0.03)	-0.05	(0.06)	0.19	(0.05)	-0.17	(0.03)	0.36	(0.06)	
Chinese Taipei	-0.65	(0.03)	-0.56	(0.03)	-0.09	(0.04)	-0.71	(0.05)	-1.09	(0.04)	0.38	(0.06)	
Thailand	-2.43	(0.05)	-2.44	(0.05)	0.01	(0.06)	-1.83	(0.05)	-2.15	(0.04)	0.32	(0.05)	
Tunisia	-2.84	(0.05)	-2.90	(0.05)	0.07	(0.06)	-1.87	(0.05)	-2.31	(0.05)	0.44	(0.07)	
Uruguay	-1.83	(0.07)	-1.91	(0.04)	0.08	(0.07)	-0.87	(0.07)	-1.28	(0.05)	0.42	(0.10)	

Note: Values that are statistically different are indicated in bold.



[Part 2/3]
Table A1.3 Differences in the components of the economic, social and cultural status index

	Cultural possessions						Number of books					
	Resilient students		Disadvantaged low achievers		Difference in the mean index between resilient students and disadvantaged low achievers		Resilient students		Disadvantaged low achievers		Difference in the mean index between resilient students and disadvantaged low achievers	
	Mean	S.E.	Mean	S.E.	Dif	S.E.	Mean	S.E.	Mean	S.E.	Dif	S.E.
OECD												
Australia	-0.45	(0.04)	-0.73	(0.03)	0.28	(0.04)	3.53	(0.05)	2.74	(0.04)	0.78	(0.06)
Austria	-0.34	(0.05)	-0.51	(0.03)	0.17	(0.07)	3.24	(0.06)	2.14	(0.05)	1.10	(0.07)
Belgium	-0.62	(0.05)	-0.83	(0.03)	0.21	(0.05)	2.87	(0.06)	2.22	(0.04)	0.66	(0.07)
Canada	-0.48	(0.05)	-0.74	(0.04)	0.25	(0.06)	3.36	(0.05)	2.68	(0.04)	0.67	(0.06)
Czech Republic	-0.31	(0.06)	-0.52	(0.04)	0.21	(0.07)	3.45	(0.08)	2.67	(0.06)	0.78	(0.10)
Denmark	-0.64	(0.07)	-0.85	(0.04)	0.21	(0.07)	3.05	(0.10)	2.33	(0.07)	0.73	(0.13)
Finland	-0.08	(0.06)	-0.49	(0.03)	0.42	(0.07)	3.44	(0.07)	2.77	(0.04)	0.68	(0.08)
France	-0.37	(0.06)	-0.86	(0.03)	0.49	(0.07)	3.05	(0.08)	2.16	(0.05)	0.90	(0.09)
Germany	-0.24	(0.06)	-0.45	(0.03)	0.21	(0.07)	3.35	(0.09)	2.33	(0.06)	1.02	(0.11)
Greece	-0.38	(0.05)	-0.52	(0.04)	0.14	(0.07)	2.84	(0.09)	2.40	(0.05)	0.44	(0.10)
Hungary	0.08	(0.08)	-0.43	(0.05)	0.52	(0.10)	3.48	(0.09)	2.51	(0.06)	0.97	(0.11)
Iceland	0.52	(0.07)	0.18	(0.04)	0.34	(0.08)	3.87	(0.08)	3.09	(0.05)	0.78	(0.10)
Ireland	-0.52	(0.06)	-0.77	(0.04)	0.24	(0.06)	3.15	(0.08)	2.24	(0.06)	0.91	(0.10)
Italy	-0.03	(0.04)	-0.22	(0.03)	0.19	(0.05)	2.93	(0.06)	2.40	(0.04)	0.53	(0.07)
Japan	-0.76	(0.05)	-1.02	(0.02)	0.26	(0.05)	3.15	(0.07)	2.64	(0.06)	0.51	(0.09)
Korea	-0.22	(0.06)	-0.67	(0.04)	0.45	(0.07)	3.40	(0.06)	2.67	(0.04)	0.73	(0.08)
Luxembourg	-0.39	(0.08)	-0.70	(0.03)	0.31	(0.09)	3.41	(0.10)	2.39	(0.04)	1.02	(0.11)
Mexico	-0.80	(0.04)	-0.85	(0.03)	0.05	(0.05)	1.58	(0.04)	1.49	(0.03)	0.09	(0.05)
Netherlands	-0.76	(0.07)	-0.84	(0.04)	0.08	(0.09)	2.92	(0.10)	2.17	(0.06)	0.75	(0.11)
New Zealand	-0.58	(0.07)	-0.68	(0.04)	0.10	(0.09)	3.52	(0.09)	2.66	(0.05)	0.86	(0.10)
Norway	-0.09	(0.06)	-0.54	(0.05)	0.46	(0.08)	3.67	(0.09)	2.89	(0.06)	0.77	(0.10)
Poland	-0.29	(0.05)	-0.61	(0.04)	0.32	(0.06)	2.74	(0.06)	2.20	(0.04)	0.54	(0.07)
Portugal	-0.52	(0.05)	-0.75	(0.04)	0.22	(0.06)	2.35	(0.07)	1.98	(0.06)	0.37	(0.10)
Slovak Republic	0.11	(0.06)	-0.18	(0.04)	0.29	(0.07)	3.24	(0.07)	2.36	(0.06)	0.88	(0.09)
Spain	-0.09	(0.04)	-0.44	(0.02)	0.35	(0.05)	3.33	(0.05)	2.46	(0.04)	0.86	(0.06)
Sweden	-0.37	(0.07)	-0.69	(0.06)	0.32	(0.11)	3.62	(0.09)	2.77	(0.06)	0.85	(0.09)
Switzerland	-0.54	(0.06)	-0.63	(0.03)	0.08	(0.06)	3.29	(0.08)	2.19	(0.04)	1.11	(0.09)
Turkey	-0.37	(0.06)	-0.66	(0.03)	0.29	(0.07)	2.09	(0.08)	1.70	(0.04)	0.39	(0.09)
United Kingdom	-0.53	(0.07)	-0.71	(0.03)	0.18	(0.08)	3.22	(0.12)	2.22	(0.04)	1.00	(0.13)
United States	-0.35	(0.07)	-0.66	(0.05)	0.31	(0.08)	3.09	(0.12)	2.04	(0.08)	1.05	(0.13)
OECD average	-0.34	(0.01)	-0.61	(0.01)	0.28	(0.01)	3.16	(0.02)	2.38	(0.01)	0.78	(0.02)
Partners												
Argentina	-0.55	(0.07)	-0.67	(0.03)	0.12	(0.07)	1.93	(0.09)	1.58	(0.04)	0.35	(0.10)
Azerbaijan	0.14	(0.08)	0.11	(0.06)	0.03	(0.10)	1.77	(0.08)	1.65	(0.06)	0.13	(0.09)
Brazil	-0.48	(0.06)	-0.40	(0.04)	-0.08	(0.08)	1.59	(0.06)	1.53	(0.03)	0.06	(0.07)
Bulgaria	0.15	(0.07)	-0.38	(0.04)	0.53	(0.09)	2.79	(0.09)	1.73	(0.05)	1.06	(0.10)
Chile	-0.49	(0.06)	-0.56	(0.03)	0.07	(0.06)	2.07	(0.10)	1.70	(0.04)	0.37	(0.10)
Colombia	-0.43	(0.08)	-0.49	(0.05)	0.07	(0.09)	1.68	(0.08)	1.45	(0.06)	0.22	(0.09)
Croatia	-0.58	(0.05)	-0.85	(0.03)	0.27	(0.06)	2.06	(0.06)	1.63	(0.03)	0.44	(0.07)
Estonia	0.11	(0.06)	-0.07	(0.05)	0.18	(0.08)	3.79	(0.09)	2.98	(0.07)	0.81	(0.11)
Hong Kong-China	-0.66	(0.04)	-0.89	(0.03)	0.24	(0.05)	2.20	(0.06)	1.73	(0.04)	0.47	(0.07)
Indonesia	-1.05	(0.04)	-0.91	(0.04)	-0.14	(0.05)	1.94	(0.05)	1.93	(0.05)	0.01	(0.06)
Israel	-0.16	(0.07)	-0.45	(0.04)	0.29	(0.08)	3.26	(0.12)	2.73	(0.08)	0.53	(0.14)
Jordan	-0.59	(0.05)	-0.71	(0.03)	0.13	(0.06)	1.79	(0.06)	1.76	(0.04)	0.03	(0.06)
Kyrgyzstan	-0.19	(0.05)	-0.35	(0.04)	0.16	(0.07)	1.65	(0.06)	1.51	(0.04)	0.13	(0.07)
Latvia	0.24	(0.07)	-0.05	(0.05)	0.30	(0.09)	3.55	(0.09)	2.77	(0.08)	0.79	(0.11)
Lithuania	-0.04	(0.07)	-0.48	(0.04)	0.44	(0.07)	2.82	(0.09)	2.13	(0.04)	0.69	(0.09)
Macao-China	-0.72	(0.05)	-0.90	(0.03)	0.17	(0.05)	2.09	(0.07)	1.95	(0.06)	0.14	(0.09)
Montenegro	0.21	(0.04)	-0.20	(0.04)	0.42	(0.06)	2.32	(0.07)	1.87	(0.05)	0.45	(0.09)
Romania	0.43	(0.09)	-0.13	(0.06)	0.56	(0.10)	2.64	(0.08)	1.87	(0.05)	0.77	(0.09)
Russian Federation	0.31	(0.05)	0.14	(0.05)	0.17	(0.07)	3.10	(0.07)	2.56	(0.06)	0.54	(0.10)
Serbia	-0.05	(0.05)	-0.44	(0.04)	0.38	(0.07)	2.32	(0.07)	1.82	(0.05)	0.49	(0.09)
Slovenia	-0.05	(0.07)	-0.55	(0.04)	0.50	(0.08)	2.87	(0.09)	2.07	(0.04)	0.79	(0.10)
Chinese Taipei	-0.21	(0.05)	-0.60	(0.02)	0.40	(0.05)	2.72	(0.06)	2.04	(0.04)	0.68	(0.07)
Thailand	-0.45	(0.06)	-0.44	(0.04)	-0.01	(0.07)	1.94	(0.06)	1.77	(0.05)	0.17	(0.08)
Tunisia	-0.74	(0.05)	-0.91	(0.03)	0.17	(0.07)	1.52	(0.06)	1.47	(0.04)	0.05	(0.07)
Uruguay	-0.28	(0.07)	-0.64	(0.04)	0.36	(0.09)	2.17	(0.09)	1.74	(0.06)	0.43	(0.11)

Note: Values that are statistically different are indicated in bold.

[Part 3/3]
Table A1.3 Differences in the components of the economic, social and cultural status index

	Parental occupation						Parental education						
	Resilient students		Disadvantaged low achievers		Difference in the mean index between resilient students and disadvantaged low achievers		Resilient students		Disadvantaged low achievers		Difference in the mean index between resilient students and disadvantaged low achievers		
	Mean	S.E.	Mean	S.E.	Dif	S.E.	Mean	S.E.	Mean	S.E.	Dif	S.E.	
OECD													
Australia	38.40	(0.41)	35.67	(0.27)	2.72	(0.50)	11.78	(0.08)	11.40	(0.06)	0.39	(0.10)	
Austria	33.68	(0.80)	32.64	(0.35)	1.04	(0.89)	12.34	(0.10)	11.72	(0.23)	0.62	(0.25)	
Belgium	34.51	(0.53)	33.17	(0.42)	1.34	(0.67)	11.90	(0.10)	10.94	(0.15)	0.95	(0.17)	
Canada	40.51	(0.46)	37.58	(0.36)	2.93	(0.61)	12.77	(0.11)	12.41	(0.09)	0.36	(0.14)	
Czech Republic	36.56	(0.55)	34.85	(0.37)	1.71	(0.60)	11.91	(0.11)	11.81	(0.10)	0.10	(0.15)	
Denmark	34.53	(0.80)	33.01	(0.38)	1.52	(0.84)	12.30	(0.15)	11.39	(0.13)	0.91	(0.20)	
Finland	33.32	(0.59)	33.08	(0.43)	0.24	(0.76)	12.82	(0.16)	12.28	(0.12)	0.54	(0.20)	
France	33.46	(0.77)	32.76	(0.44)	0.70	(0.90)	10.31	(0.23)	10.18	(0.14)	0.14	(0.26)	
Germany	34.75	(0.73)	34.04	(0.33)	0.71	(0.81)	12.48	(0.15)	10.94	(0.18)	1.54	(0.25)	
Greece	33.33	(0.78)	32.11	(0.35)	1.22	(0.83)	10.72	(0.16)	9.73	(0.13)	0.99	(0.20)	
Hungary	35.30	(0.73)	33.84	(0.36)	1.45	(0.83)	11.04	(0.11)	10.26	(0.08)	0.78	(0.14)	
Iceland	37.48	(0.81)	37.97	(0.51)	-0.49	(0.96)	12.95	(0.18)	12.00	(0.14)	0.94	(0.24)	
Ireland	33.58	(0.70)	33.52	(0.39)	0.06	(0.81)	11.20	(0.14)	10.85	(0.11)	0.35	(0.18)	
Italy	33.82	(0.46)	32.21	(0.36)	1.61	(0.59)	9.24	(0.11)	8.91	(0.09)	0.33	(0.15)	
Japan	39.19	(0.48)	38.84	(0.34)	0.35	(0.62)	12.68	(0.09)	12.02	(0.06)	0.66	(0.10)	
Korea	37.56	(0.69)	39.17	(0.41)	-1.60	(0.75)	11.27	(0.12)	10.96	(0.10)	0.31	(0.15)	
Luxembourg	35.96	(1.09)	30.98	(0.32)	4.98	(1.16)	9.01	(0.32)	7.92	(0.16)	1.09	(0.36)	
Mexico	26.38	(0.39)	26.17	(0.48)	0.22	(0.60)	6.40	(0.15)	5.75	(0.12)	0.65	(0.20)	
Netherlands	39.02	(0.73)	35.31	(0.50)	3.71	(0.89)	11.37	(0.12)	10.89	(0.16)	0.48	(0.21)	
New Zealand	37.40	(0.84)	35.86	(0.44)	1.54	(1.01)	11.32	(0.15)	10.87	(0.11)	0.45	(0.20)	
Norway	39.33	(0.59)	38.61	(0.44)	0.72	(0.73)	12.61	(0.15)	12.31	(0.11)	0.30	(0.16)	
Poland	30.97	(0.52)	31.03	(0.37)	-0.07	(0.58)	11.18	(0.07)	10.72	(0.06)	0.47	(0.08)	
Portugal	30.17	(0.52)	28.56	(0.33)	1.61	(0.53)	4.56	(0.13)	4.45	(0.08)	0.11	(0.16)	
Slovak Republic	34.46	(0.50)	31.74	(0.49)	2.72	(0.66)	11.88	(0.06)	11.48	(0.14)	0.40	(0.16)	
Spain	31.52	(0.51)	30.99	(0.31)	0.52	(0.63)	7.26	(0.18)	6.51	(0.10)	0.75	(0.20)	
Sweden	37.68	(0.61)	35.04	(0.42)	2.64	(0.74)	12.12	(0.16)	11.84	(0.15)	0.28	(0.24)	
Switzerland	35.44	(0.63)	34.21	(0.32)	1.23	(0.65)	11.21	(0.15)	10.09	(0.11)	1.12	(0.17)	
Turkey	26.95	(0.82)	28.49	(0.63)	-1.54	(0.98)	5.52	(0.12)	5.61	(0.15)	-0.09	(0.20)	
United Kingdom	38.76	(0.87)	34.34	(0.36)	4.41	(0.81)	12.35	(0.09)	11.90	(0.12)	0.45	(0.16)	
United States	36.66	(0.79)	34.92	(0.42)	1.74	(0.93)	12.08	(0.13)	11.38	(0.20)	0.70	(0.22)	
OECD average	35.15	(0.13)	33.65	(0.09)	1.51	(0.14)	10.95	(0.04)	10.29	(0.04)	0.66	(0.05)	
Partners													
Argentina	33.21	(0.69)	31.85	(0.54)	1.35	(0.93)	7.51	(0.23)	7.11	(0.18)	0.40	(0.29)	
Azerbaijan	31.11	(0.79)	31.39	(0.60)	-0.28	(0.87)	11.26	(0.10)	11.00	(0.11)	0.25	(0.14)	
Brazil	26.12	(0.98)	24.49	(0.53)	1.63	(1.10)	5.31	(0.18)	4.94	(0.09)	0.37	(0.21)	
Bulgaria	33.44	(0.58)	32.06	(0.34)	1.38	(0.67)	11.62	(0.12)	10.87	(0.13)	0.75	(0.17)	
Chile	26.13	(0.67)	26.55	(0.52)	-0.42	(0.81)	8.45	(0.30)	7.80	(0.11)	0.65	(0.32)	
Colombia	28.73	(1.27)	28.12	(0.66)	0.62	(1.50)	5.98	(0.40)	5.80	(0.16)	0.17	(0.46)	
Croatia	34.85	(0.54)	33.43	(0.36)	1.43	(0.59)	11.48	(0.10)	11.23	(0.10)	0.25	(0.15)	
Estonia	34.84	(0.59)	33.52	(0.38)	1.33	(0.68)	12.15	(0.07)	12.28	(0.09)	-0.13	(0.12)	
Hong Kong-China	31.90	(0.53)	30.95	(0.38)	0.94	(0.60)	7.50	(0.12)	7.22	(0.11)	0.28	(0.15)	
Indonesia	25.28	(0.73)	25.48	(0.53)	-0.20	(0.84)	6.09	(0.16)	6.08	(0.10)	0.02	(0.19)	
Israel	37.70	(1.17)	36.95	(0.71)	0.76	(1.34)	12.50	(0.21)	11.65	(0.14)	0.85	(0.23)	
Jordan	33.86	(0.85)	33.68	(0.68)	0.18	(1.07)	9.97	(0.24)	8.90	(0.23)	1.08	(0.31)	
Kyrgyzstan	32.62	(0.55)	31.20	(0.48)	1.42	(0.75)	11.36	(0.14)	11.27	(0.12)	0.09	(0.17)	
Latvia	33.31	(0.72)	32.85	(0.47)	0.46	(0.69)	11.05	(0.09)	11.05	(0.11)	-0.00	(0.13)	
Lithuania	34.08	(0.66)	32.09	(0.34)	1.99	(0.81)	11.41	(0.09)	11.50	(0.07)	-0.09	(0.12)	
Macao-China	30.81	(0.48)	30.47	(0.42)	0.35	(0.61)	7.16	(0.14)	6.82	(0.11)	0.33	(0.17)	
Montenegro	36.99	(0.74)	34.21	(0.45)	2.78	(0.90)	11.51	(0.12)	11.16	(0.11)	0.34	(0.17)	
Romania	31.34	(0.77)	29.36	(0.93)	1.98	(1.17)	12.34	(0.12)	11.24	(0.21)	1.10	(0.25)	
Russian Federation	34.34	(0.62)	33.56	(0.38)	0.79	(0.83)	12.18	(0.07)	12.13	(0.05)	0.05	(0.09)	
Serbia	35.59	(0.78)	34.02	(0.51)	1.56	(0.89)	10.95	(0.09)	10.70	(0.08)	0.25	(0.10)	
Slovenia	34.92	(0.56)	34.95	(0.34)	-0.02	(0.66)	10.89	(0.12)	10.50	(0.10)	0.38	(0.17)	
Chinese Taipei	33.17	(0.36)	33.05	(0.39)	0.12	(0.55)	10.48	(0.10)	9.94	(0.10)	0.54	(0.15)	
Thailand	24.44	(0.34)	24.14	(0.25)	0.30	(0.42)	5.91	(0.12)	5.82	(0.09)	0.08	(0.15)	
Tunisia	23.29	(0.42)	23.42	(0.37)	-0.13	(0.50)	6.25	(0.19)	6.29	(0.13)	-0.05	(0.22)	
Uruguay	30.97	(0.73)	29.09	(0.53)	1.88	(0.86)	8.22	(0.23)	7.49	(0.15)	0.72	(0.26)	

Note: Values that are statistically different are indicated in bold.



Table A1.4 Performance in PISA science, system average, resilient and disadvantaged low achievers

	Performance in PISA Science Scale						
	All students		Disadvantaged low achievers		Resilient students		
	Mean score	S.E	Mean score	S.E	Mean score	S.E	
OECD	Australia	528	(2.2)	414	(3.6)	615	(6.4)
	Austria	511	(3.9)	392	(5.8)	604	(5.5)
	Belgium	512	(2.5)	394	(4.1)	602	(5.0)
	Canada	536	(1.9)	430	(4.0)	619	(6.3)
	Czech Republic	513	(3.5)	402	(5.0)	595	(6.9)
	Denmark	497	(3.1)	391	(4.5)	579	(6.1)
	Finland	564	(2.0)	469	(4.2)	642	(6.1)
	France	497	(3.3)	379	(4.3)	582	(7.1)
	Germany	518	(3.7)	402	(4.7)	603	(6.5)
	Greece	474	(3.2)	368	(4.7)	551	(6.7)
	Hungary	504	(2.6)	402	(3.5)	577	(6.9)
	Iceland	492	(1.7)	386	(4.3)	579	(6.3)
	Ireland	509	(3.2)	402	(4.7)	594	(6.2)
	Italy	476	(2.0)	370	(3.7)	562	(5.0)
	Japan	533	(3.4)	418	(5.0)	619	(6.9)
	Korea	522	(3.4)	422	(5.5)	602	(6.3)
	Luxembourg	487	(1.0)	372	(3.1)	571	(6.1)
	Mexico	410	(2.7)	325	(4.9)	474	(6.9)
	Netherlands	526	(2.6)	413	(4.2)	611	(6.3)
	New Zealand	533	(2.6)	407	(4.2)	626	(6.6)
	Norway	489	(2.7)	387	(4.9)	575	(6.6)
	Poland	498	(2.3)	398	(4.0)	580	(6.1)
	Portugal	475	(3.0)	377	(4.0)	553	(5.7)
	Slovak Republic	489	(2.6)	380	(4.9)	570	(6.3)
	Spain	489	(2.6)	386	(4.0)	570	(5.4)
	Sweden	505	(2.4)	400	(4.1)	586	(6.6)
Switzerland	512	(3.2)	395	(3.6)	599	(6.3)	
Turkey	424	(3.8)	339	(6.2)	487	(6.6)	
United Kingdom	518	(2.2)	399	(4.0)	612	(6.0)	
United States	490	(4.2)	370	(4.5)	583	(7.4)	
OECD average	501	(0.5)	393	(0.8)	584	(1.2)	
Partners	Argentina	392	(6.0)	282	(7.0)	469	(9.0)
	Azerbaijan	383	(2.8)	332	(5.8)	436	(8.7)
	Brazil	391	(2.8)	299	(6.1)	458	(8.2)
	Bulgaria	435	(6.1)	316	(6.1)	529	(7.2)
	Chile	438	(4.4)	340	(5.0)	510	(7.9)
	Colombia	388	(3.4)	302	(6.3)	453	(8.6)
	Croatia	493	(2.4)	400	(4.2)	566	(5.6)
	Estonia	532	(2.5)	439	(4.2)	607	(6.3)
	Hong Kong-China	542	(2.4)	438	(4.6)	628	(5.5)
	Indonesia	393	(5.7)	328	(5.8)	450	(9.4)
	Israel	457	(3.7)	339	(6.1)	558	(7.8)
	Jordan	423	(2.8)	333	(5.3)	495	(7.3)
	Kyrgyzstan	322	(2.9)	243	(8.3)	380	(9.8)
	Latvia	490	(2.9)	397	(4.9)	564	(6.8)
	Lithuania	488	(2.8)	385	(3.5)	569	(6.1)
	Macao-China	511	(1.1)	428	(4.6)	585	(5.9)
	Montenegro	412	(1.1)	329	(4.4)	484	(6.2)
	Romania	418	(4.2)	332	(4.9)	489	(7.4)
	Russian Federation	480	(3.7)	384	(5.2)	557	(7.1)
	Serbia	436	(3.0)	343	(5.2)	511	(6.4)
	Slovenia	519	(1.1)	407	(3.6)	605	(6.8)
	Chinese Taipei	533	(3.6)	424	(3.7)	616	(6.3)
Thailand	421	(2.1)	346	(6.1)	480	(6.8)	
Tunisia	386	(2.9)	307	(6.8)	452	(7.8)	
Uruguay	429	(2.7)	327	(5.0)	505	(7.1)	

Table A1.5 Percentage of resilient students and disadvantaged low achievers above and below the basic level of proficiency

	Proficiency in science											
	Resilient students						Disadvantaged low achievers					
	Below Level 2		From Level 2 to Level 3		From Level 4 to Level 6		Below Level 2		From Level 2 to Level 3		From Level 4 to Level 6	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD												
Australia	0.0	(0.0)	22.5	(1.4)	77.5	(1.4)	34.3	(1.4)	64.7	(1.4)	1.0	(0.3)
Austria	0.0	(0.0)	27.9	(2.4)	72.1	(2.4)	47.3	(3.5)	52.6	(3.5)	0.0	(0.0)
Belgium	0.0	(0.0)	27.0	(2.3)	73.0	(2.3)	47.3	(2.3)	52.5	(2.2)	0.1	(0.1)
Canada	0.0	(0.0)	17.3	(2.1)	82.7	(2.1)	25.8	(1.4)	72.3	(1.4)	1.9	(0.5)
Czech Republic	0.0	(0.0)	35.2	(2.9)	64.8	(2.9)	41.4	(2.5)	58.5	(2.5)	0.0	(0.0)
Denmark	0.0	(0.0)	51.2	(3.0)	48.7	(3.0)	48.7	(2.5)	51.3	(2.5)	0.0	(0.0)
Finland	0.0	(0.0)	6.1	(1.3)	93.9	(1.3)	11.3	(1.4)	81.8	(2.1)	7.0	(1.3)
France	0.0	(0.0)	47.3	(3.7)	52.7	(3.7)	55.3	(2.4)	44.7	(2.4)	0.0	(0.0)
Germany	0.0	(0.0)	28.5	(2.8)	71.5	(2.8)	41.6	(3.0)	58.2	(2.9)	0.0	(0.0)
Greece	0.0	(0.0)	72.6	(2.7)	27.3	(2.7)	61.4	(2.3)	38.5	(2.2)	0.0	(0.0)
Hungary	0.0	(0.0)	48.8	(3.4)	51.2	(3.4)	42.2	(2.2)	57.6	(2.2)	0.0	(0.0)
Iceland	0.0	(0.0)	50.8	(4.1)	49.1	(4.0)	49.3	(2.2)	50.6	(2.2)	0.0	(0.0)
Ireland	0.0	(0.0)	38.1	(2.5)	61.9	(2.5)	40.1	(2.9)	59.6	(2.9)	0.3	(0.2)
Italy	0.0	(0.0)	65.1	(1.7)	34.8	(1.7)	62.5	(1.7)	37.5	(1.7)	0.0	(0.0)
Japan	0.0	(0.0)	18.3	(2.8)	81.7	(2.8)	32.3	(2.6)	66.2	(2.6)	1.5	(0.4)
Korea	0.0	(0.0)	28.3	(1.9)	71.7	(1.9)	28.9	(3.1)	69.9	(3.0)	1.2	(0.4)
Luxembourg	0.0	(0.0)	57.4	(3.4)	42.5	(3.4)	61.5	(1.8)	38.5	(1.8)	0.0	(0.0)
Mexico	14.1	(1.7)	83.8	(1.6)	2.0	(0.6)	93.3	(0.9)	6.7	(0.9)	0.0	(0.0)
Netherlands	0.0	(0.0)	21.3	(3.0)	78.7	(3.0)	36.8	(3.0)	62.9	(3.0)	0.3	(0.2)
New Zealand	0.0	(0.0)	15.3	(2.6)	84.7	(2.6)	37.8	(2.2)	61.5	(2.3)	0.6	(0.4)
Norway	0.0	(0.0)	56.8	(2.8)	43.2	(2.8)	49.2	(2.2)	50.7	(2.2)	0.0	(0.0)
Poland	0.0	(0.0)	49.6	(2.7)	50.4	(2.7)	44.5	(2.2)	55.5	(2.2)	0.0	(0.0)
Portugal	0.0	(0.0)	71.4	(2.7)	28.5	(2.7)	60.8	(2.0)	39.2	(2.0)	0.0	(0.0)
Slovak Republic	0.0	(0.0)	56.8	(3.5)	43.2	(3.5)	54.9	(2.2)	45.0	(2.3)	0.0	(0.0)
Spain	0.0	(0.0)	58.4	(2.1)	41.6	(2.1)	49.6	(1.8)	50.4	(1.8)	0.0	(0.0)
Sweden	0.0	(0.0)	43.6	(3.0)	56.3	(3.0)	42.0	(2.0)	57.9	(2.0)	0.0	(0.0)
Switzerland	0.0	(0.0)	32.7	(2.3)	67.3	(2.3)	45.7	(1.7)	54.3	(1.7)	0.1	(0.1)
Turkey	8.1	(1.4)	87.3	(1.8)	4.6	(1.2)	87.6	(2.0)	12.4	(2.0)	0.0	(0.0)
United Kingdom	0.0	(0.0)	24.2	(2.3)	75.8	(2.3)	42.6	(1.9)	57.2	(1.9)	0.3	(0.2)
United States	0.0	(0.0)	50.3	(3.4)	49.6	(3.5)	62.7	(2.7)	37.3	(2.7)	0.0	(0.0)
OECD average	0.7	(0.1)	43.1	(0.5)	56.1	(0.5)	48.0	(0.4)	51.5	(0.4)	0.5	(0.1)
Partners												
Argentina	20.8	(3.0)	76.2	(3.2)	3.0	(1.2)	96.8	(0.6)	3.2	(0.6)	0.0	(0.0)
Azerbaijan	51.0	(4.2)	48.3	(3.9)	0.7	(0.6)	97.5	(0.8)	2.5	(0.8)	0.0	(0.0)
Brazil	27.5	(4.5)	70.4	(4.3)	2.0	(0.8)	97.2	(0.7)	2.8	(0.7)	0.0	(0.0)
Bulgaria	2.8	(1.1)	79.0	(3.6)	18.2	(3.1)	91.2	(1.4)	8.8	(1.4)	0.0	(0.0)
Chile	4.1	(1.5)	86.0	(3.0)	10.0	(2.6)	85.4	(1.8)	14.6	(1.8)	0.0	(0.0)
Colombia	30.0	(3.9)	68.7	(3.9)	1.3	(0.9)	96.6	(0.9)	3.4	(0.9)	0.0	(0.0)
Croatia	0.0	(0.0)	61.4	(2.3)	38.6	(2.4)	42.5	(2.0)	57.5	(2.0)	0.0	(0.0)
Estonia	0.0	(0.0)	24.8	(3.7)	75.2	(3.7)	20.0	(2.0)	78.8	(2.0)	1.2	(0.6)
Hong Kong-China	0.0	(0.0)	11.6	(2.3)	88.4	(2.3)	23.2	(2.3)	73.8	(2.6)	3.1	(0.9)
Indonesia	30.7	(2.8)	68.1	(2.8)	1.2	(1.3)	96.3	(0.8)	3.7	(0.8)	0.0	(0.0)
Israel	1.4	(0.8)	64.7	(3.6)	33.9	(3.5)	79.6	(2.4)	20.3	(2.5)	0.0	(0.0)
Jordan	7.1	(1.5)	86.5	(2.2)	6.4	(1.6)	87.8	(1.3)	12.2	(1.3)	0.0	(0.0)
Kyrgyzstan	85.2	(2.1)	14.7	(2.1)	0.2	(0.2)	99.8	(0.2)	0.2	(0.2)	0.0	(0.0)
Latvia	0.0	(0.0)	64.0	(3.3)	35.9	(3.4)	43.4	(2.8)	56.4	(2.8)	0.0	(0.0)
Lithuania	0.0	(0.0)	59.1	(3.2)	40.9	(3.2)	55.4	(2.2)	44.6	(2.1)	0.0	(0.0)
Macao-China	0.0	(0.0)	44.6	(3.1)	55.4	(3.1)	24.3	(2.3)	75.3	(2.3)	0.0	(0.0)
Montenegro	11.3	(1.6)	84.7	(2.2)	4.0	(1.3)	92.7	(1.1)	7.3	(1.1)	0.0	(0.0)
Romania	8.6	(2.2)	87.4	(2.2)	4.0	(1.6)	90.3	(1.7)	9.7	(1.7)	0.0	(0.0)
Russian Federation	0.0	(0.0)	68.7	(3.1)	31.2	(3.1)	52.3	(2.0)	47.6	(2.0)	0.0	(0.0)
Serbia	2.7	(0.8)	87.1	(1.9)	10.3	(1.9)	82.9	(1.8)	17.1	(1.8)	0.0	(0.0)
Slovenia	0.0	(0.0)	29.5	(2.9)	70.5	(2.9)	38.9	(2.1)	60.8	(2.0)	0.3	(0.3)
Chinese Taipei	0.0	(0.0)	17.4	(1.9)	82.6	(1.9)	31.5	(2.3)	67.4	(2.2)	1.1	(0.5)
Thailand	9.6	(1.6)	87.8	(1.7)	2.6	(0.9)	85.8	(1.5)	14.2	(1.5)	0.0	(0.0)
Tunisia	31.6	(2.4)	67.3	(2.5)	1.1	(0.6)	96.7	(0.9)	3.3	(0.9)	0.0	(0.0)
Uruguay	4.1	(1.5)	88.6	(2.1)	7.3	(1.6)	87.5	(1.8)	12.5	(1.8)	0.0	(0.0)



[Part 1/2]
Table A1.6 Overlap of student resilience by subject

	Students who are resilient in science							
	Resilient in science, mathematics and reading		Resilient in science and mathematics		Resilient in science and reading		Resilient only in science	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD								
Australia	54.4	(2.3)	16.4	(2.8)	14.9	(1.8)	14.2	(2.0)
Austria	57.1	(3.9)	17.1	(3.4)	14.9	(3.1)	10.9	(2.2)
Belgium	59.0	(3.5)	16.5	(2.3)	13.2	(2.5)	11.2	(2.2)
Canada	49.4	(2.4)	20.7	(2.6)	14.5	(2.0)	15.4	(2.1)
Czech Republic	52.4	(6.0)	18.1	(3.5)	16.4	(3.4)	13.1	(3.4)
Denmark	56.0	(3.5)	17.7	(3.0)	15.3	(3.2)	11.0	(3.0)
Finland	47.0	(3.2)	20.7	(3.0)	17.6	(2.3)	14.7	(2.8)
France	46.5	(4.7)	22.8	(4.1)	16.2	(3.4)	14.5	(2.9)
Germany	53.8	(3.5)	15.9	(3.3)	17.1	(3.1)	13.3	(3.2)
Greece	45.8	(6.0)	16.4	(3.4)	21.7	(3.9)	16.2	(3.9)
Hungary	47.7	(4.7)	20.3	(4.1)	16.4	(3.7)	15.6	(3.2)
Iceland	56.8	(4.1)	14.1	(3.7)	13.0	(3.4)	16.1	(2.9)
Ireland	53.0	(4.5)	15.4	(2.8)	16.4	(2.7)	15.2	(3.3)
Italy	50.7	(2.7)	21.2	(1.9)	13.4	(2.3)	14.7	(2.0)
Japan	48.0	(3.5)	15.9	(3.5)	18.7	(2.5)	17.5	(2.6)
Korea	53.4	(4.1)	15.3	(2.7)	18.3	(3.7)	13.1	(2.1)
Luxembourg	52.7	(5.2)	19.5	(4.6)	15.4	(3.7)	12.4	(2.9)
Mexico	44.1	(3.4)	21.9	(3.2)	14.8	(2.4)	19.2	(3.5)
Netherlands	59.3	(5.1)	16.8	(3.6)	13.4	(3.3)	10.5	(3.4)
New Zealand	53.4	(3.7)	21.7	(3.7)	13.9	(2.6)	11.0	(2.4)
Norway	53.2	(4.9)	20.0	(3.6)	13.6	(3.9)	13.2	(3.8)
Poland	53.4	(3.0)	18.3	(2.8)	14.0	(2.8)	14.3	(2.5)
Portugal	52.8	(3.4)	21.2	(2.8)	12.6	(2.6)	13.5	(2.8)
Slovak Republic	53.4	(3.8)	16.6	(3.2)	16.9	(2.8)	13.1	(2.9)
Spain	53.2	(3.0)	19.7	(3.0)	14.7	(1.9)	12.4	(2.1)
Sweden	51.5	(4.7)	16.8	(3.0)	16.0	(2.7)	15.6	(2.9)
Switzerland	56.4	(3.4)	16.7	(2.9)	15.1	(3.4)	11.8	(2.3)
Turkey	44.5	(3.7)	21.0	(3.6)	16.6	(2.9)	18.0	(4.0)
United Kingdom	54.4	(3.3)	17.3	(2.4)	14.0	(2.3)	14.3	(2.3)
United States	m	m	m	m	m	m	m	m
OECD average	52.2	(0.7)	18.3	(0.6)	15.5	(0.6)	14.0	(0.5)
Partners								
Argentina	32.0	(4.2)	21.3	(5.5)	21.3	(4.0)	25.4	(5.2)
Azerbaijan	39.5	(5.4)	28.0	(4.1)	13.6	(3.0)	18.9	(4.5)
Brazil	39.4	(3.7)	19.6	(2.9)	14.9	(2.8)	26.1	(3.8)
Bulgaria	46.9	(4.2)	17.4	(3.5)	15.3	(3.0)	20.5	(4.6)
Chile	41.3	(4.6)	18.1	(3.0)	16.4	(2.9)	24.2	(4.4)
Colombia	26.7	(4.9)	18.2	(4.3)	20.3	(3.5)	34.7	(4.6)
Croatia	53.1	(4.2)	19.4	(2.9)	14.1	(2.9)	13.4	(2.7)
Estonia	52.8	(3.7)	14.9	(2.5)	15.5	(2.9)	16.9	(3.3)
Hong Kong-China	55.9	(3.9)	20.1	(2.3)	12.6	(2.2)	11.5	(2.8)
Indonesia	47.2	(5.3)	16.3	(3.2)	12.2	(2.4)	24.3	(4.4)
Israel	49.2	(4.9)	19.2	(3.5)	14.6	(3.5)	16.9	(3.7)
Jordan	37.5	(3.8)	19.2	(2.6)	22.9	(3.3)	20.4	(2.7)
Kyrgyzstan	29.5	(3.4)	20.2	(3.5)	17.9	(3.1)	32.3	(3.2)
Latvia	47.0	(5.0)	19.1	(4.2)	18.2	(3.3)	15.7	(3.1)
Lithuania	51.7	(3.5)	18.1	(3.2)	17.1	(3.0)	13.1	(3.3)
Macao-China	48.4	(4.4)	22.8	(3.3)	14.7	(2.9)	14.2	(2.9)
Montenegro	55.1	(3.2)	12.7	(2.7)	19.5	(3.0)	12.7	(2.7)
Romania	53.0	(6.1)	18.3	(4.3)	13.0	(3.4)	15.7	(4.0)
Russian Federation	41.4	(3.4)	20.5	(3.4)	17.8	(3.5)	20.3	(3.0)
Serbia	48.4	(3.9)	20.3	(3.0)	15.4	(2.9)	15.9	(3.0)
Slovenia	52.2	(4.8)	16.8	(3.5)	18.8	(4.2)	12.3	(2.6)
Chinese Taipei	50.9	(3.3)	22.2	(3.0)	12.7	(1.8)	14.1	(1.8)
Thailand	40.9	(3.8)	19.6	(3.1)	17.1	(2.6)	22.4	(3.0)
Tunisia	35.0	(3.6)	15.2	(3.4)	22.3	(4.9)	27.5	(2.9)
Uruguay	34.3	(4.1)	19.2	(4.7)	21.1	(3.5)	25.4	(3.5)

Table A1.8 Percentage of native students among disadvantaged students and resilient students

	Proportion of native students among disadvantaged students		Percentage of native students among resilient, low achievers and all disadvantaged students											
			Science assessment				Reading assessment				Mathematics assessment			
			Proportion of native students among resilient students		Proportion of native students among low achievers		Proportion of native students among resilient students		Proportion of native students among low achievers		Proportion of native students among resilient students		Proportion of native students among low achievers	
			%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD														
Australia	77.7	(1.7)	78.4	(2.2)	77.4	(1.8)	75.8	(2.2)	78.7	(1.7)	74.1	(2.5)	78.8	(1.7)
Austria	77.2	(2.6)	93.3	(1.3)	67.8	(3.7)	87.3	(1.3)	70.9	(3.9)	90.2	(1.4)	69.5	(3.7)
Belgium	78.2	(1.8)	92.9	(1.1)	71.7	(2.4)	91.4	(1.6)	72.4	(2.3)	91.6	(1.3)	71.7	(2.5)
Canada	78.0	(1.7)	80.0	(1.9)	76.4	(2.3)	78.7	(1.9)	77.9	(2.0)	78.8	(1.8)	77.5	(2.2)
Czech Republic	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Denmark	85.3	(1.6)	93.7	(1.3)	81.2	(2.1)	91.1	(1.5)	81.2	(2.2)	92.6	(1.6)	81.9	(1.9)
Finland	c	c	c	c	c	c	c	c	c	c	c	c	c	c
France	77.7	(2.1)	81.6	(2.7)	75.7	(2.7)	79.5	(2.5)	76.5	(2.7)	81.9	(2.9)	75.1	(2.7)
Germany	75.6	(1.8)	86.9	(1.8)	69.0	(2.6)	85.2	(1.6)	70.9	(2.6)	86.0	(1.7)	70.8	(2.3)
Greece	88.0	(1.5)	91.9	(1.9)	86.6	(2.3)	89.9	(1.7)	86.8	(2.0)	90.7	(1.5)	86.6	(1.8)
Hungary	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Iceland	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Ireland	94.7	(0.9)	95.1	(1.2)	94.3	(1.2)	96.4	(0.9)	93.9	(1.3)	94.6	(1.1)	94.4	(1.2)
Italy	94.4	(0.5)	96.1	(0.6)	93.3	(0.6)	96.2	(0.6)	93.5	(0.7)	96.1	(0.6)	93.6	(0.6)
Japan	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Korea	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Luxembourg	37.3	(1.3)	63.0	(2.5)	27.3	(1.5)	57.1	(2.3)	30.2	(1.5)	53.0	(2.7)	31.9	(1.6)
Mexico	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Netherlands	80.2	(1.8)	91.2	(1.7)	74.3	(2.4)	88.1	(2.0)	75.3	(2.4)	89.1	(2.1)	74.7	(2.4)
New Zealand	78.6	(1.7)	80.6	(1.8)	76.0	(2.4)	80.2	(2.1)	77.3	(2.3)	80.9	(1.8)	77.1	(2.4)
Norway	89.2	(1.3)	92.9	(1.4)	86.3	(1.8)	92.1	(1.6)	86.5	(1.6)	91.5	(1.7)	87.9	(1.6)
Poland	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Portugal	95.1	(1.5)	99.3	(0.4)	93.0	(2.3)	98.4	(0.6)	93.0	(2.2)	98.3	(0.7)	93.2	(2.2)
Slovak Republic	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Spain	91.9	(1.1)	96.7	(0.9)	88.9	(1.5)	95.3	(0.9)	89.6	(1.6)	96.3	(0.8)	89.4	(1.4)
Sweden	84.3	(1.4)	93.7	(1.1)	79.0	(2.1)	92.2	(1.2)	81.0	(1.8)	91.1	(1.6)	80.2	(1.8)
Switzerland	63.5	(1.4)	83.7	(1.6)	52.1	(1.8)	78.2	(1.7)	55.9	(1.9)	81.6	(1.7)	53.9	(1.8)
Turkey	c	c	c	c	c	c	100.0	(0.0)	99.4	(0.2)	99.4	(0.3)	99.5	(0.2)
United Kingdom	89.3	(1.7)	91.3	(1.5)	88.4	(2.1)	91.0	(1.5)	88.7	(2.1)	93.0	(1.2)	87.8	(2.1)
United States	74.8	(2.4)	82.7	(2.9)	71.7	(2.8)	v	v	v	v	79.0	(3.0)	72.8	(2.7)
OECD average	80.5	(0.4)	88.3	(0.4)	76.5	(0.5)	87.8	(0.4)	80.0	(0.5)	87.7	(0.4)	79.5	(0.5)
Partners														
Argentina	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Azerbaijan	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Brazil	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Bulgaria	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Chile	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Colombia	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Croatia	82.9	(1.3)	85.8	(1.8)	81.8	(1.7)	84.6	(1.6)	82.3	(1.7)	84.2	(1.6)	81.9	(1.7)
Estonia	87.8	(1.1)	94.3	(1.0)	83.2	(1.5)	94.3	(1.4)	83.2	(1.7)	91.7	(1.7)	85.3	(1.4)
Hong Kong-China	36.9	(1.5)	37.2	(2.4)	36.4	(2.0)	37.3	(1.9)	36.6	(2.0)	36.5	(2.2)	36.1	(1.9)
Indonesia	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Israel	71.5	(1.9)	69.5	(3.3)	72.0	(1.9)	70.9	(3.0)	71.3	(2.1)	69.1	(3.6)	72.5	(2.0)
Jordan	87.7	(1.1)	81.8	(1.8)	90.5	(1.1)	81.7	(1.6)	90.9	(1.2)	82.2	(1.7)	89.8	(1.2)
Kyrgyzstan	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Latvia	94.1	(0.8)	94.7	(1.0)	94.2	(0.9)	95.3	(1.1)	93.7	(1.0)	93.9	(1.1)	93.9	(0.9)
Lithuania	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Macao-China	18.0	(1.0)	15.1	(1.3)	20.5	(1.5)	15.8	(1.5)	19.4	(1.4)	15.3	(1.2)	20.5	(1.4)
Montenegro	93.9	(0.7)	90.5	(1.4)	95.4	(0.8)	90.5	(1.3)	95.4	(0.8)	90.8	(1.4)	95.1	(0.9)
Romania	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Russian Federation	90.2	(1.1)	90.8	(1.5)	89.2	(1.4)	89.7	(1.8)	90.2	(1.2)	91.7	(1.1)	89.1	(1.4)
Serbia	89.8	(0.9)	87.6	(1.5)	91.2	(1.0)	87.0	(1.5)	90.8	(1.1)	87.9	(1.5)	91.2	(1.1)
Slovenia	81.1	(1.1)	87.0	(1.9)	78.0	(1.4)	82.5	(2.1)	80.8	(1.3)	83.1	(2.3)	79.9	(1.4)
Chinese Taipei	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Thailand	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Tunisia	c	c	c	c	c	c	c	c	c	c	c	c	c	c
Uruguay	c	c	c	c	c	c	c	c	c	c	c	c	c	c



Table A1.9 Percentage of students who speak the test language at home among disadvantaged students and resilient students

	Percentage of students who speak at home the language of test among resilient, low achievers and all disadvantaged students															
	Proportion of students who speak at home the test language among disadvantaged students		Science assessment						Reading assessment				Mathematics assessment			
			Proportion of students who speak at home the test language among resilient students		Proportion of students who speak at home the test language among low achievers		Proportion of students who speak at home the test language among resilient students		Proportion of students who speak at home the test language among low achievers		Proportion of students who speak at home the test language among resilient students		Proportion of students who speak at home the test language among low achievers			
%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.			
OECD																
Australia	89.3	(1.1)	90.6	(1.6)	88.4	(1.1)	88.9	(1.6)	89.5	(1.1)	87.5	(1.9)	89.9	(1.0)		
Austria	81.6	(2.5)	95.2	(1.0)	73.6	(3.9)	89.2	(1.2)	76.5	(4.2)	92.4	(1.2)	75.0	(3.7)		
Belgium	73.6	(1.5)	71.5	(2.2)	74.0	(2.0)	70.6	(2.1)	74.5	(2.0)	69.9	(2.2)	75.0	(2.0)		
Canada	85.9	(1.2)	88.9	(1.3)	83.7	(1.6)	89.3	(1.3)	84.2	(1.4)	87.3	(1.4)	85.0	(1.5)		
Czech Republic	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Denmark	91.4	(1.2)	97.0	(1.0)	88.6	(1.5)	96.5	(1.0)	88.0	(1.7)	96.1	(1.1)	89.1	(1.5)		
Finland	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
France	88.1	(1.3)	92.6	(1.5)	86.5	(1.7)	91.2	(1.5)	86.8	(1.6)	92.6	(1.6)	85.8	(1.7)		
Germany	84.8	(1.5)	95.2	(1.2)	78.7	(2.1)	94.0	(1.2)	80.3	(2.0)	94.0	(1.6)	80.4	(1.9)		
Greece	93.3	(1.3)	98.5	(0.8)	90.7	(1.9)	96.5	(1.0)	91.5	(1.8)	97.7	(0.8)	91.8	(1.6)		
Hungary	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Iceland	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Ireland	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Italy	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Japan	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Korea	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Luxembourg	5.2	(0.6)	2.6	(0.8)	5.5	(0.8)	4.1	(1.1)	5.9	(0.8)	5.8	(1.1)	5.3	(0.8)		
Mexico	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Netherlands	90.2	(1.4)	96.4	(0.9)	87.3	(2.1)	93.7	(1.4)	88.1	(2.2)	94.5	(1.4)	87.5	(2.1)		
New Zealand	89.5	(1.1)	91.4	(1.3)	87.7	(1.5)	91.1	(1.3)	88.0	(1.5)	90.7	(1.3)	88.9	(1.4)		
Norway	91.2	(0.9)	94.1	(1.2)	89.1	(1.2)	93.9	(1.2)	89.0	(1.1)	93.7	(1.2)	89.8	(1.1)		
Poland	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Portugal	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Slovak Republic	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Spain	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Sweden	88.0	(1.1)	95.3	(0.9)	83.6	(1.5)	93.7	(1.1)	85.3	(1.4)	93.2	(1.2)	84.8	(1.4)		
Switzerland	71.7	(1.4)	88.4	(1.5)	61.6	(1.9)	86.1	(1.6)	63.7	(1.7)	86.2	(1.5)	63.5	(1.8)		
Turkey	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
United Kingdom	93.2	(1.3)	96.2	(1.0)	92.0	(1.6)	94.7	(1.4)	92.2	(1.6)	96.7	(0.8)	91.8	(1.7)		
United States	79.5	(2.1)	87.8	(2.1)	76.1	(2.7)	v	v	v	v	84.8	(2.4)	77.0	(2.6)		
OECD average	81.0	(0.3)	86.4	(0.3)	78.0	(0.5)	84.9	(0.4)	78.9	(0.5)	85.2	(0.4)	78.8	(0.5)		
Partners																
Argentina	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Azerbaijan	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Brazil	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Bulgaria	78.1	(2.3)	91.0	(1.8)	72.1	(2.9)	89.8	(2.2)	73.1	(2.7)	86.8	(2.2)	74.3	(2.6)		
Chile	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Colombia	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Croatia	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Estonia	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Hong Kong-China	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Indonesia	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Israel	83.6	(1.7)	81.2	(2.4)	84.1	(1.7)	84.7	(2.2)	82.9	(2.0)	81.1	(2.7)	84.3	(1.6)		
Jordan	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Kyrgyzstan	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Latvia	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Lithuania	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Macao-China	v	v	v	v	v	v	v	v	v	v	v	v	v	v		
Montenegro	48.5	(1.4)	53.5	(2.4)	45.4	(1.9)	53.9	(2.4)	44.7	(1.9)	56.5	(2.3)	45.0	(1.9)		
Romania	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Russian Federation	87.5	(2.2)	91.5	(2.0)	85.1	(2.7)	93.1	(1.9)	83.9	(2.8)	87.5	(2.2)	86.5	(2.6)		
Serbia	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Slovenia	88.5	(0.9)	93.9	(1.4)	85.7	(1.2)	91.0	(1.6)	87.3	(1.1)	91.3	(1.8)	86.7	(1.1)		
Chinese Taipei	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Thailand	c	c	c	c	c	c	c	c	c	c	c	c	c	c		
Tunisia	98.3	(0.3)	98.0	(0.7)	98.9	(0.3)	97.8	(0.6)	98.6	(0.4)	97.7	(0.8)	98.7	(0.4)		
Uruguay	c	c	c	c	c	c	c	c	c	c	c	c	c	c		



ANNEX A2: A PROFILE OF STUDENT RESILIENCE

Table A2.1 Correlations among key indices

	ESCS	Performance on the science scale	General interest in science	Instrumental motivation to learn science	Science self-efficacy	Science self-concept	Participation in science related activities	School preparation for science-related careers	Students' information on science-related careers
ESCS	1								
Performance on the science scale	0.45	1							
General interest in science	-0.24	-0.02	1						
Instrumental motivation to learn science	-0.28	-0.12	0.49	1					
Science self-efficacy	0.12	0.24	0.35	0.22	1				
Science self-concept	-0.19	-0.06	0.48	0.52	0.37	1			
Participation in science related activities	-0.26	-0.13	0.53	0.44	0.31	0.46	1		
School preparation for science related careers	-0.12	-0.05	0.36	0.44	0.21	0.37	0.31	1	
Students' information on science-related careers	0.03	-0.05	0.27	0.30	0.27	0.33	0.31	0.33	1

Note: Correlations estimated on pooled sample of all disadvantaged students in all 55 countries included in the analysis.



Table A2.1b Interest in science (underlying percentages), by student group

	Interest in science						
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers		
	Mean	S.E.	Mean	S.E.	Dif	S.E.	
OECD	Australia	0.11	(0.04)	-0.69	(0.04)	0.79	(0.06)
	Austria	0.24	(0.06)	-0.27	(0.04)	0.51	(0.07)
	Belgium	0.27	(0.05)	-0.37	(0.05)	0.65	(0.07)
	Canada	0.31	(0.05)	-0.27	(0.03)	0.58	(0.06)
	Czech Republic	0.11	(0.05)	-0.20	(0.05)	0.31	(0.07)
	Denmark	0.12	(0.06)	-0.58	(0.06)	0.70	(0.09)
	Finland	0.04	(0.05)	-0.70	(0.05)	0.74	(0.07)
	France	0.52	(0.06)	-0.24	(0.04)	0.76	(0.07)
	Germany	0.42	(0.05)	-0.06	(0.05)	0.48	(0.07)
	Greece	0.32	(0.06)	-0.20	(0.04)	0.52	(0.08)
	Hungary	0.05	(0.06)	-0.24	(0.04)	0.28	(0.07)
	Iceland	0.18	(0.06)	-0.70	(0.06)	0.88	(0.08)
	Ireland	0.11	(0.06)	-0.74	(0.05)	0.85	(0.08)
	Italy	0.29	(0.03)	-0.05	(0.03)	0.35	(0.04)
	Japan	0.15	(0.05)	-0.64	(0.05)	0.79	(0.06)
	Korea	0.06	(0.04)	-0.74	(0.04)	0.79	(0.06)
	Luxembourg	0.33	(0.09)	-0.14	(0.04)	0.47	(0.09)
	Mexico	0.99	(0.04)	0.73	(0.05)	0.26	(0.06)
	Netherlands	-0.13	(0.06)	-0.65	(0.06)	0.52	(0.09)
	New Zealand	0.15	(0.07)	-0.42	(0.06)	0.57	(0.09)
	Norway	0.24	(0.07)	-0.57	(0.07)	0.80	(0.09)
	Poland	0.21	(0.04)	-0.10	(0.03)	0.32	(0.05)
	Portugal	0.38	(0.05)	-0.07	(0.04)	0.45	(0.07)
	Slovak Republic	0.06	(0.05)	-0.40	(0.06)	0.46	(0.08)
	Spain	0.02	(0.05)	-0.59	(0.04)	0.61	(0.06)
	Sweden	0.04	(0.10)	-0.61	(0.06)	0.65	(0.10)
Switzerland	0.24	(0.05)	-0.39	(0.04)	0.63	(0.06)	
Turkey	0.49	(0.06)	-0.04	(0.06)	0.52	(0.08)	
United Kingdom	0.11	(0.06)	-0.32	(0.04)	0.43	(0.07)	
United States	0.27	(0.05)	-0.11	(0.09)	0.38	(0.10)	
OECD average	0.22	(0.01)	-0.35	(0.01)	0.57	(0.01)	
Partners	Argentina	0.34	(0.07)	0.24	(0.06)	0.10	(0.10)
	Azerbaijan	0.62	(0.07)	0.34	(0.07)	0.28	(0.09)
	Brazil	0.51	(0.07)	0.53	(0.06)	-0.02	(0.09)
	Bulgaria	0.30	(0.09)	0.02	(0.07)	0.28	(0.12)
	Chile	0.48	(0.09)	0.37	(0.05)	0.12	(0.09)
	Colombia	1.26	(0.09)	1.28	(0.06)	-0.02	(0.09)
	Croatia	0.37	(0.04)	-0.07	(0.04)	0.44	(0.06)
	Estonia	0.25	(0.07)	-0.03	(0.04)	0.29	(0.07)
	Hong Kong-China	0.46	(0.04)	-0.19	(0.06)	0.65	(0.07)
	Indonesia	0.61	(0.06)	0.38	(0.04)	0.23	(0.07)
	Israel	0.21	(0.10)	-0.36	(0.08)	0.57	(0.14)
	Jordan	0.85	(0.07)	0.38	(0.06)	0.47	(0.09)
	Kyrgyzstan	0.90	(0.06)	0.95	(0.05)	-0.05	(0.08)
	Latvia	0.15	(0.05)	0.07	(0.05)	0.08	(0.07)
	Lithuania	0.48	(0.05)	0.18	(0.03)	0.30	(0.06)
	Macao-China	0.32	(0.05)	-0.14	(0.05)	0.46	(0.07)
	Montenegro	0.61	(0.06)	0.21	(0.06)	0.40	(0.08)
	Romania	0.52	(0.08)	0.23	(0.06)	0.30	(0.10)
	Russian Federation	0.37	(0.05)	0.19	(0.05)	0.17	(0.06)
	Serbia	0.38	(0.05)	0.16	(0.05)	0.23	(0.06)
	Slovenia	0.22	(0.06)	-0.23	(0.04)	0.45	(0.07)
	Chinese Taipei	0.37	(0.04)	-0.36	(0.04)	0.73	(0.05)
Thailand	1.02	(0.04)	0.63	(0.04)	0.39	(0.05)	
Tunisia	0.94	(0.07)	0.66	(0.04)	0.29	(0.08)	
Uruguay	0.39	(0.07)	0.24	(0.07)	0.15	(0.09)	

Note: Values that are statistically different are indicated in bold.

Table A2.1c Interest in science (underlying percentages), by student group

	Increased likelihood of being resilient associated with one unit on the PISA index of interest in science learning					
	Ratio	S.E.	After accounting for ESCS, gender, immigrant background, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant background, grade, using test language	
			Ratio	S.E.	Ratio	S.E.
OECD	1.83	(0.06)	1.89	(0.06)	1.92	(0.06)
Australia	1.79	(0.12)	1.98	(0.14)	1.93	(0.15)
Austria	1.65	(0.07)	1.99	(0.09)	1.88	(0.10)
Belgium	1.59	(0.07)	1.66	(0.08)	1.67	(0.08)
Canada	1.43	(0.10)	1.51	(0.11)	1.56	(0.12)
Czech Republic	1.72	(0.08)	1.95	(0.08)	1.97	(0.09)
Denmark	2.14	(0.08)	2.21	(0.09)	2.21	(0.09)
Finland	1.87	(0.07)	2.15	(0.11)	2.09	(0.12)
France	1.61	(0.08)	1.63	(0.09)	1.72	(0.12)
Germany	1.60	(0.10)	1.63	(0.10)	1.61	(0.11)
Greece	1.41	(0.10)	1.56	(0.12)	1.54	(0.14)
Hungary	1.72	(0.07)	1.73	(0.08)	1.73	(0.08)
Iceland	1.87	(0.09)	1.98	(0.10)	2.03	(0.11)
Ireland	1.55	(0.06)	1.52	(0.07)	1.40	(0.07)
Italy	1.92	(0.08)	1.91	(0.08)	1.81	(0.09)
Japan	2.47	(0.11)	2.45	(0.11)	2.31	(0.11)
Korea	1.47	(0.10)	1.67	(0.13)	1.66	(0.14)
Luxembourg	1.33	(0.06)	1.33	(0.06)	1.35	(0.06)
Mexico	1.54	(0.09)	1.88	(0.10)	1.83	(0.12)
Netherlands	1.59	(0.09)	1.72	(0.10)	1.75	(0.10)
New Zealand	1.63	(0.06)	1.65	(0.07)	1.64	(0.07)
Norway	1.66	(0.11)	1.67	(0.12)	1.67	(0.12)
Poland	1.67	(0.08)	1.74	(0.12)	1.81	(0.12)
Portugal	1.71	(0.10)	1.67	(0.11)	1.65	(0.11)
Slovak Republic	1.79	(0.08)	1.70	(0.09)	1.75	(0.09)
Spain	1.64	(0.14)	1.83	(0.17)	1.83	(0.17)
Sweden	1.88	(0.10)	2.22	(0.11)	2.10	(0.12)
Switzerland	1.55	(0.07)	1.47	(0.08)	1.47	(0.08)
Turkey	1.40	(0.08)	1.41	(0.08)	1.42	(0.08)
United Kingdom	1.34	(0.07)	1.48	(0.07)	1.51	(0.07)
United States	1.66	(0.07)	1.75	(0.02)	1.74	(0.07)
OECD average	1.66	(0.07)	1.75	(0.02)	1.74	(0.07)
Partners	1.10	(0.09)	1.24	(0.10)	1.26	(0.11)
Argentina	1.19	(0.07)	1.19	(0.07)	1.19	(0.07)
Azerbaijan	0.99	(0.07)	1.03	(0.07)	1.04	(0.07)
Brazil	1.25	(0.10)	1.32	(0.11)	1.43	(0.12)
Bulgaria	1.14	(0.09)	1.21	(0.09)	1.27	(0.10)
Chile	0.99	(0.10)	1.06	(0.12)	1.06	(0.13)
Colombia	1.66	(0.09)	1.73	(0.09)	1.79	(0.10)
Croatia	1.52	(0.13)	1.61	(0.16)	1.61	(0.16)
Estonia	1.76	(0.08)	1.96	(0.08)	1.97	(0.09)
Hong Kong-China	1.45	(0.14)	1.50	(0.14)	1.50	(0.14)
Indonesia	1.31	(0.07)	1.32	(0.07)	1.41	(0.08)
Israel	1.43	(0.08)	1.43	(0.09)	1.44	(0.10)
Jordan	0.97	(0.10)	0.96	(0.11)	1.01	(0.11)
Kyrgyzstan	1.15	(0.14)	1.14	(0.17)	1.19	(0.18)
Latvia	1.68	(0.12)	1.76	(0.12)	1.78	(0.13)
Lithuania	1.85	(0.10)	1.88	(0.12)	1.89	(0.11)
Macao-China	1.39	(0.09)	1.44	(0.10)	1.52	(0.10)
Montenegro	1.36	(0.10)	1.37	(0.11)	1.37	(0.12)
Romania	1.27	(0.10)	1.37	(0.11)	1.39	(0.12)
Russian Federation	1.25	(0.07)	1.25	(0.07)	1.28	(0.08)
Serbia	1.54	(0.09)	1.49	(0.09)	1.45	(0.11)
Slovenia	1.85	(0.06)	1.83	(0.06)	1.84	(0.07)
Chinese Taipei	1.63	(0.09)	1.55	(0.10)	1.58	(0.10)
Thailand	1.38	(0.10)	1.28	(0.11)	1.30	(0.11)
Tunisia	1.16	(0.09)	1.22	(0.11)	1.23	(0.11)
Uruguay						

Note: Values that are statistically different are indicated in bold.



Table A2.2a ^[Part 1/2] Instrumental interest in science (underlying percentages), by student group

		Percentage of students agreeing or strongly agreeing with the following statements											
		Making an effort in my science is worth it because this will help me in the work I want to do later on				What I learn in my science is important for me because I need this for what I want to study later on				I study science because I know it is useful for me			
		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)	
		%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD	Australia	77.4	(1.9)	52.1	(1.6)	64.2	(2.4)	39.6	(1.7)	81.7	(2.0)	51.4	(1.6)
	Austria	49.9	(3.8)	47.6	(3.0)	39.7	(3.3)	34.6	(2.6)	58.2	(4.4)	50.8	(2.7)
	Belgium	58.9	(2.6)	52.9	(1.9)	52.8	(2.5)	46.1	(1.9)	60.2	(2.5)	48.5	(2.4)
	Canada	76.2	(2.3)	65.3	(1.6)	66.1	(2.2)	54.5	(2.0)	80.7	(2.1)	62.7	(1.7)
	Czech Republic	49.4	(4.1)	54.0	(2.5)	54.9	(4.0)	51.7	(2.7)	70.2	(3.9)	58.1	(2.8)
	Denmark	62.7	(3.4)	61.6	(2.5)	63.9	(3.2)	54.4	(2.3)	72.4	(3.1)	56.3	(2.5)
	Finland	58.9	(2.9)	39.2	(2.1)	50.9	(3.5)	28.2	(2.0)	73.9	(3.3)	44.3	(2.4)
	France	64.8	(4.1)	51.2	(2.2)	57.2	(3.8)	45.0	(2.5)	76.6	(3.2)	51.3	(2.2)
	Germany	60.2	(3.3)	60.4	(2.1)	49.2	(4.1)	46.8	(2.2)	74.3	(3.9)	59.0	(2.4)
	Greece	65.1	(3.1)	66.4	(2.2)	59.6	(3.4)	59.4	(2.2)	73.7	(4.0)	61.9	(2.1)
	Hungary	66.0	(3.3)	73.0	(2.0)	50.2	(3.8)	61.7	(2.4)	61.5	(3.5)	66.4	(2.1)
	Iceland	67.2	(3.4)	47.8	(2.3)	69.3	(3.2)	46.7	(2.3)	73.8	(3.0)	47.2	(2.2)
	Ireland	68.8	(3.3)	50.9	(2.6)	55.3	(3.5)	38.4	(2.7)	80.7	(2.5)	51.6	(2.2)
	Italy	65.1	(2.2)	60.7	(1.5)	61.0	(2.1)	61.9	(1.5)	80.2	(1.9)	67.9	(1.7)
	Japan	53.0	(3.1)	34.5	(2.1)	48.7	(2.8)	28.7	(2.0)	51.9	(2.7)	27.1	(1.8)
	Korea	66.4	(2.9)	49.3	(2.1)	50.2	(3.1)	39.3	(2.0)	66.6	(2.9)	45.2	(2.1)
	Luxembourg	52.8	(4.1)	57.9	(2.2)	47.5	(4.2)	49.1	(2.2)	60.6	(3.9)	55.1	(1.9)
	Mexico	86.7	(2.0)	91.2	(1.2)	83.7	(1.6)	88.1	(1.4)	89.7	(1.1)	86.5	(1.5)
	Netherlands	58.2	(3.2)	50.4	(2.7)	50.5	(4.0)	43.0	(2.4)	69.9	(3.5)	50.6	(2.6)
	New Zealand	77.1	(3.5)	63.3	(2.1)	61.9	(3.7)	49.3	(2.4)	81.6	(2.8)	57.1	(2.1)
	Norway	61.5	(4.0)	49.4	(2.5)	62.2	(3.2)	42.7	(2.5)	68.1	(2.7)	47.6	(2.3)
	Poland	69.5	(2.6)	74.8	(1.6)	74.9	(2.7)	74.3	(1.6)	76.7	(2.7)	72.5	(1.9)
	Portugal	82.2	(3.0)	64.2	(2.4)	83.0	(3.4)	67.9	(2.3)	89.3	(2.2)	75.0	(2.4)
	Slovak Republic	52.3	(3.5)	58.6	(2.6)	44.0	(3.7)	43.8	(2.8)	65.7	(3.3)	56.6	(2.2)
	Spain	69.9	(2.2)	59.6	(1.7)	59.2	(3.0)	45.3	(1.9)	72.6	(2.5)	53.8	(1.8)
	Sweden	67.8	(3.6)	49.6	(2.4)	56.9	(3.5)	44.8	(2.4)	69.1	(3.3)	48.0	(2.5)
	Switzerland	58.6	(2.8)	47.9	(2.0)	49.3	(2.7)	39.0	(1.7)	67.4	(3.0)	47.5	(1.7)
	Turkey	87.7	(2.4)	78.6	(2.2)	86.0	(2.5)	76.0	(2.3)	82.7	(2.7)	67.7	(2.5)
United Kingdom	72.5	(3.1)	65.0	(1.7)	54.3	(3.5)	50.8	(1.9)	78.6	(2.6)	65.4	(1.8)	
United States	81.4	(2.2)	77.3	(2.2)	72.7	(3.5)	69.2	(2.3)	83.8	(2.5)	70.6	(1.4)	
OECD average	66.3	(0.6)	58.5	(0.4)	59.3	(0.6)	50.7	(0.4)	73.1	(0.5)	56.8	(0.4)	
Partners	Argentina	77.9	(3.3)	84.3	(2.3)	71.4	(4.2)	83.9	(1.6)	81.2	(2.8)	80.1	(2.3)
	Azerbaijan	88.8	(2.3)	83.2	(2.1)	83.4	(2.4)	80.2	(2.7)	90.6	(2.2)	83.4	(2.2)
	Brazil	80.0	(2.7)	86.4	(1.9)	75.1	(2.6)	82.1	(2.2)	91.4	(2.4)	87.9	(1.7)
	Bulgaria	73.0	(3.5)	82.1	(2.1)	72.2	(3.9)	81.8	(2.0)	89.0	(2.5)	85.9	(1.9)
	Chile	83.2	(3.3)	85.2	(1.6)	69.8	(3.8)	76.8	(2.1)	81.3	(3.1)	77.4	(2.2)
	Colombia	86.6	(2.4)	91.0	(1.5)	83.3	(3.2)	88.4	(2.2)	91.6	(2.2)	90.9	(1.6)
	Croatia	62.3	(3.2)	64.7	(2.5)	71.7	(3.6)	71.2	(2.2)	72.6	(3.4)	69.1	(2.3)
	Estonia	68.0	(3.5)	72.3	(2.4)	60.4	(3.5)	64.8	(2.6)	82.4	(2.5)	71.3	(2.5)
	Hong Kong-China	78.4	(2.8)	70.7	(3.4)	72.1	(2.8)	63.1	(4.2)	82.4	(2.1)	68.9	(3.4)
	Indonesia	94.3	(2.0)	95.1	(1.1)	96.7	(1.1)	92.9	(1.3)	93.8	(2.0)	93.2	(1.1)
	Israel	32.0	(3.8)	56.3	(2.7)	30.2	(3.8)	49.5	(2.5)	30.2	(4.0)	45.1	(2.6)
	Jordan	96.0	(1.3)	90.0	(1.5)	92.3	(2.3)	81.6	(1.6)	93.0	(1.5)	82.2	(1.5)
	Kyrgyzstan	94.7	(1.5)	96.1	(0.9)	90.8	(2.1)	93.0	(1.4)	90.7	(2.0)	89.5	(1.6)
	Latvia	60.6	(4.8)	69.8	(2.4)	72.6	(3.3)	69.8	(2.7)	82.7	(3.0)	72.8	(2.5)
	Lithuania	83.9	(2.5)	82.8	(1.7)	82.4	(2.4)	79.9	(1.9)	91.0	(1.9)	81.9	(1.5)
	Macao-China	84.9	(3.6)	81.5	(1.9)	85.5	(3.3)	75.5	(2.3)	88.8	(2.8)	81.8	(2.1)
	Montenegro	80.3	(2.8)	85.9	(1.6)	72.1	(3.1)	78.2	(2.0)	88.5	(2.2)	84.5	(1.6)
	Romania	83.9	(2.9)	86.0	(1.8)	82.4	(3.1)	82.4	(2.2)	86.0	(3.3)	75.9	(3.0)
	Russian Federation	72.8	(2.9)	81.3	(1.6)	76.8	(3.1)	78.7	(1.7)	75.1	(3.2)	79.5	(1.6)
	Serbia	70.1	(2.6)	74.7	(2.2)	55.0	(3.4)	61.1	(2.6)	82.3	(2.2)	78.5	(1.9)
	Slovenia	71.8	(3.5)	70.0	(2.0)	62.2	(4.0)	62.5	(2.4)	80.0	(2.9)	69.5	(1.8)
	Chinese Taipei	77.2	(2.6)	75.4	(1.8)	68.1	(2.7)	64.4	(1.7)	89.2	(1.6)	76.1	(1.4)
Thailand	94.9	(2.2)	95.4	(0.9)	97.0	(1.2)	91.5	(1.3)	98.8	(0.7)	93.7	(1.1)	
Tunisia	89.7	(2.2)	91.4	(1.6)	88.9	(2.3)	82.7	(2.1)	94.2	(2.1)	86.2	(2.3)	
Uruguay	71.0	(3.9)	80.4	(2.3)	57.1	(3.7)	72.1	(2.4)	73.1	(3.8)	75.4	(2.4)	

[Part 2/2]
Table A2.2a Instrumental interest in science (underlying percentages), by student group

		Percentage of students agreeing or strongly agreeing with the following statements							
		Studying science is worthwhile for me because what I learn will improve my career prospects				I will learn many things in science that will help me get a job			
		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)	
		%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD	Australia	79.0	(2.2)	45.1	(1.7)	74.1	(2.3)	46.0	(1.6)
	Austria	50.1	(3.6)	45.4	(2.4)	37.3	(3.4)	40.3	(3.0)
	Belgium	56.8	(2.7)	48.3	(2.6)	49.7	(2.6)	43.7	(2.1)
	Canada	78.3	(1.9)	58.4	(1.9)	74.2	(2.1)	59.1	(1.8)
	Czech Republic	51.2	(3.8)	47.7	(2.5)	48.6	(3.6)	48.5	(2.5)
	Denmark	63.9	(3.4)	53.8	(2.3)	52.5	(3.5)	52.5	(2.3)
	Finland	57.0	(3.5)	33.6	(2.3)	57.5	(3.5)	31.6	(2.1)
	France	66.7	(3.9)	50.4	(2.4)	51.9	(3.4)	41.6	(2.0)
	Germany	65.0	(3.2)	52.1	(1.9)	54.8	(4.2)	49.9	(2.2)
	Greece	64.1	(3.4)	61.0	(2.1)	59.4	(3.6)	59.9	(2.2)
	Hungary	46.6	(4.2)	59.4	(2.2)	47.4	(3.8)	60.0	(2.3)
	Iceland	62.7	(3.3)	44.8	(2.2)	59.9	(3.3)	42.0	(2.5)
	Ireland	75.1	(2.8)	48.0	(2.5)	70.2	(3.2)	51.8	(2.4)
	Italy	73.2	(2.0)	64.6	(1.7)	62.0	(2.1)	59.8	(1.5)
	Japan	48.5	(2.8)	24.7	(1.7)	46.4	(2.8)	26.0	(1.8)
	Korea	65.0	(3.4)	39.6	(2.1)	53.1	(2.6)	38.1	(2.0)
	Luxembourg	53.2	(4.4)	52.9	(2.1)	47.0	(4.7)	50.5	(2.0)
	Mexico	88.9	(1.4)	85.4	(1.7)	81.3	(2.0)	84.5	(1.4)
	Netherlands	60.3	(4.1)	50.5	(2.4)	44.1	(3.6)	41.7	(2.3)
	New Zealand	79.0	(3.5)	54.0	(2.1)	74.6	(3.4)	56.2	(2.0)
	Norway	65.6	(3.2)	47.0	(2.5)	52.6	(3.0)	39.3	(2.0)
	Poland	75.6	(2.3)	75.0	(1.7)	66.7	(3.0)	71.9	(2.1)
	Portugal	86.9	(3.3)	72.5	(2.1)	80.7	(3.5)	68.4	(1.9)
	Slovak Republic	55.1	(3.9)	51.9	(2.4)	50.0	(3.5)	52.4	(2.6)
	Spain	66.9	(2.6)	51.3	(1.5)	64.5	(2.8)	57.3	(1.7)
	Sweden	69.7	(3.6)	47.7	(2.3)	58.0	(3.7)	39.8	(2.7)
	Switzerland	52.3	(2.9)	41.2	(1.5)	41.0	(3.2)	38.2	(1.7)
	Turkey	79.3	(2.8)	71.9	(2.5)	73.3	(2.9)	69.5	(2.5)
United Kingdom	71.7	(2.8)	61.3	(2.0)	66.4	(3.0)	57.1	(1.9)	
United States	74.7	(3.2)	65.9	(1.7)	74.6	(3.3)	68.0	(2.3)	
OECD average	66.1	(0.6)	53.5	(0.4)	59.1	(0.6)	51.5	(0.4)	
Partners	Argentina	81.0	(3.2)	79.3	(2.3)	74.3	(3.0)	80.5	(2.2)
	Azerbaijan	85.8	(2.3)	81.0	(2.6)	81.7	(2.1)	80.6	(2.3)
	Brazil	83.2	(2.6)	83.9	(1.9)	79.3	(2.7)	82.5	(2.3)
	Bulgaria	76.9	(3.3)	79.5	(2.0)	69.5	(4.1)	81.1	(2.0)
	Chile	75.3	(3.6)	78.8	(2.1)	66.1	(3.7)	78.5	(2.0)
	Colombia	83.7	(2.9)	89.9	(1.7)	80.2	(4.0)	86.7	(2.8)
	Croatia	61.6	(3.8)	59.1	(2.6)	64.5	(3.5)	64.1	(2.4)
	Estonia	64.4	(3.1)	66.4	(2.3)	48.3	(3.2)	54.2	(2.4)
	Hong Kong-China	81.1	(2.2)	68.3	(3.2)	73.5	(2.6)	64.4	(3.7)
	Indonesia	86.7	(1.9)	89.7	(1.4)	84.8	(2.5)	88.0	(1.3)
	Israel	29.6	(3.4)	45.2	(2.5)	35.6	(3.7)	48.2	(2.2)
	Jordan	91.1	(2.6)	79.8	(1.8)	88.1	(2.3)	80.4	(1.8)
	Kyrgyzstan	84.9	(2.6)	89.5	(1.8)	86.7	(2.5)	91.1	(2.0)
	Latvia	46.9	(5.2)	53.5	(2.5)	53.6	(4.6)	62.0	(2.4)
	Lithuania	71.8	(3.1)	71.4	(1.9)	67.6	(2.9)	73.2	(1.7)
	Macao-China	84.6	(3.9)	76.4	(2.3)	78.7	(4.0)	76.0	(2.2)
	Montenegro	72.1	(3.1)	77.7	(2.0)	70.8	(3.0)	78.4	(2.0)
	Romania	84.5	(3.6)	77.5	(3.0)	79.9	(3.4)	81.4	(2.4)
	Russian Federation	64.1	(2.9)	71.8	(1.7)	63.7	(2.9)	72.9	(1.9)
	Serbia	66.9	(2.6)	71.1	(2.2)	63.3	(3.2)	70.2	(2.1)
	Slovenia	65.9	(3.5)	60.6	(1.8)	61.3	(4.0)	62.9	(1.8)
	Chinese Taipei	78.0	(2.4)	71.7	(1.9)	74.5	(2.0)	72.7	(1.8)
	Thailand	94.9	(1.6)	93.0	(1.2)	92.6	(2.5)	90.8	(1.5)
	Tunisia	90.0	(1.7)	82.2	(1.9)	89.0	(2.2)	79.8	(2.0)
Uruguay	57.0	(4.1)	66.6	(2.5)	59.8	(3.7)	70.7	(2.5)	



Table A2.2b Instrumental motivation by student group

	Instrumental motivation to learn science					
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers	
	Mean	S.E.	Mean	S.E.	Dif	S.E.
OECD						
Australia	0.46	(0.05)	-0.36	(0.03)	0.82	(0.05)
Austria	-0.30	(0.08)	-0.43	(0.07)	0.14	(0.11)
Belgium	-0.12	(0.05)	-0.38	(0.04)	0.26	(0.07)
Canada	0.48	(0.05)	-0.04	(0.03)	0.52	(0.06)
Czech Republic	-0.14	(0.07)	-0.24	(0.04)	0.10	(0.08)
Denmark	0.15	(0.07)	-0.13	(0.04)	0.28	(0.09)
Finland	0.01	(0.06)	-0.60	(0.04)	0.62	(0.08)
France	0.12	(0.08)	-0.38	(0.06)	0.50	(0.09)
Germany	0.07	(0.08)	-0.17	(0.05)	0.24	(0.09)
Greece	0.08	(0.07)	-0.01	(0.04)	0.09	(0.08)
Hungary	-0.12	(0.06)	0.02	(0.04)	-0.13	(0.07)
Iceland	0.30	(0.08)	-0.38	(0.04)	0.69	(0.09)
Ireland	0.31	(0.08)	-0.35	(0.05)	0.66	(0.09)
Italy	0.15	(0.03)	-0.02	(0.03)	0.17	(0.04)
Japan	-0.25	(0.05)	-0.83	(0.05)	0.58	(0.06)
Korea	-0.03	(0.06)	-0.49	(0.04)	0.46	(0.07)
Luxembourg	-0.14	(0.10)	-0.21	(0.04)	0.07	(0.11)
Mexico	0.61	(0.03)	0.64	(0.04)	-0.03	(0.05)
Netherlands	-0.06	(0.08)	-0.36	(0.05)	0.30	(0.10)
New Zealand	0.39	(0.07)	-0.15	(0.05)	0.54	(0.09)
Norway	0.02	(0.07)	-0.42	(0.04)	0.43	(0.08)
Poland	0.25	(0.05)	0.18	(0.04)	0.07	(0.06)
Portugal	0.75	(0.08)	0.11	(0.05)	0.64	(0.10)
Slovak Republic	-0.16	(0.06)	-0.21	(0.05)	0.05	(0.08)
Spain	0.22	(0.06)	-0.21	(0.03)	0.42	(0.07)
Sweden	0.14	(0.07)	-0.40	(0.05)	0.54	(0.09)
Switzerland	-0.12	(0.05)	-0.45	(0.03)	0.33	(0.06)
Turkey	0.59	(0.07)	0.20	(0.06)	0.39	(0.10)
United Kingdom	0.27	(0.06)	-0.05	(0.04)	0.33	(0.07)
United States	0.51	(0.07)	0.14	(0.04)	0.37	(0.09)
OECD average	0.15	(0.01)	-0.20	(0.01)	0.35	(0.01)
Partners						
Argentina	0.37	(0.07)	0.52	(0.06)	-0.15	(0.09)
Azerbaijan	0.56	(0.05)	0.54	(0.06)	0.02	(0.07)
Brazil	0.51	(0.04)	0.58	(0.04)	-0.07	(0.05)
Bulgaria	0.32	(0.08)	0.45	(0.04)	-0.13	(0.09)
Chile	0.49	(0.09)	0.50	(0.05)	-0.01	(0.09)
Colombia	0.65	(0.06)	0.79	(0.06)	-0.14	(0.08)
Croatia	0.06	(0.07)	0.04	(0.06)	0.02	(0.09)
Estonia	0.04	(0.05)	0.04	(0.03)	0.00	(0.07)
Hong Kong-China	0.39	(0.05)	0.02	(0.05)	0.37	(0.08)
Indonesia	0.71	(0.07)	0.73	(0.03)	-0.02	(0.08)
Israel	-0.68	(0.07)	-0.18	(0.06)	-0.49	(0.09)
Jordan	0.94	(0.06)	0.59	(0.04)	0.35	(0.07)
Kyrgyzstan	0.86	(0.06)	0.92	(0.04)	-0.06	(0.07)
Latvia	-0.03	(0.07)	0.06	(0.04)	-0.08	(0.08)
Lithuania	0.47	(0.05)	0.34	(0.03)	0.13	(0.05)
Macao-China	0.51	(0.07)	0.25	(0.04)	0.26	(0.08)
Montenegro	0.42	(0.06)	0.57	(0.04)	-0.14	(0.08)
Romania	0.44	(0.07)	0.39	(0.05)	0.05	(0.09)
Russian Federation	0.22	(0.06)	0.31	(0.03)	-0.09	(0.06)
Serbia	0.12	(0.05)	0.22	(0.05)	-0.10	(0.07)
Slovenia	0.12	(0.06)	0.01	(0.04)	0.11	(0.08)
Chinese Taipei	0.39	(0.05)	0.10	(0.03)	0.29	(0.06)
Thailand	0.87	(0.04)	0.62	(0.02)	0.24	(0.05)
Tunisia	1.03	(0.07)	0.71	(0.05)	0.32	(0.07)
Uruguay	0.10	(0.07)	0.28	(0.05)	-0.18	(0.08)

Note: Values that are statistically different are indicated in bold.

Table A2.2c Relationship between being resilient and PISA index of instrumental motivation in science learning

		Increased likelihood of being resilient associated with one unit on the PISA index of instrumental motivation in science learning					
		Ratio	S.E.	After accounting for ESCS, gender, immigrant background, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant background, grade, using test language	
				Ratio	S.E.	Ratio	S.E.
OECD	Australia	1.90	(0.06)	1.86	(0.06)	1.87	(0.06)
	Austria	1.15	(0.08)	1.37	(0.09)	1.38	(0.10)
	Belgium	1.30	(0.07)	1.48	(0.08)	1.55	(0.09)
	Canada	1.55	(0.06)	1.55	(0.07)	1.55	(0.07)
	Czech Republic	1.21	(0.12)	1.29	(0.12)	1.28	(0.12)
	Denmark	1.33	(0.09)	1.42	(0.09)	1.42	(0.09)
	Finland	1.99	(0.10)	2.02	(0.10)	2.02	(0.10)
	France	1.60	(0.09)	1.60	(0.10)	1.60	(0.10)
	Germany	1.25	(0.08)	1.18	(0.09)	1.24	(0.10)
	Greece	1.13	(0.10)	1.19	(0.11)	1.19	(0.11)
	Hungary	0.90	(0.10)	1.04	(0.11)	1.04	(0.12)
	Iceland	1.64	(0.08)	1.61	(0.08)	1.61	(0.08)
	Ireland	1.57	(0.08)	1.60	(0.08)	1.58	(0.08)
	Italy	1.31	(0.06)	1.32	(0.07)	1.17	(0.06)
	Japan	1.60	(0.06)	1.60	(0.06)	1.48	(0.06)
	Korea	1.68	(0.09)	1.68	(0.09)	1.64	(0.10)
	Luxembourg	1.07	(0.10)	1.13	(0.11)	1.15	(0.11)
	Mexico	1.00	(0.08)	1.08	(0.08)	1.10	(0.08)
	Netherlands	1.36	(0.10)	1.42	(0.10)	1.38	(0.11)
	New Zealand	1.65	(0.10)	1.71	(0.10)	1.72	(0.10)
	Norway	1.59	(0.09)	1.64	(0.09)	1.64	(0.09)
	Poland	1.15	(0.09)	1.21	(0.09)	1.21	(0.09)
	Portugal	2.22	(0.14)	1.63	(0.15)	1.68	(0.15)
	Slovak Republic	1.09	(0.10)	1.20	(0.10)	1.19	(0.11)
	Spain	1.54	(0.08)	1.46	(0.08)	1.47	(0.08)
	Sweden	1.63	(0.08)	1.78	(0.09)	1.77	(0.09)
	Switzerland	1.41	(0.07)	1.51	(0.07)	1.46	(0.07)
	Turkey	1.49	(0.11)	1.42	(0.12)	1.42	(0.12)
United Kingdom	1.39	(0.08)	1.40	(0.09)	1.41	(0.09)	
United States	1.66	(0.11)	1.73	(0.12)	1.76	(0.12)	
OECD average	1.41	(0.02)	1.45	(0.02)	1.45	(0.02)	
Partners	Argentina	0.83	(0.11)	0.89	(0.12)	0.91	(0.12)
	Azerbaijan	1.01	(0.10)	1.00	(0.10)	1.00	(0.10)
	Brazil	0.93	(0.09)	1.01	(0.10)	1.02	(0.10)
	Bulgaria	0.86	(0.13)	0.89	(0.13)	0.95	(0.13)
	Chile	1.03	(0.11)	1.11	(0.10)	1.15	(0.10)
	Colombia	0.86	(0.12)	1.07	(0.13)	1.08	(0.11)
	Croatia	1.01	(0.09)	1.04	(0.09)	1.09	(0.10)
	Estonia	1.05	(0.12)	1.11	(0.13)	1.12	(0.13)
	Hong Kong-China	1.57	(0.09)	1.84	(0.11)	1.97	(0.12)
	Indonesia	0.96	(0.16)	1.07	(0.15)	1.05	(0.14)
	Israel	0.70	(0.09)	0.67	(0.09)	0.65	(0.09)
	Jordan	1.64	(0.14)	1.50	(0.15)	1.51	(0.15)
	Kyrgyzstan	0.87	(0.14)	0.86	(0.15)	0.92	(0.15)
	Latvia	0.93	(0.16)	0.92	(0.17)	0.97	(0.17)
	Lithuania	1.23	(0.09)	1.26	(0.09)	1.31	(0.09)
	Macao-China	1.41	(0.14)	1.25	(0.15)	1.25	(0.16)
	Montenegro	0.90	(0.08)	0.94	(0.09)	1.01	(0.09)
	Romania	1.10	(0.17)	1.07	(0.17)	1.08	(0.18)
	Russian Federation	0.91	(0.12)	0.95	(0.12)	0.95	(0.12)
	Serbia	0.95	(0.08)	0.96	(0.08)	1.00	(0.09)
	Slovenia	1.16	(0.10)	1.22	(0.10)	1.20	(0.10)
	Chinese Taipei	1.53	(0.10)	1.49	(0.10)	1.47	(0.11)
Thailand	1.92	(0.13)	1.84	(0.13)	1.84	(0.13)	
Tunisia	1.59	(0.16)	1.45	(0.17)	1.49	(0.17)	
Uruguay	0.91	(0.09)	1.02	(0.09)	1.03	(0.09)	

Note: Values that are statistically different are indicated in bold.



[Part 1/2] **Engagement in science-related activities outside school (underlying percentages),
Table A2.3a by student group**

		Percentage of students doing the following activities very often or regularly											
		Watch TV programmes about science				Borrow or buy books on science topics				Visit web sites about science topics			
		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)	
		%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD	Australia	19.9	(1.6)	12.7	(0.9)	7.6	(1.1)	2.9	(0.5)	14.5	(1.3)	5.7	(0.6)
	Austria	23.3	(2.5)	13.1	(1.8)	8.0	(1.2)	6.1	(1.2)	11.5	(2.4)	9.7	(1.6)
	Belgium	27.9	(2.1)	21.2	(1.5)	9.1	(1.8)	6.6	(0.9)	16.7	(1.8)	11.1	(1.0)
	Canada	24.2	(2.0)	12.5	(1.0)	6.0	(0.8)	3.7	(0.7)	15.5	(1.4)	6.9	(0.8)
	Czech Republic	13.0	(2.2)	13.8	(1.8)	6.1	(1.6)	5.3	(1.3)	5.5	(1.6)	5.8	(0.8)
	Denmark	28.2	(3.0)	15.1	(1.5)	6.1	(1.6)	4.6	(0.9)	10.8	(2.2)	6.1	(1.2)
	Finland	19.0	(2.3)	12.4	(1.3)	4.3	(1.2)	2.2	(0.6)	5.6	(1.3)	1.9	(0.5)
	France	22.3	(3.4)	22.6	(1.6)	10.1	(2.3)	7.4	(1.0)	12.2	(3.0)	9.2	(1.0)
	Germany	25.3	(3.8)	13.0	(1.4)	7.3	(2.0)	4.5	(0.8)	12.3	(2.6)	7.8	(1.2)
	Greece	24.8	(2.8)	18.8	(1.5)	14.4	(2.1)	11.3	(1.4)	11.5	(1.9)	9.4	(1.3)
	Hungary	37.2	(3.6)	28.7	(1.8)	9.1	(2.1)	12.3	(1.8)	11.5	(2.2)	10.4	(1.4)
	Iceland	25.7	(3.0)	7.2	(1.3)	10.6	(2.0)	3.9	(0.9)	17.4	(2.8)	5.3	(1.0)
	Ireland	21.3	(2.7)	12.0	(1.3)	6.4	(1.7)	2.5	(0.9)	9.9	(2.1)	5.8	(1.1)
	Italy	28.7	(2.0)	21.7	(1.0)	9.6	(1.3)	7.2	(0.6)	15.5	(1.7)	8.8	(0.8)
	Japan	8.3	(1.5)	5.8	(0.7)	2.5	(0.9)	3.5	(0.8)	4.2	(1.1)	2.7	(0.6)
	Korea	8.1	(1.7)	6.7	(1.0)	7.0	(1.5)	3.0	(0.6)	6.2	(1.3)	2.7	(0.6)
	Luxembourg	30.4	(4.9)	17.9	(1.4)	12.0	(2.4)	8.2	(1.0)	15.5	(3.4)	10.4	(1.1)
	Mexico	39.2	(3.0)	44.2	(2.3)	23.0	(2.9)	35.3	(2.2)	26.5	(2.6)	27.8	(2.3)
	Netherlands	28.9	(3.1)	20.0	(2.0)	6.6	(1.8)	6.3	(1.4)	11.6	(2.1)	7.8	(1.1)
	New Zealand	16.7	(2.5)	13.9	(1.3)	7.7	(1.8)	6.9	(1.2)	9.6	(1.7)	7.3	(1.2)
Norway	24.5	(2.8)	17.5	(1.7)	2.3	(1.0)	4.9	(1.2)	15.1	(2.5)	10.8	(1.5)	
Poland	53.3	(2.9)	43.5	(1.9)	16.1	(2.2)	12.7	(1.2)	12.7	(2.1)	13.7	(1.4)	
Portugal	51.3	(3.5)	33.9	(2.0)	14.2	(2.7)	15.6	(1.8)	20.7	(3.2)	15.1	(1.4)	
Slovak Republic	24.5	(3.1)	17.6	(1.7)	10.4	(2.3)	5.7	(1.0)	6.2	(1.7)	6.5	(1.2)	
Spain	12.5	(1.8)	10.5	(1.1)	4.7	(1.1)	3.8	(0.7)	8.6	(1.3)	5.4	(0.7)	
Sweden	10.0	(2.1)	6.8	(1.0)	0.9	(0.7)	1.4	(0.5)	4.9	(1.6)	3.2	(0.7)	
Switzerland	18.2	(2.2)	14.0	(1.2)	6.1	(1.3)	4.8	(0.6)	8.4	(1.7)	8.6	(1.0)	
Turkey	31.0	(3.5)	21.1	(2.2)	26.3	(3.1)	15.9	(2.0)	17.4	(3.4)	12.1	(1.7)	
United Kingdom	16.8	(2.4)	9.4	(1.1)	5.9	(1.5)	3.5	(0.7)	12.1	(1.8)	6.8	(1.0)	
United States	27.2	(3.3)	19.8	(1.6)	8.4	(2.5)	6.6	(1.0)	18.5	(3.4)	9.3	(1.3)	
OECD average	24.7	(0.5)	17.6	(0.3)	9.0	(0.3)	7.3	(0.2)	12.3	(0.4)	8.5	(0.2)	
Partners	Argentina	36.1	(4.6)	34.3	(3.3)	25.6	(4.0)	30.9	(3.1)	19.7	(3.4)	21.5	(2.0)
	Azerbaijan	60.0	(2.7)	61.2	(2.9)	42.8	(3.9)	39.5	(3.3)	14.4	(3.2)	20.0	(2.5)
	Brazil	30.2	(3.8)	42.4	(3.0)	19.8	(2.8)	30.0	(2.2)	11.6	(2.2)	15.7	(1.5)
	Bulgaria	45.6	(4.3)	40.4	(2.4)	6.9	(2.1)	15.6	(2.1)	19.9	(2.9)	23.6	(1.8)
	Chile	53.4	(4.3)	32.2	(2.1)	22.2	(3.3)	22.1	(2.1)	27.5	(3.4)	25.3	(2.1)
	Colombia	58.0	(3.9)	50.2	(3.2)	34.0	(3.6)	39.9	(3.0)	29.7	(4.4)	31.8	(3.6)
	Croatia	36.7	(3.0)	25.6	(2.0)	11.9	(1.9)	5.9	(0.8)	10.3	(1.9)	5.4	(1.0)
	Estonia	26.3	(3.2)	22.0	(1.9)	4.7	(2.0)	6.0	(1.1)	15.6	(3.0)	14.8	(1.7)
	Hong Kong-China	17.4	(2.1)	9.1	(1.3)	15.3	(1.9)	3.7	(1.0)	11.6	(2.1)	5.3	(1.2)
	Indonesia	11.9	(2.1)	13.2	(1.8)	4.1	(1.1)	5.8	(0.9)	1.8	(1.0)	4.4	(0.8)
	Israel	27.3	(3.3)	31.3	(2.8)	15.5	(3.4)	19.7	(2.2)	22.4	(3.5)	21.9	(1.8)
	Jordan	43.1	(3.4)	47.0	(1.8)	21.4	(2.9)	27.5	(1.8)	16.0	(2.5)	27.1	(1.7)
	Kyrgyzstan	62.4	(2.9)	72.0	(3.2)	33.1	(3.2)	48.0	(2.9)	18.0	(2.4)	34.0	(3.4)
	Latvia	22.8	(3.2)	13.8	(1.6)	4.2	(1.4)	5.9	(1.1)	5.2	(1.5)	7.9	(1.1)
	Lithuania	28.7	(3.5)	28.6	(2.3)	4.2	(1.4)	8.3	(1.3)	12.0	(2.6)	10.9	(1.5)
	Macao-China	20.1	(2.6)	14.4	(1.7)	9.2	(1.8)	5.6	(0.9)	8.3	(1.5)	6.7	(1.3)
	Montenegro	38.0	(3.2)	38.4	(2.5)	13.5	(2.0)	13.3	(1.6)	10.2	(2.1)	13.6	(1.3)
	Romania	27.2	(5.4)	27.9	(2.9)	12.9	(3.8)	16.9	(1.8)	11.2	(5.3)	12.9	(1.9)
	Russian Federation	39.0	(3.6)	31.7	(2.9)	20.1	(3.0)	19.9	(3.8)	6.7	(2.2)	14.4	(3.4)
	Serbia	37.2	(3.3)	36.5	(2.2)	12.3	(2.8)	11.9	(1.5)	9.5	(2.0)	8.1	(1.0)
Slovenia	37.8	(3.9)	26.9	(2.0)	10.9	(2.0)	8.9	(1.0)	16.3	(3.0)	13.1	(1.4)	
Chinese Taipei	20.1	(1.8)	11.8	(1.1)	11.1	(1.7)	6.1	(0.8)	14.5	(2.0)	8.9	(1.0)	
Thailand	62.9	(3.4)	32.5	(2.3)	35.3	(3.3)	17.1	(1.7)	24.0	(3.0)	12.9	(1.4)	
Tunisia	40.5	(3.8)	47.3	(2.5)	28.5	(3.1)	37.2	(2.8)	8.5	(2.0)	24.3	(2.1)	
Uruguay	33.1	(2.9)	25.1	(2.2)	19.3	(2.8)	22.7	(1.9)	13.4	(2.6)	15.9	(1.4)	

[Part 2/2] **Engagement in science-related activities outside school (underlying percentages),
Table A2.3a by student group**

		Percentage of students doing the following activities very often or regularly											
		Listen to radio programmes about advances in science				Read science magazines or science articles in newspapers				Attend a science club			
		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)	
		%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD	Australia	4.8	(0.9)	2.6	(0.4)	12.9	(1.4)	4.0	(0.5)	1.1	(0.4)	1.3	(0.4)
	Austria	6.2	(1.5)	10.4	(1.5)	28.7	(2.7)	17.8	(2.2)	0.7	(0.6)	4.0	(0.8)
	Belgium	5.5	(1.4)	8.8	(1.0)	23.9	(2.3)	11.9	(1.0)	0.1	(0.2)	3.3	(0.7)
	Canada	3.9	(0.8)	5.0	(0.9)	15.5	(1.4)	7.7	(1.0)	0.7	(0.4)	1.6	(0.4)
	Czech Republic	1.3	(0.6)	6.5	(1.3)	19.8	(2.7)	12.0	(1.8)	5.6	(1.6)	4.4	(1.1)
	Denmark	5.6	(1.8)	4.5	(0.9)	25.4	(3.0)	9.0	(1.1)	1.5	(0.7)	2.6	(0.6)
	Finland	2.1	(0.9)	2.7	(0.7)	23.2	(2.7)	7.0	(1.0)	0.5	(0.4)	0.6	(0.3)
	France	3.8	(1.5)	8.0	(0.9)	25.2	(3.4)	15.3	(1.5)	1.4	(1.3)	2.8	(0.7)
	Germany	4.2	(1.7)	7.5	(1.0)	24.3	(3.2)	12.0	(1.5)	3.5	(1.6)	2.8	(0.6)
	Greece	4.5	(1.4)	10.8	(1.4)	40.5	(3.5)	20.5	(1.8)	17.4	(3.4)	15.1	(1.7)
	Hungary	7.5	(2.3)	7.6	(1.2)	28.4	(3.5)	17.5	(1.9)	8.4	(2.3)	11.1	(1.7)
	Iceland	3.6	(1.5)	2.2	(0.7)	42.6	(3.6)	12.3	(1.6)	0.5	(0.5)	1.5	(0.6)
	Ireland	4.9	(1.4)	3.1	(0.7)	13.5	(2.1)	6.5	(1.0)	0.5	(0.5)	1.0	(0.4)
	Italy	5.7	(1.0)	7.8	(0.8)	38.7	(1.9)	19.3	(1.1)	2.1	(0.7)	6.9	(0.9)
	Japan	0.7	(0.2)	1.4	(0.4)	5.9	(1.2)	5.0	(0.7)	1.2	(0.7)	2.1	(0.6)
	Korea	c	c	1.2	(0.4)	14.9	(1.7)	4.6	(1.0)	3.7	(1.1)	1.5	(0.6)
	Luxembourg	6.6	(1.9)	8.4	(1.0)	23.5	(2.8)	13.8	(1.3)	2.3	(1.1)	5.8	(0.8)
	Mexico	19.7	(2.4)	35.5	(2.5)	41.4	(2.9)	41.4	(2.5)	4.0	(1.5)	16.4	(1.7)
	Netherlands	2.8	(1.0)	9.1	(1.7)	15.4	(2.5)	11.9	(1.8)	2.2	(1.1)	5.8	(1.2)
	New Zealand	1.8	(0.9)	4.1	(0.7)	8.9	(1.9)	7.8	(1.4)	0.5	(0.5)	1.9	(0.6)
	Norway	3.0	(1.2)	3.6	(0.8)	18.7	(2.6)	8.9	(1.3)	3.0	(1.1)	5.8	(1.1)
Poland	12.5	(1.8)	19.1	(1.5)	37.0	(2.4)	24.8	(1.6)	13.3	(2.4)	8.3	(1.3)	
Portugal	8.8	(1.9)	11.3	(1.3)	37.4	(3.8)	18.2	(1.8)	1.8	(0.8)	8.1	(1.2)	
Slovak Republic	6.7	(1.8)	8.9	(1.7)	29.0	(3.1)	14.7	(2.3)	4.0	(1.8)	4.8	(1.2)	
Spain	4.0	(1.2)	3.4	(0.7)	21.0	(2.1)	7.6	(0.9)	3.6	(1.0)	4.0	(0.9)	
Sweden	1.9	(1.1)	2.6	(0.6)	13.3	(2.7)	4.1	(0.9)	0.4	(0.6)	1.3	(0.4)	
Switzerland	5.9	(1.9)	6.9	(0.7)	21.9	(2.0)	12.1	(1.1)	2.7	(0.7)	6.1	(0.7)	
Turkey	16.9	(2.9)	17.0	(2.4)	37.4	(3.8)	25.7	(2.3)	7.2	(2.3)	10.4	(1.8)	
United Kingdom	1.6	(0.7)	2.0	(0.5)	8.2	(1.4)	3.7	(0.7)	1.0	(0.5)	3.2	(0.9)	
United States	2.5	(1.0)	7.6	(1.4)	22.2	(3.0)	12.0	(1.1)	4.7	(1.4)	5.0	(1.4)	
OECD average	5.5	(0.3)	7.6	(0.2)	24.0	(0.5)	13.0	(0.3)	3.3	(0.2)	5.0	(0.2)	
Partners	Argentina	8.5	(2.3)	25.0	(2.5)	37.4	(3.7)	33.8	(2.5)	4.1	(1.5)	18.0	(2.7)
	Azerbaijan	42.6	(2.9)	40.8	(2.7)	40.1	(3.2)	38.2	(3.2)	34.7	(3.2)	30.5	(2.8)
	Brazil	13.4	(2.5)	27.5	(1.9)	36.6	(3.5)	38.1	(2.0)	5.6	(1.7)	22.3	(1.8)
	Bulgaria	12.2	(2.7)	19.2	(2.2)	33.3	(3.4)	24.2	(2.1)	4.6	(1.6)	13.0	(1.8)
	Chile	15.2	(2.5)	18.4	(1.4)	42.2	(3.7)	23.4	(1.7)	5.9	(2.4)	15.0	(1.8)
	Colombia	32.8	(4.0)	40.2	(3.4)	57.8	(4.2)	51.4	(2.7)	7.7	(2.3)	18.9	(2.2)
	Croatia	6.2	(1.4)	11.3	(1.2)	39.9	(3.1)	23.1	(1.4)	1.9	(0.9)	5.1	(0.9)
	Estonia	9.2	(2.2)	10.1	(1.7)	28.0	(4.0)	18.3	(2.2)	6.5	(2.4)	5.8	(1.2)
	Hong Kong-China	6.8	(1.5)	5.5	(1.1)	18.6	(2.0)	8.2	(1.4)	10.9	(1.7)	5.6	(1.1)
	Indonesia	6.0	(1.6)	14.0	(1.8)	7.2	(1.6)	12.3	(1.2)	3.5	(1.1)	7.1	(1.1)
	Israel	12.5	(3.2)	23.9	(2.2)	36.4	(4.6)	26.2	(2.0)	9.7	(2.4)	17.5	(2.0)
	Jordan	38.8	(3.4)	42.1	(2.3)	46.1	(4.2)	43.2	(2.5)	15.3	(2.9)	27.1	(1.7)
	Kyrgyzstan	51.5	(3.5)	66.0	(2.3)	59.5	(3.4)	64.0	(2.3)	25.1	(3.1)	41.0	(2.7)
	Latvia	5.7	(1.7)	12.1	(1.6)	21.0	(3.2)	15.9	(2.0)	1.7	(1.2)	2.6	(0.8)
	Lithuania	7.3	(1.6)	10.9	(1.2)	21.8	(2.8)	18.0	(1.6)	4.3	(1.5)	3.6	(0.8)
	Macao-China	6.6	(1.3)	7.1	(1.2)	22.1	(2.5)	10.4	(1.7)	2.4	(0.8)	2.7	(0.6)
	Montenegro	25.3	(3.2)	30.4	(1.8)	44.9	(3.7)	36.1	(2.4)	1.3	(0.7)	10.6	(1.2)
	Romania	9.2	(2.5)	18.4	(2.9)	30.9	(5.0)	26.1	(2.1)	4.8	(3.2)	12.6	(1.9)
	Russian Federation	19.8	(2.8)	23.5	(3.1)	35.8	(2.9)	28.7	(2.9)	8.9	(3.0)	12.9	(3.1)
	Serbia	17.5	(2.6)	25.2	(1.8)	34.0	(3.7)	22.4	(1.9)	5.0	(1.6)	6.7	(1.0)
	Slovenia	10.1	(2.1)	11.1	(1.3)	29.1	(3.1)	16.0	(1.2)	6.4	(1.7)	7.6	(1.3)
Chinese Taipei	4.4	(1.0)	7.0	(0.9)	24.4	(2.6)	11.7	(1.3)	5.5	(1.4)	7.4	(0.9)	
Thailand	24.9	(3.0)	24.7	(2.4)	43.6	(2.6)	29.3	(2.3)	37.6	(3.1)	30.3	(2.2)	
Tunisia	38.5	(3.3)	44.4	(2.2)	46.3	(3.1)	50.3	(2.8)	14.5	(2.7)	31.2	(2.3)	
Uruguay	7.5	(2.0)	12.1	(1.6)	25.9	(3.4)	20.3	(2.1)	5.4	(1.7)	10.2	(1.3)	



Table A2.3b Engagement in science-related activities outside school, by student group

	Participation in science-related activities					
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers	
	Mean	S.E.	Mean	S.E.	Dif	S.E.
OECD						
Australia	-0.04	(0.03)	-0.65	(0.03)	0.59	(0.04)
Austria	0.17	(0.05)	-0.21	(0.05)	0.37	(0.08)
Belgium	0.16	(0.04)	-0.21	(0.03)	0.37	(0.06)
Canada	-0.01	(0.03)	-0.49	(0.04)	0.45	(0.06)
Czech Republic	0.15	(0.05)	-0.01	(0.05)	0.15	(0.07)
Denmark	0.08	(0.06)	-0.49	(0.04)	0.54	(0.07)
Finland	0.04	(0.04)	-0.45	(0.03)	0.47	(0.05)
France	0.13	(0.07)	-0.27	(0.04)	0.39	(0.08)
Germany	0.20	(0.06)	-0.19	(0.04)	0.42	(0.07)
Greece	0.35	(0.05)	-0.03	(0.05)	0.37	(0.07)
Hungary	0.39	(0.06)	0.18	(0.04)	0.19	(0.08)
Iceland	0.12	(0.06)	-0.64	(0.04)	0.73	(0.09)
Ireland	-0.19	(0.07)	-0.82	(0.04)	0.61	(0.08)
Italy	0.33	(0.03)	0.02	(0.02)	0.31	(0.04)
Japan	-0.50	(0.04)	-0.89	(0.03)	0.39	(0.06)
Korea	-0.10	(0.04)	-0.59	(0.05)	0.48	(0.07)
Luxembourg	0.27	(0.06)	-0.12	(0.04)	0.38	(0.08)
Mexico	0.65	(0.04)	0.87	(0.05)	-0.20	(0.08)
Netherlands	-0.18	(0.06)	-0.46	(0.06)	0.26	(0.08)
New Zealand	-0.13	(0.05)	-0.50	(0.05)	0.35	(0.07)
Norway	0.07	(0.05)	-0.43	(0.04)	0.49	(0.07)
Poland	0.62	(0.04)	0.58	(0.03)	0.03	(0.05)
Portugal	0.58	(0.05)	0.24	(0.05)	0.32	(0.06)
Slovak Republic	0.34	(0.05)	0.14	(0.07)	0.22	(0.09)
Spain	-0.04	(0.04)	-0.45	(0.03)	0.37	(0.06)
Sweden	-0.34	(0.07)	-0.77	(0.04)	0.40	(0.08)
Switzerland	0.08	(0.05)	-0.19	(0.03)	0.27	(0.06)
Turkey	0.67	(0.05)	0.31	(0.07)	0.32	(0.09)
United Kingdom	-0.29	(0.06)	-0.68	(0.04)	0.37	(0.08)
United States	0.20	(0.05)	-0.21	(0.06)	0.38	(0.10)
OECD average	0.13	(0.01)	-0.25	(0.01)	0.36	(0.01)
Partners						
Argentina	0.40	(0.07)	0.55	(0.06)	-0.17	(0.10)
Azerbaijan	1.16	(0.06)	1.18	(0.06)	-0.03	(0.08)
Brazil	0.33	(0.05)	0.64	(0.04)	-0.33	(0.07)
Bulgaria	0.64	(0.04)	0.71	(0.05)	-0.06	(0.08)
Chile	0.60	(0.07)	0.38	(0.05)	0.23	(0.07)
Colombia	0.94	(0.05)	1.01	(0.05)	-0.08	(0.07)
Croatia	0.44	(0.04)	0.22	(0.03)	0.23	(0.06)
Estonia	0.40	(0.05)	0.29	(0.04)	0.11	(0.07)
Hong Kong-China	0.39	(0.05)	-0.12	(0.05)	0.46	(0.07)
Indonesia	0.34	(0.04)	0.36	(0.06)	-0.03	(0.07)
Israel	0.28	(0.07)	0.19	(0.07)	0.09	(0.13)
Jordan	0.93	(0.06)	0.92	(0.04)	-0.02	(0.07)
Kyrgyzstan	1.06	(0.04)	1.49	(0.04)	-0.35	(0.07)
Latvia	0.24	(0.05)	0.16	(0.04)	0.07	(0.08)
Lithuania	0.27	(0.05)	0.21	(0.04)	0.06	(0.07)
Macao-China	0.28	(0.05)	0.01	(0.04)	0.25	(0.07)
Montenegro	0.68	(0.05)	0.74	(0.04)	-0.08	(0.06)
Romania	0.59	(0.05)	0.53	(0.06)	0.03	(0.09)
Russian Federation	0.56	(0.05)	0.49	(0.08)	0.05	(0.07)
Serbia	0.55	(0.06)	0.50	(0.04)	0.04	(0.08)
Slovenia	0.52	(0.05)	0.29	(0.04)	0.24	(0.07)
Chinese Taipei	0.43	(0.04)	0.11	(0.03)	0.31	(0.06)
Thailand	1.19	(0.04)	0.90	(0.02)	0.26	(0.04)
Tunisia	0.94	(0.04)	1.16	(0.03)	-0.20	(0.06)
Uruguay	0.28	(0.06)	0.17	(0.05)	0.08	(0.08)

Note: Values that are statistically different are indicated in bold.



Table A2.3c Relationship between being resilient and PISA index of science activities outside the school

		Increased likelihood of being resilient associated with one unit on the PISA index of science activities					
		Ratio	S.E.	After accounting for ESCS, gender, immigrant background, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant background, grade, using test language	
				Ratio	S.E.	Ratio	S.E.
OECD	Australia	1.76	(0.04)	1.77	(0.04)	1.79	(0.05)
	Austria	1.47	(0.08)	1.68	(0.09)	1.68	(0.09)
	Belgium	1.43	(0.06)	1.74	(0.08)	1.78	(0.09)
	Canada	1.46	(0.06)	1.58	(0.06)	1.59	(0.06)
	Czech Republic	1.24	(0.09)	1.34	(0.10)	1.38	(0.10)
	Denmark	1.66	(0.08)	1.83	(0.08)	1.85	(0.08)
	Finland	1.74	(0.07)	1.76	(0.08)	1.76	(0.08)
	France	1.51	(0.08)	1.71	(0.11)	1.69	(0.12)
	Germany	1.52	(0.09)	1.50	(0.11)	1.58	(0.14)
	Greece	1.36	(0.06)	1.39	(0.07)	1.39	(0.07)
	Hungary	1.26	(0.10)	1.37	(0.11)	1.39	(0.13)
	Iceland	1.81	(0.09)	1.88	(0.10)	1.88	(0.10)
	Ireland	1.73	(0.07)	1.79	(0.08)	1.81	(0.08)
	Italy	1.42	(0.05)	1.38	(0.06)	1.32	(0.06)
	Japan	1.48	(0.07)	1.46	(0.07)	1.48	(0.08)
	Korea	1.57	(0.07)	1.58	(0.07)	1.53	(0.07)
	Luxembourg	1.42	(0.09)	1.50	(0.11)	1.47	(0.11)
	Mexico	0.88	(0.09)	0.94	(0.09)	0.95	(0.09)
	Netherlands	1.30	(0.07)	1.52	(0.07)	1.60	(0.10)
	New Zealand	1.47	(0.08)	1.60	(0.09)	1.64	(0.09)
	Norway	1.56	(0.08)	1.68	(0.08)	1.68	(0.09)
	Poland	1.10	(0.09)	1.08	(0.09)	1.08	(0.09)
	Portugal	1.38	(0.07)	1.59	(0.09)	1.63	(0.10)
	Slovak Republic	1.43	(0.13)	1.51	(0.13)	1.54	(0.13)
	Spain	1.39	(0.06)	1.42	(0.07)	1.44	(0.07)
	Sweden	1.50	(0.10)	1.70	(0.12)	1.71	(0.11)
	Switzerland	1.31	(0.07)	1.52	(0.09)	1.51	(0.09)
Turkey	1.36	(0.09)	1.33	(0.09)	1.33	(0.09)	
United Kingdom	1.39	(0.08)	1.44	(0.08)	1.46	(0.08)	
United States	1.46	(0.11)	1.56	(0.14)	1.58	(0.14)	
OECD average	1.43	(0.01)	1.52	(0.02)	1.54	(0.02)	
Partners	Argentina	0.92	(0.09)	1.02	(0.10)	1.06	(0.11)
	Azerbaijan	0.99	(0.10)	1.00	(0.10)	1.00	(0.10)
	Brazil	0.79	(0.07)	0.84	(0.09)	0.86	(0.09)
	Bulgaria	1.00	(0.10)	1.05	(0.11)	1.15	(0.11)
	Chile	1.26	(0.07)	1.32	(0.08)	1.39	(0.09)
	Colombia	0.95	(0.11)	1.05	(0.13)	1.05	(0.13)
	Croatia	1.34	(0.08)	1.36	(0.09)	1.41	(0.09)
	Estonia	1.18	(0.12)	1.23	(0.14)	1.24	(0.14)
	Hong Kong-China	1.52	(0.07)	1.57	(0.08)	1.56	(0.08)
	Indonesia	0.95	(0.11)	0.97	(0.12)	0.94	(0.12)
	Israel	1.04	(0.08)	1.07	(0.08)	1.18	(0.09)
	Jordan	1.01	(0.08)	1.04	(0.09)	1.04	(0.10)
	Kyrgyzstan	0.53	(0.12)	0.50	(0.12)	0.54	(0.12)
	Latvia	1.14	(0.14)	1.04	(0.14)	1.08	(0.14)
	Lithuania	1.11	(0.11)	1.08	(0.11)	1.10	(0.12)
	Macao-China	1.38	(0.08)	1.41	(0.09)	1.41	(0.10)
	Montenegro	0.96	(0.09)	0.99	(0.10)	1.07	(0.10)
	Romania	1.08	(0.13)	1.06	(0.14)	1.15	(0.16)
	Russian Federation	1.08	(0.09)	1.16	(0.08)	1.17	(0.08)
	Serbia	1.11	(0.11)	1.11	(0.11)	1.16	(0.12)
	Slovenia	1.32	(0.10)	1.28	(0.09)	1.39	(0.11)
Chinese Taipei	1.37	(0.08)	1.33	(0.08)	1.37	(0.09)	
Thailand	2.02	(0.14)	1.85	(0.15)	1.88	(0.16)	
Tunisia	0.77	(0.11)	0.90	(0.13)	0.92	(0.14)	
Uruguay	1.14	(0.08)	1.27	(0.09)	1.28	(0.10)	

Note: Values that are statistically different are indicated in bold.



Table A2.4b Science self-efficacy by student group

	Science self-efficacy						
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers		
	Mean	S.E.	Mean	S.E.	Dif	S.E.	
OECD	Australia	0.50	(0.03)	-0.59	(0.03)	1.06	(0.04)
	Austria	0.18	(0.05)	-0.69	(0.05)	0.88	(0.07)
	Belgium	0.36	(0.04)	-0.58	(0.04)	0.91	(0.06)
	Canada	0.54	(0.04)	-0.48	(0.04)	1.00	(0.06)
	Czech Republic	0.39	(0.04)	-0.25	(0.04)	0.60	(0.07)
	Denmark	0.25	(0.05)	-0.68	(0.04)	0.92	(0.07)
	Finland	0.36	(0.04)	-0.55	(0.04)	0.90	(0.07)
	France	0.31	(0.05)	-0.55	(0.04)	0.81	(0.08)
	Germany	0.37	(0.05)	-0.51	(0.04)	0.86	(0.07)
	Greece	0.07	(0.05)	-0.56	(0.03)	0.62	(0.06)
	Hungary	0.10	(0.05)	-0.42	(0.03)	0.50	(0.08)
	Iceland	0.53	(0.05)	-0.60	(0.04)	1.08	(0.08)
	Ireland	0.38	(0.05)	-0.67	(0.04)	1.02	(0.07)
	Italy	-0.05	(0.03)	-0.53	(0.03)	0.47	(0.03)
	Japan	-0.34	(0.04)	-0.98	(0.04)	0.64	(0.07)
	Korea	-0.04	(0.04)	-0.76	(0.04)	0.71	(0.07)
	Luxembourg	0.16	(0.07)	-0.61	(0.04)	0.71	(0.09)
	Mexico	0.20	(0.04)	-0.14	(0.05)	0.33	(0.07)
	Netherlands	0.23	(0.04)	-0.37	(0.04)	0.58	(0.07)
	New Zealand	0.38	(0.06)	-0.63	(0.04)	1.00	(0.07)
	Norway	0.41	(0.05)	-0.48	(0.04)	0.86	(0.07)
	Poland	0.59	(0.04)	-0.31	(0.03)	0.85	(0.07)
	Portugal	0.52	(0.05)	-0.21	(0.04)	0.71	(0.08)
	Slovak Republic	0.29	(0.05)	-0.30	(0.06)	0.59	(0.09)
	Spain	0.31	(0.05)	-0.69	(0.04)	0.96	(0.07)
	Sweden	0.24	(0.05)	-0.70	(0.05)	0.91	(0.07)
Switzerland	0.09	(0.04)	-0.73	(0.03)	0.79	(0.05)	
Turkey	0.30	(0.04)	-0.41	(0.07)	0.66	(0.10)	
United Kingdom	0.73	(0.05)	-0.51	(0.03)	1.18	(0.06)	
United States	0.58	(0.06)	-0.31	(0.09)	0.84	(0.11)	
OECD average	0.30	(0.01)	-0.53	(0.01)	0.80	(0.01)	
Partners	Argentina	0.21	(0.06)	-0.45	(0.05)	0.61	(0.09)
	Azerbaijan	-0.61	(0.09)	-0.85	(0.11)	0.25	(0.14)
	Brazil	0.01	(0.06)	-0.37	(0.05)	0.33	(0.08)
	Bulgaria	0.18	(0.05)	-0.53	(0.06)	0.67	(0.09)
	Chile	0.22	(0.06)	-0.35	(0.04)	0.55	(0.09)
	Colombia	0.18	(0.06)	-0.28	(0.04)	0.41	(0.09)
	Croatia	0.48	(0.04)	-0.37	(0.03)	0.80	(0.06)
	Estonia	0.37	(0.05)	-0.45	(0.03)	0.79	(0.06)
	Hong Kong-China	0.31	(0.05)	-0.49	(0.04)	0.77	(0.07)
	Indonesia	-0.75	(0.05)	-0.97	(0.05)	0.20	(0.07)
	Israel	0.27	(0.08)	-0.25	(0.06)	0.49	(0.12)
	Jordan	0.38	(0.05)	-0.12	(0.04)	0.46	(0.08)
	Kyrgyzstan	-0.22	(0.06)	-0.35	(0.06)	0.12	(0.11)
	Latvia	0.21	(0.05)	-0.37	(0.04)	0.57	(0.06)
	Lithuania	0.16	(0.05)	-0.40	(0.04)	0.57	(0.07)
	Macao-China	0.07	(0.05)	-0.61	(0.05)	0.65	(0.07)
	Montenegro	0.29	(0.05)	-0.63	(0.05)	0.87	(0.07)
	Romania	-0.19	(0.07)	-0.69	(0.06)	0.43	(0.12)
	Russian Federation	0.27	(0.05)	-0.49	(0.08)	0.68	(0.09)
	Serbia	0.32	(0.06)	-0.35	(0.04)	0.63	(0.09)
	Slovenia	0.09	(0.05)	-0.59	(0.04)	0.68	(0.07)
	Chinese Taipei	0.46	(0.04)	-0.41	(0.04)	0.84	(0.06)
	Thailand	0.13	(0.04)	-0.15	(0.04)	0.25	(0.06)
	Tunisia	0.02	(0.04)	-0.35	(0.04)	0.36	(0.06)
	Uruguay	0.36	(0.05)	-0.31	(0.05)	0.68	(0.07)

Note: Values that are statistically different are indicated in bold.

Table A2.4c Relationship between being resilient and PISA index of science efficacy

	Increased likelihood of being resilient associate with one unit on the PISA index of science efficacy					
	Ratio	S.E.	After accounting for ESCS, gender, immigrant, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant, grade, using test language	
			Ratio	S.E.	Ratio	S.E.
OECD						
Australia	2.50	(0.06)	2.46	(0.06)	2.48	(0.06)
Austria	2.60	(0.09)	2.63	(0.11)	2.42	(0.10)
Belgium	2.57	(0.08)	2.84	(0.09)	2.63	(0.09)
Canada	2.20	(0.08)	2.18	(0.08)	2.19	(0.08)
Czech Republic	2.04	(0.11)	2.15	(0.13)	2.09	(0.14)
Denmark	2.43	(0.10)	2.55	(0.11)	2.56	(0.11)
Finland	2.87	(0.12)	2.81	(0.12)	2.82	(0.12)
France	2.49	(0.11)	2.64	(0.14)	2.51	(0.15)
Germany	2.55	(0.12)	2.25	(0.13)	2.18	(0.15)
Greece	1.91	(0.09)	1.94	(0.10)	1.89	(0.10)
Hungary	2.00	(0.15)	1.99	(0.17)	1.98	(0.19)
Iceland	2.28	(0.10)	2.31	(0.10)	2.31	(0.10)
Ireland	2.62	(0.11)	2.73	(0.12)	2.75	(0.12)
Italy	2.05	(0.06)	1.89	(0.06)	1.77	(0.06)
Japan	1.74	(0.08)	1.71	(0.08)	1.64	(0.09)
Korea	2.25	(0.13)	2.22	(0.12)	2.23	(0.13)
Luxembourg	1.89	(0.12)	1.91	(0.13)	1.90	(0.13)
Mexico	1.50	(0.08)	1.51	(0.08)	1.49	(0.08)
Netherlands	1.65	(0.07)	1.76	(0.08)	1.86	(0.10)
New Zealand	2.87	(0.12)	2.85	(0.12)	2.98	(0.13)
Norway	2.06	(0.11)	2.13	(0.11)	2.14	(0.11)
Poland	2.61	(0.11)	2.60	(0.11)	2.60	(0.11)
Portugal	2.15	(0.09)	2.28	(0.14)	2.33	(0.14)
Slovak Republic	2.00	(0.12)	2.00	(0.13)	1.93	(0.13)
Spain	2.29	(0.09)	2.16	(0.09)	2.16	(0.09)
Sweden	2.48	(0.09)	2.68	(0.11)	2.67	(0.11)
Switzerland	2.36	(0.09)	2.38	(0.11)	2.35	(0.11)
Turkey	1.76	(0.09)	1.69	(0.10)	1.67	(0.10)
United Kingdom	3.10	(0.09)	3.10	(0.09)	3.16	(0.10)
United States	1.86	(0.08)	1.91	(0.08)	1.96	(0.08)
OECD average	2.22	(0.02)	2.24	(0.02)	2.22	(0.02)
Partners						
Argentina	1.97	(0.11)	1.80	(0.12)	1.76	(0.13)
Azerbaijan	1.11	(0.08)	1.11	(0.08)	1.11	(0.08)
Brazil	1.39	(0.09)	1.34	(0.09)	1.35	(0.09)
Bulgaria	1.64	(0.07)	1.60	(0.08)	1.61	(0.08)
Chile	1.84	(0.11)	1.70	(0.12)	1.75	(0.12)
Colombia	1.55	(0.13)	1.52	(0.14)	1.52	(0.14)
Croatia	2.68	(0.10)	2.64	(0.10)	2.59	(0.11)
Estonia	2.83	(0.11)	2.75	(0.11)	2.78	(0.11)
Hong Kong-China	2.21	(0.10)	2.13	(0.10)	2.09	(0.10)
Indonesia	1.27	(0.10)	1.24	(0.10)	1.21	(0.10)
Israel	1.39	(0.09)	1.37	(0.09)	1.42	(0.09)
Jordan	1.39	(0.07)	1.42	(0.08)	1.42	(0.08)
Kyrgyzstan	1.09	(0.10)	1.08	(0.10)	1.09	(0.10)
Latvia	2.37	(0.11)	2.35	(0.13)	2.39	(0.13)
Lithuania	2.06	(0.13)	1.93	(0.13)	1.98	(0.13)
Macao-China	1.91	(0.10)	1.89	(0.12)	1.87	(0.12)
Montenegro	2.36	(0.11)	2.31	(0.11)	2.27	(0.11)
Romania	1.46	(0.12)	1.44	(0.13)	1.48	(0.14)
Russian Federation	1.84	(0.09)	1.86	(0.09)	1.87	(0.09)
Serbia	1.81	(0.09)	1.83	(0.10)	1.78	(0.10)
Slovenia	2.07	(0.11)	2.16	(0.10)	2.07	(0.11)
Chinese Taipei	2.10	(0.08)	2.07	(0.08)	1.94	(0.08)
Thailand	1.46	(0.10)	1.40	(0.10)	1.43	(0.10)
Tunisia	1.62	(0.09)	1.46	(0.11)	1.46	(0.11)
Uruguay	1.96	(0.09)	1.85	(0.09)	1.89	(0.10)

Note: Values that are statistically different are indicated in bold.



Table A2.5a ^[Part 1/2] Science self-concept (underlying percentages), by student group

	Percentage of students agreeing or strongly agreeing with following statements												
	Learning advance science topics would be easy for me				I can usually give good answers to test questions on science topics				I learn science topics quickly				
	Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	
OECD													
Australia	54.0	(2.3)	25.2	(1.3)	81.9	(1.7)	42.1	(1.7)	71.4	(2.2)	34.8	(1.5)	
Austria	49.7	(3.9)	44.9	(3.0)	79.6	(2.8)	53.8	(2.1)	72.2	(3.0)	45.9	(2.4)	
Belgium	42.2	(2.4)	38.2	(2.0)	77.2	(2.6)	46.9	(2.5)	60.6	(2.7)	41.1	(2.0)	
Canada	68.9	(2.2)	37.0	(1.9)	86.7	(1.9)	51.9	(2.0)	80.7	(2.2)	45.1	(2.0)	
Czech Republic	30.2	(3.5)	40.4	(2.6)	74.7	(3.5)	54.3	(2.2)	62.0	(3.6)	48.1	(2.6)	
Denmark	45.2	(3.6)	24.0	(2.0)	77.6	(2.9)	46.7	(2.3)	69.5	(4.0)	40.4	(2.3)	
Finland	63.0	(3.2)	34.1	(2.2)	84.6	(2.8)	46.4	(2.2)	76.1	(2.7)	39.1	(2.3)	
France	49.8	(3.8)	37.3	(2.0)	69.9	(3.3)	50.7	(2.0)	64.4	(3.9)	38.9	(1.8)	
Germany	71.6	(2.9)	63.7	(2.4)	76.6	(2.9)	51.8	(2.2)	75.2	(2.9)	49.5	(2.7)	
Greece	51.4	(3.2)	48.8	(2.2)	66.4	(2.7)	48.5	(2.0)	56.5	(3.3)	42.6	(2.5)	
Hungary	23.9	(3.2)	43.1	(3.4)	52.9	(3.3)	53.0	(2.6)	48.9	(3.6)	41.9	(2.0)	
Iceland	63.1	(3.2)	24.4	(2.2)	85.4	(2.3)	37.9	(2.6)	78.2	(2.5)	31.5	(2.3)	
Ireland	43.6	(3.5)	29.3	(2.6)	73.4	(3.3)	39.3	(2.3)	64.4	(3.2)	27.7	(2.5)	
Italy	54.3	(2.2)	52.7	(1.5)	86.9	(1.4)	70.4	(1.3)	64.9	(2.2)	48.5	(1.6)	
Japan	12.8	(2.0)	9.6	(1.3)	36.2	(3.4)	22.2	(1.8)	32.1	(3.2)	17.0	(1.3)	
Korea	20.6	(2.2)	6.7	(1.2)	47.1	(2.8)	15.5	(1.5)	37.5	(2.8)	14.3	(1.5)	
Luxembourg	72.5	(3.8)	56.5	(1.8)	78.8	(3.4)	55.3	(1.9)	67.5	(3.9)	50.9	(2.1)	
Mexico	83.6	(2.0)	86.7	(1.5)	79.9	(3.2)	74.6	(1.6)	80.5	(2.4)	71.1	(2.3)	
Netherlands	25.7	(2.8)	26.9	(2.5)	63.9	(3.9)	34.2	(2.4)	52.0	(3.7)	29.7	(2.6)	
New Zealand	45.0	(3.2)	35.1	(2.0)	82.2	(2.8)	51.1	(2.1)	65.9	(3.0)	39.0	(2.4)	
Norway	49.4	(3.8)	35.7	(2.2)	89.5	(2.3)	53.7	(2.3)	74.5	(3.7)	39.3	(2.2)	
Poland	58.9	(3.2)	61.9	(2.0)	82.3	(2.3)	58.5	(2.1)	63.1	(2.9)	47.7	(2.1)	
Portugal	53.5	(3.3)	48.5	(2.4)	92.5	(2.1)	72.4	(2.3)	84.8	(2.8)	62.3	(2.2)	
Slovak Republic	53.7	(3.7)	46.1	(3.0)	74.5	(3.7)	50.6	(2.7)	64.2	(3.0)	50.5	(2.1)	
Spain	61.0	(2.8)	49.1	(1.7)	74.2	(2.2)	42.5	(1.9)	62.6	(2.3)	34.6	(1.5)	
Sweden	54.6	(4.0)	28.5	(2.4)	87.5	(3.3)	48.8	(2.0)	71.3	(3.2)	35.9	(2.5)	
Switzerland	61.0	(2.7)	48.0	(1.8)	76.3	(2.5)	48.3	(1.5)	65.1	(3.0)	45.2	(1.7)	
Turkey	70.0	(3.7)	67.8	(3.1)	65.5	(3.3)	58.1	(3.3)	71.5	(2.9)	57.7	(2.7)	
United Kingdom	50.7	(2.9)	41.4	(2.1)	84.9	(2.3)	57.2	(1.7)	66.3	(2.7)	38.1	(1.8)	
United States	73.7	(3.6)	43.6	(2.3)	77.1	(2.9)	53.3	(2.7)	73.5	(3.1)	52.6	(1.9)	
OECD average	51.9	(0.6)	41.2	(0.4)	75.5	(0.5)	49.7	(0.4)	65.9	(0.6)	42.0	(0.4)	
Partners													
Argentina	64.6	(4.2)	70.3	(3.1)	74.6	(3.5)	65.3	(3.8)	67.6	(4.0)	65.8	(3.0)	
Azerbaijan	85.3	(2.3)	82.4	(2.4)	78.1	(3.2)	71.5	(3.5)	78.4	(3.5)	74.5	(3.5)	
Brazil	57.6	(3.7)	77.1	(1.9)	84.2	(3.0)	76.3	(1.8)	63.6	(4.1)	60.1	(2.3)	
Bulgaria	63.4	(3.7)	65.8	(2.7)	88.5	(3.0)	72.5	(2.8)	78.3	(3.8)	64.7	(2.3)	
Chile	64.7	(4.1)	57.1	(2.3)	65.0	(3.5)	50.5	(2.4)	68.7	(4.2)	49.7	(2.4)	
Colombia	88.9	(2.2)	84.0	(2.2)	86.8	(3.2)	79.6	(3.0)	89.1	(2.0)	78.9	(2.6)	
Croatia	53.9	(3.1)	50.1	(2.6)	71.1	(3.2)	52.5	(2.5)	62.1	(2.9)	45.2	(2.2)	
Estonia	48.4	(3.3)	29.0	(2.5)	74.7	(3.0)	48.5	(2.6)	76.8	(2.9)	59.8	(2.4)	
Hong Kong-China	34.2	(3.2)	34.1	(2.7)	47.3	(3.4)	34.0	(2.7)	58.0	(3.4)	36.7	(3.0)	
Indonesia	54.4	(4.5)	74.1	(2.2)	60.1	(4.3)	73.1	(2.4)	41.3	(4.3)	54.9	(2.8)	
Israel	73.1	(3.5)	57.8	(2.6)	84.6	(2.9)	62.6	(2.3)	73.6	(3.5)	51.2	(2.3)	
Jordan	88.8	(1.9)	84.8	(1.7)	90.0	(2.0)	79.5	(1.4)	81.3	(2.9)	71.5	(1.9)	
Kyrgyzstan	82.9	(2.5)	92.6	(1.4)	79.5	(2.7)	86.9	(2.1)	74.7	(3.3)	81.8	(2.3)	
Latvia	54.1	(3.4)	55.1	(3.3)	77.6	(3.3)	53.6	(3.1)	62.9	(3.6)	46.7	(3.4)	
Lithuania	34.8	(3.1)	31.8	(2.0)	62.3	(3.5)	37.7	(2.1)	57.4	(3.5)	35.2	(2.1)	
Macao-China	48.4	(4.1)	42.0	(2.5)	71.4	(3.9)	54.4	(2.9)	56.2	(4.1)	44.1	(3.2)	
Montenegro	72.7	(2.9)	83.4	(1.9)	79.6	(2.8)	73.7	(2.3)	81.6	(3.2)	72.9	(2.2)	
Romania	67.0	(5.7)	80.9	(2.3)	80.5	(4.5)	80.7	(1.9)	68.7	(4.1)	64.0	(2.9)	
Russian Federation	42.0	(3.4)	51.5	(2.4)	72.8	(3.0)	58.1	(2.3)	72.1	(3.4)	53.1	(2.7)	
Serbia	62.7	(2.9)	69.4	(1.8)	69.3	(2.6)	67.0	(2.2)	64.5	(3.2)	60.4	(2.3)	
Slovenia	71.6	(3.2)	72.5	(2.0)	78.7	(3.4)	74.5	(1.8)	66.2	(3.9)	65.0	(2.0)	
Chinese Taipei	28.1	(2.4)	25.4	(1.9)	41.3	(2.5)	29.5	(2.0)	43.9	(2.4)	28.6	(1.6)	
Thailand	90.7	(2.3)	92.1	(1.2)	83.7	(2.7)	81.2	(1.6)	82.8	(3.0)	79.3	(1.8)	
Tunisia	80.3	(2.5)	82.9	(2.1)	64.2	(3.4)	70.1	(2.2)	76.6	(2.5)	70.8	(2.5)	
Uruguay	72.4	(3.6)	70.9	(2.3)	85.8	(2.5)	69.3	(2.0)	76.4	(3.5)	58.4	(2.8)	

[Part 2/2]
Table A2.5a Science self-concept (underlying percentages), by student group

	Percentage of students agreeing or strongly agreeing with following statements												
	Science topics are easy for me				When I am being taught science, I can understand the concepts very well				I can easily understand new ideas in science				
	Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	
OECD	Australia	64.4	(2.0)	26.9	(1.5)	73.7	(2.0)	38.7	(1.6)	73.9	(2.0)	38.9	(1.8)
	Austria	48.5	(3.3)	38.9	(2.6)	76.4	(2.8)	43.6	(2.4)	57.4	(3.6)	40.5	(3.0)
	Belgium	41.6	(2.8)	32.6	(1.8)	68.3	(3.2)	42.9	(2.1)	60.1	(2.5)	38.7	(1.9)
	Canada	75.2	(2.3)	39.6	(1.8)	80.9	(2.2)	48.5	(1.8)	80.2	(2.0)	47.1	(1.8)
	Czech Republic	48.4	(4.0)	41.9	(2.6)	67.3	(3.3)	48.6	(2.6)	64.8	(2.9)	49.4	(2.5)
	Denmark	56.7	(3.9)	26.9	(2.1)	75.1	(3.5)	41.5	(2.3)	68.3	(3.6)	37.1	(2.5)
	Finland	68.9	(2.9)	29.1	(2.1)	67.2	(2.8)	33.0	(2.4)	75.7	(2.9)	38.7	(2.1)
	France	47.5	(4.1)	30.1	(2.1)	65.1	(3.9)	44.0	(1.7)	58.8	(4.3)	39.9	(2.0)
	Germany	56.1	(3.7)	42.9	(2.2)	68.1	(3.0)	49.7	(3.1)	72.3	(2.7)	49.1	(2.1)
	Greece	44.0	(3.6)	36.1	(2.4)	54.2	(3.2)	47.1	(2.3)	50.9	(3.1)	45.2	(2.0)
	Hungary	33.8	(3.8)	40.1	(2.8)	50.7	(3.7)	44.7	(2.2)	47.4	(4.0)	44.0	(2.5)
	Iceland	79.3	(2.6)	29.1	(2.2)	72.7	(2.9)	32.3	(2.0)	75.3	(3.1)	31.6	(2.3)
	Ireland	57.1	(3.5)	19.9	(2.2)	69.8	(3.7)	33.7	(2.5)	63.8	(3.6)	32.6	(2.7)
	Italy	54.1	(2.2)	45.7	(1.6)	68.3	(2.0)	57.0	(1.3)	59.5	(2.4)	50.5	(1.6)
	Japan	16.1	(2.3)	10.0	(1.4)	47.7	(2.9)	26.0	(1.8)	21.4	(2.4)	14.0	(1.4)
	Korea	27.9	(2.7)	9.1	(1.3)	35.8	(2.7)	12.0	(1.4)	34.3	(2.8)	14.8	(1.5)
	Luxembourg	63.9	(3.9)	47.1	(2.0)	70.6	(3.5)	51.3	(1.9)	68.2	(3.6)	49.7	(1.9)
	Mexico	74.5	(2.8)	69.8	(1.9)	75.3	(2.9)	71.6	(1.8)	73.4	(3.1)	72.2	(1.8)
	Netherlands	40.0	(3.5)	27.4	(2.6)	72.1	(3.4)	34.8	(2.9)	52.2	(3.6)	33.0	(2.9)
	New Zealand	55.2	(3.5)	29.2	(1.9)	71.3	(3.0)	43.8	(2.0)	66.8	(3.1)	45.5	(1.9)
	Norway	61.9	(3.9)	31.4	(2.2)	69.8	(4.0)	38.8	(2.4)	70.7	(3.6)	38.9	(2.5)
	Poland	50.8	(2.8)	35.0	(2.2)	71.1	(2.5)	53.5	(2.0)	60.1	(3.0)	42.3	(2.2)
	Portugal	75.7	(3.3)	59.5	(2.4)	80.9	(3.4)	62.7	(2.5)	77.0	(3.2)	61.5	(2.6)
	Slovak Republic	52.2	(3.4)	48.0	(2.5)	83.9	(2.5)	64.4	(2.1)	71.9	(3.3)	56.1	(2.2)
	Spain	67.0	(2.7)	32.8	(1.9)	66.7	(2.7)	37.5	(1.8)	63.5	(2.5)	33.8	(1.6)
	Sweden	65.1	(3.6)	28.7	(2.3)	68.6	(3.5)	37.2	(1.9)	63.0	(4.8)	31.4	(2.3)
	Switzerland	58.2	(2.8)	37.9	(1.7)	66.5	(2.8)	41.3	(1.7)	61.6	(2.8)	44.1	(1.8)
Turkey	58.3	(4.3)	52.9	(2.9)	67.7	(3.6)	57.6	(2.4)	72.4	(3.4)	56.8	(3.1)	
United Kingdom	56.7	(2.8)	30.9	(1.8)	77.2	(2.3)	48.1	(1.8)	76.6	(2.7)	50.0	(1.7)	
United States	64.1	(3.6)	48.1	(3.3)	85.9	(2.9)	57.2	(2.0)	75.0	(3.6)	46.2	(2.5)	
OECD average	55.4	(0.6)	35.9	(0.4)	69.0	(0.6)	44.8	(0.4)	63.9	(0.6)	42.5	(0.4)	
Partners	Argentina	59.1	(4.4)	55.7	(3.0)	67.0	(4.2)	65.9	(2.9)	62.0	(3.8)	58.9	(2.9)
	Azerbaijan	73.8	(3.7)	68.6	(3.7)	82.0	(2.9)	75.0	(3.1)	76.5	(3.0)	72.5	(3.1)
	Brazil	58.3	(4.2)	62.2	(2.9)	65.5	(3.4)	67.4	(2.2)	52.6	(3.3)	63.4	(2.2)
	Bulgaria	63.8	(4.1)	62.8	(3.0)	68.9	(3.9)	65.1	(2.7)	70.8	(4.4)	65.7	(2.9)
	Chile	56.0	(4.1)	38.2	(2.3)	69.9	(3.2)	57.7	(2.3)	69.7	(3.5)	57.8	(2.2)
	Colombia	79.9	(4.1)	75.7	(2.5)	83.9	(3.1)	84.5	(2.2)	89.3	(2.2)	82.5	(2.4)
	Croatia	35.0	(2.7)	31.5	(2.0)	65.2	(2.8)	48.1	(2.5)	61.8	(3.0)	47.3	(2.4)
	Estonia	67.2	(3.1)	43.5	(2.6)	72.4	(3.2)	49.7	(2.4)	76.9	(3.0)	46.9	(2.2)
	Hong Kong-China	42.9	(2.9)	29.2	(2.5)	65.9	(2.7)	46.1	(3.8)	61.1	(2.7)	42.3	(3.5)
	Indonesia	33.8	(4.4)	51.9	(2.9)	64.5	(2.9)	76.8	(2.1)	49.7	(4.5)	68.2	(2.5)
	Israel	70.2	(3.5)	47.6	(2.4)	82.9	(3.1)	60.8	(2.5)	76.7	(3.4)	56.2	(2.5)
	Jordan	73.9	(2.9)	66.2	(2.0)	87.4	(2.2)	76.1	(1.7)	82.9	(2.8)	72.6	(1.7)
	Kyrgyzstan	77.6	(2.8)	83.6	(2.4)	76.8	(2.7)	86.1	(1.9)	69.8	(3.5)	83.7	(1.9)
	Latvia	41.9	(4.0)	39.0	(3.0)	52.1	(5.0)	50.0	(2.8)	63.0	(4.4)	45.3	(2.9)
	Lithuania	32.1	(3.4)	26.5	(2.0)	46.7	(3.6)	32.4	(1.9)	47.4	(3.7)	35.3	(2.1)
	Macao-China	46.4	(4.4)	36.0	(2.6)	58.8	(4.2)	52.6	(3.2)	52.7	(4.0)	45.1	(3.0)
	Montenegro	54.7	(3.2)	62.4	(2.6)	79.2	(2.8)	71.7	(2.2)	68.7	(3.3)	72.5	(2.4)
	Romania	58.4	(5.2)	65.0	(2.5)	64.1	(3.6)	68.5	(2.3)	65.3	(4.0)	67.7	(2.7)
	Russian Federation	60.1	(3.1)	47.9	(3.0)	66.0	(3.2)	59.6	(2.2)	60.1	(3.3)	50.3	(2.1)
	Serbia	57.1	(3.5)	63.4	(2.2)	81.2	(2.5)	66.3	(1.8)	62.0	(3.1)	63.7	(2.0)
	Slovenia	49.3	(3.9)	53.7	(2.2)	70.7	(3.8)	63.5	(2.1)	59.1	(3.9)	53.4	(2.4)
Chinese Taipei	32.9	(3.0)	23.2	(1.6)	55.0	(2.4)	38.9	(1.9)	53.9	(2.7)	35.3	(2.0)	
Thailand	76.1	(3.1)	78.0	(2.1)	84.9	(2.4)	83.0	(1.8)	84.7	(3.2)	84.0	(1.5)	
Tunisia	69.5	(2.9)	69.0	(2.6)	81.7	(2.5)	77.0	(2.4)	72.6	(2.6)	74.3	(2.4)	
Uruguay	69.7	(3.5)	58.8	(2.9)	77.0	(3.7)	63.9	(2.9)	66.4	(4.4)	55.1	(2.6)	



Table A2.5b Science self-concept by student group

	Science self-concept						
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers		
	Mean	S.E.	Mean	S.E.	Dif	S.E.	
OECD	Australia	0.37	(0.03)	-0.56	(0.03)	0.90	(0.05)
	Austria	0.33	(0.06)	-0.26	(0.06)	0.55	(0.09)
	Belgium	0.10	(0.05)	-0.46	(0.04)	0.52	(0.08)
	Canada	0.67	(0.04)	-0.33	(0.03)	0.97	(0.06)
	Czech Republic	0.09	(0.04)	-0.15	(0.04)	0.22	(0.07)
	Denmark	0.26	(0.06)	-0.44	(0.04)	0.68	(0.08)
	Finland	0.41	(0.04)	-0.42	(0.03)	0.79	(0.06)
	France	0.09	(0.07)	-0.37	(0.04)	0.47	(0.09)
	Germany	0.47	(0.06)	-0.06	(0.04)	0.53	(0.08)
	Greece	0.04	(0.05)	-0.20	(0.04)	0.25	(0.07)
	Hungary	-0.26	(0.05)	-0.19	(0.05)	-0.06	(0.08)
	Iceland	0.52	(0.05)	-0.65	(0.05)	1.12	(0.07)
	Ireland	0.23	(0.06)	-0.66	(0.05)	0.86	(0.09)
	Italy	0.24	(0.04)	0.00	(0.02)	0.24	(0.05)
	Japan	-0.62	(0.05)	-1.13	(0.04)	0.51	(0.07)
	Korea	-0.48	(0.05)	-1.13	(0.04)	0.63	(0.06)
	Luxembourg	0.52	(0.07)	-0.07	(0.04)	0.56	(0.08)
	Mexico	0.50	(0.03)	0.52	(0.03)	0.01	(0.05)
	Netherlands	-0.14	(0.05)	-0.63	(0.06)	0.48	(0.08)
	New Zealand	0.19	(0.05)	-0.38	(0.04)	0.55	(0.06)
	Norway	0.41	(0.05)	-0.37	(0.04)	0.74	(0.08)
	Poland	0.27	(0.04)	-0.08	(0.03)	0.35	(0.06)
	Portugal	0.51	(0.05)	0.10	(0.05)	0.39	(0.08)
	Slovak Republic	0.27	(0.05)	-0.08	(0.04)	0.34	(0.07)
	Spain	0.30	(0.04)	-0.41	(0.03)	0.68	(0.06)
	Sweden	0.40	(0.06)	-0.53	(0.04)	0.90	(0.08)
	Switzerland	0.31	(0.05)	-0.30	(0.03)	0.58	(0.06)
	Turkey	0.33	(0.06)	0.05	(0.06)	0.26	(0.09)
United Kingdom	0.32	(0.05)	-0.28	(0.03)	0.56	(0.06)	
United States	0.60	(0.05)	-0.10	(0.08)	0.66	(0.09)	
OECD average	0.24	(0.01)	-0.32	(0.01)	0.54	(0.01)	
Partners	Argentina	0.29	(0.07)	0.24	(0.06)	0.02	(0.09)
	Azerbaijan	0.63	(0.07)	0.58	(0.07)	0.05	(0.09)
	Brazil	0.30	(0.06)	0.37	(0.03)	-0.08	(0.07)
	Bulgaria	0.36	(0.05)	0.28	(0.05)	0.08	(0.08)
	Chile	0.29	(0.05)	-0.03	(0.04)	0.29	(0.07)
	Colombia	0.76	(0.04)	0.72	(0.06)	0.02	(0.08)
	Croatia	0.06	(0.04)	-0.21	(0.05)	0.25	(0.06)
	Estonia	0.37	(0.06)	-0.19	(0.03)	0.53	(0.07)
	Hong Kong-China	-0.02	(0.05)	-0.44	(0.07)	0.39	(0.08)
	Indonesia	-0.06	(0.08)	0.31	(0.05)	-0.37	(0.10)
	Israel	0.69	(0.09)	0.06	(0.05)	0.60	(0.12)
	Jordan	0.82	(0.05)	0.52	(0.04)	0.29	(0.06)
	Kyrgyzstan	0.54	(0.05)	0.90	(0.04)	-0.30	(0.08)
	Latvia	0.07	(0.06)	-0.09	(0.04)	0.14	(0.07)
	Lithuania	-0.13	(0.05)	-0.38	(0.03)	0.26	(0.06)
	Macao-China	0.02	(0.07)	-0.21	(0.04)	0.21	(0.10)
	Montenegro	0.46	(0.06)	0.50	(0.04)	-0.05	(0.08)
	Romania	0.26	(0.05)	0.36	(0.04)	-0.10	(0.08)
	Russian Federation	0.18	(0.04)	0.04	(0.04)	0.13	(0.05)
	Serbia	0.32	(0.05)	0.25	(0.04)	0.07	(0.07)
	Slovenia	0.31	(0.06)	0.21	(0.04)	0.09	(0.08)
	Chinese Taipei	-0.23	(0.04)	-0.58	(0.03)	0.33	(0.06)
	Thailand	0.66	(0.05)	0.71	(0.03)	-0.03	(0.06)
Tunisia	0.59	(0.06)	0.58	(0.05)	0.02	(0.06)	
Uruguay	0.51	(0.06)	0.23	(0.05)	0.25	(0.08)	

Note: Values that are statistically different are indicated in bold.

Table A2.5c Relationship between being resilient and PISA index of science self-concept

	Increased likelihood of being resilient associated with one unit on the PISA index of science self-concept					
	Ratio	S.E.	After accounting for ESCS, gender, immigrant background, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant background, grade, using test language	
			Ratio	S.E.	Ratio	S.E.
OECD						
Australia	2.49	(0.07)	2.56	(0.08)	2.63	(0.08)
Austria	1.57	(0.08)	1.79	(0.08)	1.79	(0.09)
Belgium	1.60	(0.08)	1.85	(0.11)	1.92	(0.12)
Canada	2.10	(0.06)	2.09	(0.06)	2.11	(0.06)
Czech Republic	1.37	(0.12)	1.47	(0.14)	1.56	(0.15)
Denmark	1.99	(0.10)	2.17	(0.11)	2.20	(0.11)
Finland	2.84	(0.11)	2.80	(0.11)	2.80	(0.11)
France	1.59	(0.09)	1.91	(0.11)	2.08	(0.14)
Germany	1.63	(0.08)	1.61	(0.10)	1.70	(0.12)
Greece	1.32	(0.08)	1.37	(0.09)	1.38	(0.09)
Hungary	1.01	(0.09)	1.03	(0.10)	1.17	(0.11)
Iceland	2.54	(0.09)	2.66	(0.09)	2.68	(0.09)
Ireland	2.20	(0.11)	2.31	(0.12)	2.34	(0.13)
Italy	1.39	(0.06)	1.35	(0.07)	1.35	(0.07)
Japan	1.56	(0.08)	1.58	(0.07)	1.59	(0.08)
Korea	2.08	(0.08)	2.07	(0.09)	2.01	(0.09)
Luxembourg	1.65	(0.09)	1.68	(0.10)	1.68	(0.11)
Mexico	1.11	(0.10)	1.18	(0.11)	1.18	(0.11)
Netherlands	1.72	(0.10)	2.00	(0.11)	2.12	(0.13)
New Zealand	1.94	(0.09)	2.02	(0.09)	2.22	(0.09)
Norway	2.15	(0.11)	2.35	(0.13)	2.37	(0.13)
Poland	1.79	(0.10)	1.85	(0.10)	1.85	(0.10)
Portugal	1.70	(0.11)	2.06	(0.16)	2.08	(0.16)
Slovak Republic	1.62	(0.11)	1.66	(0.11)	1.73	(0.12)
Spain	1.96	(0.07)	1.91	(0.07)	1.93	(0.07)
Sweden	2.37	(0.11)	2.50	(0.13)	2.51	(0.13)
Switzerland	1.71	(0.07)	1.80	(0.08)	1.80	(0.08)
Turkey	1.28	(0.08)	1.23	(0.09)	1.29	(0.09)
United Kingdom	2.16	(0.09)	2.16	(0.10)	2.23	(0.10)
United States	1.94	(0.09)	2.02	(0.09)	2.05	(0.09)
OECD average	1.76	(0.02)	1.76	(0.02)	1.90	(0.02)
Partners						
Argentina	1.08	(0.11)	1.17	(0.12)	1.19	(0.13)
Azerbaijan	1.02	(0.12)	1.01	(0.12)	1.02	(0.12)
Brazil	0.93	(0.09)	0.99	(0.10)	1.00	(0.10)
Bulgaria	1.07	(0.11)	1.04	(0.13)	1.20	(0.12)
Chile	1.41	(0.08)	1.39	(0.09)	1.40	(0.09)
Colombia	1.12	(0.13)	1.35	(0.13)	1.35	(0.13)
Croatia	1.30	(0.08)	1.31	(0.09)	1.36	(0.10)
Estonia	2.22	(0.12)	2.31	(0.13)	2.35	(0.13)
Hong Kong-China	1.59	(0.09)	1.85	(0.09)	1.99	(0.10)
Indonesia	0.59	(0.16)	0.66	(0.15)	0.69	(0.14)
Israel	1.55	(0.10)	1.57	(0.10)	1.70	(0.10)
Jordan	1.43	(0.09)	1.46	(0.10)	1.48	(0.10)
Kyrgyzstan	0.68	(0.13)	0.67	(0.13)	0.72	(0.13)
Latvia	1.28	(0.14)	1.29	(0.15)	1.34	(0.16)
Lithuania	1.67	(0.10)	1.81	(0.11)	1.86	(0.11)
Macao-China	1.35	(0.12)	1.48	(0.15)	1.49	(0.15)
Montenegro	1.03	(0.09)	1.05	(0.09)	1.11	(0.08)
Romania	0.93	(0.14)	0.86	(0.15)	0.96	(0.15)
Russian Federation	1.33	(0.09)	1.42	(0.10)	1.44	(0.11)
Serbia	1.12	(0.08)	1.13	(0.08)	1.21	(0.09)
Slovenia	1.19	(0.11)	1.24	(0.11)	1.42	(0.12)
Chinese Taipei	1.48	(0.07)	1.46	(0.07)	1.51	(0.08)
Thailand	0.99	(0.11)	0.99	(0.12)	1.01	(0.12)
Tunisia	1.02	(0.08)	1.25	(0.09)	1.27	(0.10)
Uruguay	1.38	(0.10)	1.53	(0.11)	1.54	(0.11)

Note: Values that are statistically different are indicated in bold.

Table A2.6b Science-related careers by country and student group

	School preparation for science-related careers						
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers		
	Mean	S.E.	Mean	S.E.	Dif	S.E.	
OECD	Australia	0.36	(0.03)	-0.26	(0.02)	0.60	(0.04)
	Austria	0.00	(0.08)	-0.32	(0.06)	0.28	(0.10)
	Belgium	-0.03	(0.04)	-0.32	(0.03)	0.29	(0.06)
	Canada	0.45	(0.04)	0.00	(0.03)	0.43	(0.05)
	Czech Republic	-0.06	(0.07)	-0.14	(0.04)	0.04	(0.10)
	Denmark	0.18	(0.05)	-0.23	(0.04)	0.38	(0.08)
	Finland	0.27	(0.04)	-0.02	(0.04)	0.27	(0.06)
	France	0.36	(0.07)	-0.25	(0.04)	0.60	(0.09)
	Germany	0.25	(0.08)	-0.05	(0.05)	0.31	(0.10)
	Greece	-0.16	(0.06)	-0.07	(0.03)	-0.12	(0.08)
	Hungary	-0.09	(0.06)	0.10	(0.04)	-0.17	(0.07)
	Iceland	0.27	(0.06)	-0.30	(0.04)	0.53	(0.09)
	Ireland	0.35	(0.05)	-0.15	(0.04)	0.47	(0.07)
	Italy	-0.09	(0.04)	-0.11	(0.03)	0.01	(0.05)
	Japan	-0.56	(0.07)	-0.66	(0.04)	0.14	(0.09)
	Korea	-0.32	(0.05)	-0.24	(0.03)	-0.06	(0.07)
	Luxembourg	-0.11	(0.07)	-0.06	(0.04)	-0.09	(0.09)
	Mexico	0.45	(0.05)	0.57	(0.03)	-0.11	(0.07)
	Netherlands	-0.07	(0.05)	-0.46	(0.04)	0.41	(0.07)
	New Zealand	0.34	(0.05)	-0.10	(0.04)	0.40	(0.07)
	Norway	-0.23	(0.05)	-0.51	(0.06)	0.29	(0.08)
	Poland	0.00	(0.05)	0.18	(0.04)	-0.20	(0.06)
	Portugal	0.22	(0.05)	0.14	(0.03)	0.09	(0.08)
	Slovak Republic	-0.27	(0.06)	-0.07	(0.06)	-0.19	(0.09)
	Spain	0.15	(0.04)	-0.06	(0.03)	0.19	(0.05)
	Sweden	0.02	(0.06)	-0.31	(0.04)	0.32	(0.09)
Switzerland	0.22	(0.06)	-0.19	(0.03)	0.41	(0.07)	
Turkey	-0.06	(0.08)	-0.01	(0.05)	-0.01	(0.09)	
United Kingdom	0.31	(0.05)	-0.12	(0.03)	0.40	(0.05)	
United States	0.37	(0.06)	-0.03	(0.03)	0.42	(0.07)	
OECD average	0.08	(0.01)	-0.14	(0.01)	0.21	(0.01)	
Partners	Argentina	0.09	(0.07)	0.24	(0.04)	-0.19	(0.10)
	Azerbaijan	0.67	(0.04)	0.53	(0.05)	0.14	(0.07)
	Brazil	-0.10	(0.07)	0.29	(0.03)	-0.37	(0.08)
	Bulgaria	0.39	(0.07)	0.42	(0.05)	-0.04	(0.09)
	Chile	-0.15	(0.08)	0.27	(0.04)	-0.39	(0.10)
	Colombia	0.32	(0.09)	0.73	(0.04)	-0.40	(0.09)
	Croatia	0.17	(0.06)	0.23	(0.04)	-0.05	(0.08)
	Estonia	0.19	(0.05)	0.25	(0.04)	-0.05	(0.07)
	Hong Kong-China	0.06	(0.06)	-0.23	(0.05)	0.26	(0.08)
	Indonesia	0.30	(0.06)	0.27	(0.03)	0.02	(0.06)
	Israel	0.04	(0.09)	-0.08	(0.05)	0.08	(0.11)
	Jordan	0.54	(0.06)	0.39	(0.04)	0.16	(0.09)
	Kyrgyzstan	0.59	(0.06)	0.67	(0.04)	-0.06	(0.09)
	Latvia	0.28	(0.05)	0.26	(0.04)	0.01	(0.06)
	Lithuania	0.52	(0.06)	0.33	(0.03)	0.18	(0.07)
	Macao-China	-0.34	(0.05)	-0.09	(0.03)	-0.24	(0.07)
	Montenegro	0.14	(0.06)	0.55	(0.04)	-0.38	(0.10)
	Romania	0.27	(0.10)	0.32	(0.04)	-0.03	(0.12)
	Russian Federation	0.29	(0.05)	0.26	(0.03)	0.00	(0.06)
	Serbia	0.09	(0.06)	0.34	(0.04)	-0.25	(0.08)
	Slovenia	0.20	(0.07)	0.03	(0.03)	0.10	(0.08)
	Chinese Taipei	0.18	(0.04)	0.20	(0.03)	-0.03	(0.06)
	Thailand	0.72	(0.05)	0.52	(0.03)	0.19	(0.06)
	Tunisia	0.61	(0.06)	0.53	(0.05)	0.10	(0.08)
	Uruguay	0.06	(0.06)	0.08	(0.05)	0.02	(0.10)

Note: Values that are statistically different are indicated in bold.



Table A2.6c Relationship between being resilient and PISA index of school preparation for science career

		Increased likelihood of being resilient associated with one unit on the PISA index of school preparation for science career					
		Ratio	S.E.	After accounting for ESCS, gender, immigrant, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant, grade, using test language	
				Ratio	S.E.	Ratio	S.E.
OECD	Australia	1.74	(0.04)	1.76	(0.05)	1.73	(0.05)
	Austria	1.28	(0.07)	1.42	(0.08)	1.38	(0.08)
	Belgium	1.29	(0.06)	1.40	(0.07)	1.30	(0.08)
	Canada	1.49	(0.06)	1.45	(0.06)	1.45	(0.06)
	Czech Republic	1.14	(0.12)	1.24	(0.13)	1.27	(0.13)
	Denmark	1.57	(0.08)	1.71	(0.09)	1.69	(0.09)
	Finland	1.31	(0.07)	1.32	(0.07)	1.32	(0.07)
	France	1.72	(0.09)	1.79	(0.11)	1.71	(0.12)
	Germany	1.25	(0.08)	1.18	(0.08)	1.17	(0.10)
	Greece	0.89	(0.09)	0.93	(0.10)	0.96	(0.10)
	Hungary	0.85	(0.09)	0.89	(0.09)	0.89	(0.11)
	Iceland	1.56	(0.09)	1.54	(0.09)	1.54	(0.09)
	Ireland	1.45	(0.07)	1.46	(0.08)	1.43	(0.08)
	Italy	1.07	(0.06)	1.08	(0.06)	1.00	(0.06)
	Japan	1.14	(0.08)	1.13	(0.09)	1.10	(0.09)
	Korea	0.97	(0.08)	0.96	(0.08)	0.93	(0.09)
	Luxembourg	0.94	(0.08)	0.98	(0.09)	0.99	(0.10)
	Mexico	0.93	(0.07)	0.94	(0.08)	0.94	(0.07)
	Netherlands	1.63	(0.11)	1.82	(0.12)	1.63	(0.14)
	New Zealand	1.53	(0.09)	1.60	(0.09)	1.60	(0.09)
	Norway	1.30	(0.08)	1.30	(0.08)	1.30	(0.08)
Poland	0.79	(0.08)	0.81	(0.08)	0.80	(0.08)	
Portugal	1.17	(0.11)	1.14	(0.13)	1.14	(0.13)	
Slovak Republic	0.85	(0.10)	0.91	(0.10)	0.88	(0.10)	
Spain	1.22	(0.06)	1.25	(0.08)	1.26	(0.08)	
Sweden	1.28	(0.09)	1.32	(0.10)	1.32	(0.10)	
Switzerland	1.42	(0.07)	1.60	(0.07)	1.60	(0.07)	
Turkey	1.05	(0.07)	1.02	(0.08)	1.01	(0.08)	
United Kingdom	1.49	(0.06)	1.49	(0.07)	1.48	(0.07)	
United States	1.50	(0.08)	1.46	(0.09)	1.47	(0.09)	
OECD average	1.23	(0.01)	1.26	(0.02)	1.25	(0.02)	
Partners	Argentina	0.86	(0.10)	0.89	(0.11)	0.91	(0.12)
	Azerbaijan	1.15	(0.09)	1.13	(0.09)	1.13	(0.09)
	Brazil	0.73	(0.08)	0.82	(0.09)	0.82	(0.09)
	Bulgaria	0.95	(0.10)	0.92	(0.10)	0.97	(0.10)
	Chile	0.73	(0.10)	0.76	(0.10)	0.74	(0.10)
	Colombia	0.70	(0.10)	0.78	(0.10)	0.78	(0.10)
	Croatia	0.96	(0.09)	0.97	(0.09)	1.00	(0.10)
	Estonia	0.94	(0.10)	0.92	(0.11)	0.92	(0.11)
	Hong Kong-China	1.38	(0.09)	1.54	(0.10)	1.52	(0.11)
	Indonesia	1.01	(0.10)	1.08	(0.10)	1.07	(0.10)
	Israel	1.04	(0.09)	1.05	(0.09)	1.10	(0.09)
	Jordan	1.10	(0.09)	1.04	(0.10)	1.05	(0.10)
	Kyrgyzstan	0.91	(0.10)	0.91	(0.10)	0.95	(0.10)
	Latvia	1.07	(0.10)	1.06	(0.11)	1.11	(0.11)
	Lithuania	1.22	(0.10)	1.20	(0.10)	1.20	(0.10)
	Macao-China	0.79	(0.09)	0.84	(0.10)	0.85	(0.10)
	Montenegro	0.73	(0.09)	0.76	(0.10)	0.79	(0.10)
	Romania	0.93	(0.16)	0.93	(0.17)	0.93	(0.17)
	Russian Federation	1.01	(0.08)	1.02	(0.08)	1.02	(0.08)
	Serbia	0.85	(0.09)	0.84	(0.09)	0.86	(0.10)
	Slovenia	1.15	(0.11)	1.19	(0.11)	1.14	(0.12)
Chinese Taipei	0.94	(0.07)	0.92	(0.07)	0.93	(0.07)	
Thailand	1.31	(0.09)	1.26	(0.09)	1.28	(0.09)	
Tunisia	1.06	(0.08)	1.04	(0.09)	1.05	(0.09)	
Uruguay	1.04	(0.12)	1.14	(0.13)	1.14	(0.13)	

Note: Values that are statistically different are indicated in bold.



Table A2.7b Students' information on science-related careers by student group

	Students' information on science-related careers					
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers	
	Mean	S.E.	Mean	S.E.	Dif	S.E.
OECD						
Australia	0.21	(0.04)	-0.11	(0.03)	0.31	(0.04)
Austria	-0.17	(0.05)	-0.13	(0.05)	-0.06	(0.08)
Belgium	-0.30	(0.04)	-0.23	(0.04)	-0.05	(0.06)
Canada	0.22	(0.04)	0.09	(0.04)	0.13	(0.06)
Czech Republic	-0.22	(0.06)	-0.10	(0.05)	-0.09	(0.10)
Denmark	-0.08	(0.06)	-0.18	(0.04)	0.08	(0.08)
Finland	0.12	(0.04)	0.04	(0.03)	0.07	(0.07)
France	-0.01	(0.06)	-0.15	(0.04)	0.15	(0.08)
Germany	-0.02	(0.06)	-0.19	(0.04)	0.17	(0.08)
Greece	0.15	(0.07)	0.13	(0.05)	0.04	(0.09)
Hungary	-0.28	(0.06)	-0.03	(0.04)	-0.25	(0.09)
Iceland	0.04	(0.05)	-0.37	(0.04)	0.40	(0.08)
Ireland	-0.08	(0.07)	-0.21	(0.05)	0.16	(0.08)
Italy	-0.03	(0.03)	-0.01	(0.03)	-0.01	(0.04)
Japan	-0.43	(0.04)	-0.44	(0.04)	0.02	(0.06)
Korea	-0.43	(0.04)	-0.52	(0.03)	0.09	(0.06)
Luxembourg	-0.24	(0.07)	-0.14	(0.04)	-0.09	(0.11)
Mexico	-0.68	(0.06)	-0.37	(0.07)	-0.30	(0.09)
Netherlands	-0.35	(0.05)	-0.45	(0.07)	0.12	(0.08)
New Zealand	0.12	(0.07)	0.07	(0.05)	0.04	(0.10)
Norway	-0.17	(0.06)	-0.18	(0.05)	-0.01	(0.09)
Poland	0.10	(0.05)	0.25	(0.03)	-0.13	(0.07)
Portugal	0.32	(0.06)	0.23	(0.04)	0.08	(0.07)
Slovak Republic	-0.16	(0.06)	-0.03	(0.05)	-0.13	(0.09)
Spain	0.03	(0.05)	-0.25	(0.04)	0.24	(0.06)
Sweden	-0.18	(0.07)	-0.37	(0.05)	0.17	(0.08)
Switzerland	0.07	(0.04)	-0.07	(0.03)	0.15	(0.05)
Turkey	0.44	(0.06)	-0.14	(0.08)	0.55	(0.10)
United Kingdom	-0.17	(0.05)	-0.08	(0.04)	-0.11	(0.07)
United States	0.23	(0.05)	0.27	(0.06)	-0.03	(0.09)
OECD average	-0.07	(0.01)	-0.12	(0.01)	0.06	(0.01)
Partners						
Argentina	-0.77	(0.08)	-0.58	(0.08)	-0.18	(0.11)
Azerbaijan	0.18	(0.07)	0.30	(0.06)	-0.07	(0.10)
Brazil	-0.12	(0.08)	0.38	(0.04)	-0.47	(0.09)
Bulgaria	0.01	(0.07)	0.26	(0.06)	-0.22	(0.10)
Chile	0.05	(0.07)	0.13	(0.05)	-0.08	(0.09)
Colombia	-0.19	(0.07)	-0.03	(0.06)	-0.18	(0.11)
Croatia	0.01	(0.05)	-0.17	(0.03)	0.16	(0.06)
Estonia	-0.27	(0.05)	0.04	(0.04)	-0.31	(0.07)
Hong Kong-China	0.14	(0.03)	0.13	(0.03)	-0.01	(0.06)
Indonesia	-0.10	(0.07)	0.21	(0.04)	-0.31	(0.09)
Israel	0.23	(0.08)	0.20	(0.05)	0.01	(0.09)
Jordan	0.30	(0.06)	0.33	(0.04)	-0.05	(0.08)
Kyrgyzstan	0.16	(0.07)	0.21	(0.06)	-0.01	(0.11)
Latvia	-0.15	(0.05)	0.13	(0.05)	-0.26	(0.09)
Lithuania	0.11	(0.06)	0.06	(0.03)	0.07	(0.07)
Macao-China	-0.32	(0.04)	-0.25	(0.04)	-0.08	(0.08)
Montenegro	-0.36	(0.06)	0.04	(0.05)	-0.36	(0.09)
Romania	-0.32	(0.04)	0.12	(0.06)	-0.44	(0.08)
Russian Federation	0.26	(0.04)	0.37	(0.04)	-0.13	(0.06)
Serbia	-0.12	(0.05)	0.13	(0.04)	-0.24	(0.07)
Slovenia	-0.08	(0.05)	0.06	(0.03)	-0.13	(0.07)
Chinese Taipei	0.06	(0.04)	-0.18	(0.03)	0.23	(0.05)
Thailand	0.15	(0.05)	0.19	(0.03)	-0.05	(0.07)
Tunisia	0.21	(0.08)	0.41	(0.04)	-0.14	(0.09)
Uruguay	-0.45	(0.07)	-0.30	(0.07)	-0.17	(0.12)

Note: Values that are statistically different are indicated in bold.



Table A2.7c Relationship between being resilient and PISA index of student information on science careers

	Increased likelihood of being resilient associated with one unit on the PISA index of student information on science careers					
	Ratio	S.E.	After accounting for ESCS, gender, immigrant, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant, grade, using test language	
			Ratio	S.E.	Ratio	S.E.
OECD						
Australia	1.27	(0.04)	1.26	(0.04)	1.26	(0.04)
Austria	0.98	(0.08)	1.07	(0.09)	1.15	(0.10)
Belgium	0.96	(0.05)	1.07	(0.06)	1.11	(0.07)
Canada	1.11	(0.06)	1.06	(0.06)	1.07	(0.06)
Czech Republic	0.93	(0.12)	0.93	(0.13)	0.92	(0.13)
Denmark	1.15	(0.09)	1.24	(0.09)	1.24	(0.09)
Finland	1.09	(0.09)	1.07	(0.09)	1.07	(0.09)
France	1.15	(0.06)	1.09	(0.08)	1.02	(0.09)
Germany	1.15	(0.09)	1.02	(0.10)	1.04	(0.12)
Greece	1.03	(0.09)	1.00	(0.09)	0.98	(0.09)
Hungary	0.74	(0.11)	0.75	(0.13)	0.80	(0.15)
Iceland	1.44	(0.08)	1.46	(0.10)	1.46	(0.10)
Ireland	1.11	(0.07)	1.06	(0.07)	1.06	(0.08)
Italy	0.98	(0.05)	0.93	(0.05)	0.90	(0.06)
Japan	1.05	(0.06)	1.04	(0.07)	1.02	(0.07)
Korea	1.15	(0.08)	1.15	(0.08)	1.12	(0.09)
Luxembourg	0.93	(0.10)	0.92	(0.13)	0.91	(0.13)
Mexico	0.90	(0.05)	0.96	(0.05)	0.96	(0.05)
Netherlands	1.14	(0.07)	1.24	(0.06)	1.19	(0.08)
New Zealand	1.08	(0.10)	1.09	(0.11)	1.11	(0.11)
Norway	1.02	(0.08)	1.02	(0.08)	1.03	(0.08)
Poland	0.87	(0.08)	0.88	(0.08)	0.88	(0.09)
Portugal	1.10	(0.08)	0.96	(0.12)	0.97	(0.11)
Slovak Republic	0.93	(0.09)	0.95	(0.09)	0.94	(0.10)
Spain	1.27	(0.06)	1.17	(0.07)	1.18	(0.07)
Sweden	1.11	(0.07)	1.16	(0.08)	1.15	(0.08)
Switzerland	1.19	(0.06)	1.28	(0.08)	1.33	(0.09)
Turkey	1.55	(0.09)	1.47	(0.09)	1.39	(0.10)
United Kingdom	0.93	(0.07)	0.92	(0.07)	0.92	(0.07)
United States	1.00	(0.07)	1.00	(0.08)	1.01	(0.08)
OECD average	1.07	(0.01)	1.00	(0.00)	1.06	(0.02)
Partners						
Argentina	0.92	(0.07)	0.93	(0.08)	0.93	(0.08)
Azerbaijan	0.96	(0.09)	0.94	(0.09)	0.94	(0.09)
Brazil	0.73	(0.08)	0.73	(0.09)	0.73	(0.09)
Bulgaria	0.88	(0.08)	0.85	(0.09)	0.87	(0.09)
Chile	0.98	(0.09)	1.04	(0.09)	1.04	(0.09)
Colombia	0.89	(0.12)	0.95	(0.13)	0.95	(0.13)
Croatia	1.20	(0.07)	1.17	(0.07)	1.21	(0.08)
Estonia	0.74	(0.08)	0.73	(0.09)	0.73	(0.09)
Hong Kong-China	1.00	(0.09)	1.00	(0.10)	1.00	(0.11)
Indonesia	0.75	(0.09)	0.76	(0.08)	0.75	(0.09)
Israel	1.02	(0.06)	1.03	(0.06)	1.06	(0.06)
Jordan	0.95	(0.08)	0.95	(0.09)	0.96	(0.09)
Kyrgyzstan	1.02	(0.09)	1.00	(0.09)	1.01	(0.09)
Latvia	0.75	(0.13)	0.69	(0.15)	0.72	(0.15)
Lithuania	1.09	(0.10)	1.01	(0.10)	1.03	(0.10)
Macao-China	0.96	(0.08)	0.89	(0.09)	0.87	(0.09)
Montenegro	0.80	(0.07)	0.78	(0.07)	0.81	(0.08)
Romania	0.67	(0.10)	0.66	(0.11)	0.71	(0.11)
Russian Federation	0.92	(0.08)	0.95	(0.08)	0.95	(0.08)
Serbia	0.85	(0.08)	0.83	(0.08)	0.86	(0.09)
Slovenia	0.91	(0.07)	0.95	(0.08)	1.00	(0.10)
Chinese Taipei	1.28	(0.07)	1.24	(0.07)	1.30	(0.08)
Thailand	1.00	(0.11)	0.95	(0.12)	0.97	(0.13)
Tunisia	0.90	(0.08)	0.94	(0.08)	0.96	(0.08)
Uruguay	0.92	(0.07)	0.97	(0.09)	0.97	(0.10)

Note: Values that are statistically different are indicated in bold.



Table A2.8a Share of students who took general science compulsory courses this or last year, by student group

	Share of students who took general science compulsory courses this or last year					
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers	
	%	S.E.	%	S.E.	Dif	S.E.
OECD						
Australia	93.0	(0.9)	65.0	(1.5)	28.0	(1.7)
Austria	a	a	a	a	a	a
Belgium	54.7	(3.4)	58.7	(2.7)	-4.0	(4.1)
Canada	96.7	(0.8)	79.6	(1.2)	17.1	(1.3)
Czech Republic	59.8	(4.1)	60.1	(2.5)	-0.3	(5.2)
Denmark	15.4	(2.8)	15.6	(1.4)	-0.2	(3.3)
Finland	91.3	(1.7)	81.3	(1.8)	10.0	(2.4)
France	a	a	a	a	a	a
Germany	80.9	(3.4)	56.7	(2.0)	24.1	(3.8)
Greece	a	a	a	a	a	a
Hungary	a	a	a	a	a	a
Iceland	97.1	(1.2)	86.6	(1.4)	10.5	(1.8)
Ireland	70.9	(4.2)	58.3	(3.4)	12.6	(4.2)
Italy	72.4	(2.6)	83.8	(1.3)	-11.4	(3.0)
Japan	a	a	a	a	a	a
Korea	99.2	(0.6)	90.8	(1.4)	8.4	(1.5)
Luxembourg	a	a	a	a	a	a
Mexico	38.9	(3.1)	38.8	(2.4)	0.1	(4.4)
Netherlands	82.0	(2.8)	58.7	(2.9)	23.3	(3.6)
New Zealand	98.3	(0.9)	84.4	(1.5)	13.9	(1.6)
Norway	a	a	a	a	a	a
Poland	a	a	a	a	a	a
Portugal	98.5	(1.0)	89.6	(1.8)	8.8	(2.1)
Slovak Republic	a	a	a	a	a	a
Spain	83.6	(1.9)	91.8	(1.1)	-8.3	(2.2)
Sweden	69.0	(4.0)	44.8	(2.1)	24.2	(4.3)
Switzerland	91.2	(1.6)	69.6	(1.9)	21.5	(2.3)
Turkey	80.3	(3.2)	66.5	(2.9)	13.8	(4.3)
United Kingdom	80.4	(3.6)	55.1	(2.0)	25.3	(4.1)
United States	87.9	(2.3)	67.5	(2.9)	20.4	(3.3)
OECD average	80.1	(0.5)	69.7	(0.4)	10.3	(0.7)
Partners						
Argentina	18.5	(3.4)	23.1	(2.1)	-4.5	(3.8)
Azerbaijan	a	a	a	a	a	a
Brazil	9.4	(2.0)	14.0	(2.4)	-4.6	(3.1)
Bulgaria	a	a	a	a	a	a
Chile	67.9	(3.1)	50.7	(2.1)	17.2	(3.6)
Colombia	13.5	(3.6)	20.8	(3.0)	-7.3	(5.3)
Croatia	a	a	a	a	a	a
Estonia	55.6	(3.7)	44.4	(2.8)	11.2	(5.2)
Hong Kong-China	61.3	(3.8)	52.1	(2.5)	9.2	(4.1)
Indonesia	91.4	(1.9)	87.9	(1.8)	3.5	(2.7)
Israel	72.2	(3.1)	59.5	(2.7)	12.7	(3.6)
Jordan	55.6	(4.5)	48.7	(2.6)	6.9	(4.7)
Kyrgyzstan	66.2	(3.2)	67.2	(2.6)	-1.0	(4.4)
Latvia	86.8	(3.2)	68.9	(2.3)	18.0	(4.3)
Lithuania	a	a	a	a	a	a
Macao-China	53.7	(2.9)	25.8	(2.0)	27.8	(3.5)
Montenegro	88.5	(2.1)	74.8	(2.2)	13.8	(3.2)
Romania	42.6	(5.0)	44.1	(2.8)	-1.6	(5.2)
Russian Federation	3.4	(1.3)	2.4	(1.0)	1.0	(1.3)
Serbia	a	a	a	a	a	a
Slovenia	61.0	(3.7)	74.9	(2.2)	-13.9	(3.9)
Chinese Taipei	51.0	(3.1)	30.2	(2.3)	20.8	(3.7)
Thailand	96.8	(1.1)	82.8	(2.3)	14.0	(2.6)
Tunisia	72.8	(2.6)	66.9	(2.3)	5.8	(3.6)
Uruguay	50.8	(4.2)	35.3	(2.0)	15.5	(4.9)

Note: Values that are statistically different are indicated in bold.

Table A2.8b Relationship between being resilient and taking general science compulsory courses

	Increased likelihood of being resilient associated with taking general science compulsory courses					
	Ratio	S.E.	After accounting for ESCS, gender, immigrant, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant, grade, using test language	
			Ratio	S.E.	Ratio	S.E.
OECD						
Australia	4.58	(0.15)	4.44	(0.15)	4.15	(0.15)
Austria	a	a	a	a	a	a
Belgium	0.88	(0.15)	1.23	(0.14)	1.12	(0.16)
Canada	5.38	(0.25)	4.26	(0.26)	4.12	(0.26)
Czech Republic	0.86	(0.19)	0.78	(0.20)	0.78	(0.21)
Denmark	1.10	(0.26)	1.14	(0.27)	1.21	(0.28)
Finland	1.86	(0.24)	1.80	(0.24)	1.80	(0.24)
France	a	a	a	a	a	a
Germany	2.59	(0.23)	2.25	(0.22)	1.86	(0.23)
Greece	a	a	a	a	a	a
Hungary	a	a	a	a	a	a
Iceland	3.88	(0.44)	3.50	(0.45)	3.45	(0.45)
Ireland	1.55	(0.19)	1.56	(0.19)	1.58	(0.19)
Italy	0.57	(0.15)	0.65	(0.14)	1.11	(0.15)
Japan	a	a	a	a	a	a
Korea	8.71	(0.77)	8.33	(0.78)	8.35	(0.77)
Luxembourg	a	a	a	a	a	a
Mexico	1.11	(0.16)	1.29	(0.18)	1.33	(0.18)
Netherlands	2.50	(0.19)	2.88	(0.21)	1.98	(0.22)
New Zealand	7.22	(0.57)	6.67	(0.56)	6.11	(0.56)
Norway	a	a	a	a	a	a
Poland	a	a	a	a	a	a
Portugal	5.53	(0.86)	1.71	(0.98)	1.71	(0.99)
Slovak Republic	a	a	a	a	a	a
Spain	0.51	(0.17)	0.72	(0.19)	0.71	(0.18)
Sweden	2.25	(0.20)	2.19	(0.20)	2.15	(0.20)
Switzerland	3.22	(0.20)	2.57	(0.23)	2.48	(0.23)
Turkey	1.75	(0.23)	1.63	(0.25)	1.61	(0.26)
United Kingdom	2.32	(0.24)	2.20	(0.24)	2.17	(0.24)
United States	2.55	(0.23)	1.94	(0.22)	1.90	(0.22)
OECD average	2.04	(0.07)	1.91	(0.07)	1.88	(0.07)
Partners						
Argentina	0.87	(0.26)	0.89	(0.28)	0.93	(0.27)
Azerbaijan	a	a	a	a	a	a
Brazil	0.95	(0.28)	1.14	(0.30)	1.15	(0.31)
Bulgaria	a	a	a	a	a	a
Chile	2.04	(0.15)	2.30	(0.17)	2.27	(0.18)
Colombia	0.70	(0.34)	0.88	(0.36)	0.88	(0.36)
Croatia	a	a	a	a	a	a
Estonia	1.54	(0.18)	1.52	(0.18)	1.51	(0.18)
Hong Kong-China	1.22	(0.18)	1.16	(0.19)	1.20	(0.19)
Indonesia	1.47	(0.28)	1.64	(0.27)	1.55	(0.27)
Israel	1.75	(0.16)	1.68	(0.17)	1.55	(0.18)
Jordan	1.26	(0.17)	1.26	(0.17)	1.27	(0.17)
Kyrgyzstan	1.02	(0.18)	1.03	(0.18)	1.09	(0.18)
Latvia	2.40	(0.30)	1.97	(0.32)	1.97	(0.33)
Lithuania	a	a	a	a	a	a
Macao-China	2.72	(0.14)	2.23	(0.15)	2.22	(0.15)
Montenegro	2.24	(0.24)	2.20	(0.24)	2.18	(0.25)
Romania	0.99	(0.25)	0.98	(0.28)	1.06	(0.29)
Russian Federation	1.42	(0.34)	1.56	(0.36)	1.51	(0.37)
Serbia	a	a	a	a	a	a
Slovenia	0.59	(0.17)	0.55	(0.17)	0.62	(0.20)
Chinese Taipei	2.03	(0.14)	2.12	(0.16)	1.56	(0.16)
Thailand	4.89	(0.39)	3.89	(0.40)	3.77	(0.41)
Tunisia	1.30	(0.15)	1.05	(0.18)	1.08	(0.18)
Uruguay	1.70	(0.19)	1.55	(0.21)	1.53	(0.21)

Note: Values that are statistically different are indicated in bold.



Table A2.9a Number of attended compulsory courses in general science, physics, biology and chemistry, by student group

	Number of attended compulsory courses in general science, physics, biology and chemistry					
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers	
	Mean	S.E.	Mean	S.E.	Dif	S.E.
OECD						
Australia	4.20	(0.12)	2.66	(0.08)	1.54	(0.14)
Austria	3.68	(0.15)	3.51	(0.14)	0.17	(0.20)
Belgium	5.50	(0.19)	1.74	(0.08)	3.76	(0.21)
Canada	3.72	(0.11)	3.36	(0.09)	0.35	(0.14)
Czech Republic	6.88	(0.14)	5.50	(0.20)	1.38	(0.24)
Denmark	5.97	(0.12)	4.78	(0.13)	1.19	(0.18)
Finland	7.50	(0.11)	6.76	(0.11)	0.74	(0.13)
France	5.90	(0.09)	4.72	(0.08)	1.18	(0.11)
Germany	7.11	(0.15)	4.94	(0.15)	2.17	(0.22)
Greece	4.88	(0.10)	4.13	(0.12)	0.75	(0.16)
Hungary	5.10	(0.12)	5.18	(0.10)	-0.08	(0.15)
Iceland	7.38	(0.18)	6.03	(0.16)	1.34	(0.23)
Ireland	1.78	(0.07)	1.20	(0.05)	0.57	(0.09)
Italy	4.14	(0.13)	3.68	(0.09)	0.46	(0.17)
Japan	3.56	(0.10)	3.18	(0.09)	0.38	(0.12)
Korea	4.03	(0.16)	4.24	(0.16)	-0.21	(0.21)
Luxembourg	4.26	(0.15)	4.25	(0.10)	0.00	(0.17)
Mexico	3.86	(0.18)	3.64	(0.15)	0.22	(0.23)
Netherlands	5.75	(0.19)	4.53	(0.24)	1.22	(0.28)
New Zealand	4.33	(0.26)	3.98	(0.14)	0.35	(0.27)
Norway	a	a	a	a	a	a
Poland	a	a	a	a	a	a
Portugal	5.04	(0.21)	4.82	(0.18)	0.21	(0.25)
Slovak Republic	5.36	(0.11)	4.54	(0.14)	0.83	(0.18)
Spain	7.00	(0.16)	5.51	(0.12)	1.49	(0.19)
Sweden	5.59	(0.27)	3.47	(0.15)	2.12	(0.30)
Switzerland	5.74	(0.13)	4.14	(0.09)	1.60	(0.15)
Turkey	5.37	(0.23)	4.49	(0.25)	0.88	(0.32)
United Kingdom	6.11	(0.25)	3.72	(0.13)	2.40	(0.27)
United States	3.65	(0.11)	3.76	(0.10)	-0.12	(0.15)
OECD average	5.12	(0.03)	4.16	(0.03)	0.96	(0.04)
Partners						
Argentina	1.55	(0.28)	1.75	(0.15)	-0.20	(0.31)
Azerbaijan	5.20	(0.25)	3.71	(0.20)	1.49	(0.33)
Brazil	0.70	(0.13)	0.87	(0.10)	-0.17	(0.16)
Bulgaria	5.73	(0.12)	5.25	(0.18)	0.48	(0.22)
Chile	6.27	(0.21)	4.19	(0.15)	2.08	(0.26)
Colombia	1.41	(0.24)	1.84	(0.19)	-0.43	(0.31)
Croatia	4.90	(0.13)	3.46	(0.09)	1.44	(0.15)
Estonia	5.94	(0.24)	4.74	(0.19)	1.19	(0.35)
Hong Kong-China	4.51	(0.17)	2.43	(0.15)	2.08	(0.21)
Indonesia	7.69	(0.24)	6.94	(0.16)	0.75	(0.28)
Israel	4.88	(0.27)	3.56	(0.16)	1.32	(0.30)
Jordan	6.52	(0.21)	5.03	(0.17)	1.49	(0.26)
Kyrgyzstan	6.47	(0.27)	5.22	(0.26)	1.25	(0.39)
Latvia	7.78	(0.19)	7.01	(0.14)	0.77	(0.23)
Lithuania	5.88	(0.11)	4.05	(0.13)	1.83	(0.18)
Macao-China	4.81	(0.20)	2.74	(0.17)	2.06	(0.28)
Montenegro	7.47	(0.13)	6.59	(0.17)	0.88	(0.22)
Romania	5.17	(0.48)	4.30	(0.19)	0.86	(0.45)
Russian Federation	6.06	(0.03)	5.96	(0.03)	0.11	(0.04)
Serbia	5.19	(0.11)	4.46	(0.09)	0.73	(0.13)
Slovenia	6.95	(0.15)	5.71	(0.08)	1.24	(0.17)
Chinese Taipei	5.29	(0.17)	4.26	(0.11)	1.03	(0.19)
Thailand	6.49	(0.22)	6.34	(0.20)	0.15	(0.32)
Tunisia	5.71	(0.20)	5.01	(0.19)	0.70	(0.27)
Uruguay	4.12	(0.26)	2.12	(0.13)	2.00	(0.29)

Note: Values that are statistically different are indicated in bold.

Table A2.9b Relationship between being resilient and number of attended compulsory courses in general science, physics, biology and chemistry

	Increased likelihood of being resilient associate with one additional compulsory courses in general science, physics, biology and chemistry					
	Ratio	S.E.	After accounting for ESCS, gender, immigrant, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant, grade, using test language	
			Ratio	S.E.	Ratio	S.E.
OECD						
Australia	1.14	(0.01)	1.15	(0.01)	1.14	(0.01)
Austria	1.05	(0.04)	1.12	(0.04)	1.04	(0.05)
Belgium	1.34	(0.02)	1.25	(0.02)	1.18	(0.02)
Canada	1.04	(0.02)	1.02	(0.02)	1.02	(0.02)
Czech Republic	1.14	(0.02)	1.15	(0.03)	1.09	(0.03)
Denmark	1.15	(0.03)	1.15	(0.03)	1.16	(0.03)
Finland	1.15	(0.03)	1.14	(0.03)	1.14	(0.03)
France	1.35	(0.05)	1.56	(0.09)	1.44	(0.09)
Germany	1.22	(0.03)	1.15	(0.03)	1.11	(0.04)
Greece	1.11	(0.03)	1.09	(0.03)	1.08	(0.03)
Hungary	0.99	(0.04)	1.01	(0.05)	1.06	(0.07)
Iceland	1.10	(0.02)	1.09	(0.03)	1.09	(0.03)
Ireland	1.42	(0.06)	1.35	(0.06)	1.35	(0.07)
Italy	1.07	(0.03)	1.04	(0.03)	1.13	(0.03)
Japan	1.09	(0.04)	1.08	(0.04)	1.02	(0.05)
Korea	0.95	(0.03)	0.95	(0.03)	0.92	(0.04)
Luxembourg	0.99	(0.02)	0.96	(0.03)	1.00	(0.04)
Mexico	1.03	(0.02)	1.06	(0.02)	1.06	(0.02)
Netherlands	1.09	(0.03)	1.16	(0.03)	1.14	(0.04)
New Zealand	1.02	(0.03)	1.02	(0.03)	1.02	(0.03)
Norway	a	a	a	a	a	a
Poland	a	a	a	a	a	a
Portugal	1.04	(0.03)	1.07	(0.03)	1.08	(0.03)
Slovak Republic	1.19	(0.04)	1.21	(0.05)	1.17	(0.05)
Spain	1.13	(0.02)	1.07	(0.02)	1.07	(0.02)
Sweden	1.12	(0.02)	1.12	(0.02)	1.11	(0.02)
Switzerland	1.16	(0.02)	1.16	(0.02)	1.15	(0.02)
Turkey	1.07	(0.03)	1.06	(0.03)	1.08	(0.03)
United Kingdom	1.13	(0.02)	1.13	(0.02)	1.13	(0.02)
United States	1.00	(0.02)	0.98	(0.03)	0.98	(0.03)
OECD average	1.10	(0.01)	1.10	(0.01)	1.09	(0.01)
Partners						
Argentina	0.97	(0.04)	0.95	(0.05)	0.97	(0.05)
Azerbaijan	1.14	(0.03)	1.13	(0.03)	1.13	(0.03)
Brazil	1.00	(0.04)	1.01	(0.04)	1.02	(0.04)
Bulgaria	1.05	(0.02)	1.04	(0.03)	1.07	(0.03)
Chile	1.15	(0.02)	1.13	(0.02)	1.12	(0.02)
Colombia	0.96	(0.04)	0.98	(0.04)	0.98	(0.05)
Croatia	1.41	(0.05)	1.50	(0.05)	1.39	(0.05)
Estonia	1.10	(0.03)	1.07	(0.03)	1.07	(0.03)
Hong Kong-China	1.19	(0.03)	1.13	(0.03)	1.13	(0.03)
Indonesia	1.06	(0.02)	1.06	(0.02)	1.05	(0.02)
Israel	1.10	(0.02)	1.10	(0.02)	1.09	(0.03)
Jordan	1.10	(0.02)	1.08	(0.02)	1.08	(0.02)
Kyrgyzstan	1.06	(0.02)	1.05	(0.02)	1.06	(0.02)
Latvia	1.09	(0.04)	1.04	(0.04)	1.05	(0.04)
Lithuania	1.22	(0.03)	1.20	(0.03)	1.21	(0.03)
Macao-China	1.15	(0.02)	1.11	(0.02)	1.11	(0.02)
Montenegro	1.06	(0.02)	1.06	(0.02)	1.06	(0.02)
Romania	1.06	(0.04)	1.07	(0.04)	1.08	(0.04)
Russian Federation	1.34	(0.09)	1.35	(0.10)	1.33	(0.10)
Serbia	1.21	(0.06)	1.19	(0.06)	1.15	(0.06)
Slovenia	1.25	(0.05)	1.27	(0.05)	1.07	(0.06)
Chinese Taipei	1.09	(0.02)	1.07	(0.02)	1.03	(0.02)
Thailand	1.01	(0.02)	0.99	(0.03)	0.99	(0.03)
Tunisia	1.06	(0.02)	1.03	(0.02)	1.04	(0.02)
Uruguay	1.17	(0.03)	1.13	(0.03)	1.12	(1.03)

Note: Values that are statistically different are indicated in bold.



Table A2.10a Number of hours students report spending in regular lessons at school learning science

		Number of hours students report spending in regular lessons at school learning science					
		Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers	
		Mean	S.E.	Mean	S.E.	Dif	S.E.
OECD	Australia	3.60	(0.07)	2.33	(0.06)	1.27	(0.09)
	Austria	3.13	(0.15)	1.52	(0.06)	1.62	(0.16)
	Belgium	3.02	(0.11)	1.47	(0.08)	1.55	(0.13)
	Canada	4.13	(0.11)	2.81	(0.07)	1.31	(0.13)
	Czech Republic	3.50	(0.16)	1.89	(0.07)	1.61	(0.17)
	Denmark	3.44	(0.10)	2.72	(0.08)	0.72	(0.13)
	Finland	3.52	(0.09)	2.44	(0.08)	1.08	(0.10)
	France	3.45	(0.12)	1.55	(0.06)	1.90	(0.13)
	Germany	3.68	(0.14)	1.93	(0.08)	1.75	(0.17)
	Greece	3.59	(0.12)	2.02	(0.08)	1.57	(0.15)
	Hungary	2.93	(0.14)	1.87	(0.06)	1.06	(0.15)
	Iceland	3.11	(0.08)	2.49	(0.06)	0.62	(0.11)
	Ireland	2.84	(0.11)	1.95	(0.10)	0.89	(0.16)
	Italy	3.52	(0.10)	2.16	(0.07)	1.35	(0.13)
	Japan	2.85	(0.09)	2.22	(0.06)	0.63	(0.11)
	Korea	3.78	(0.09)	2.95	(0.09)	0.83	(0.12)
	Luxembourg	2.66	(0.14)	1.69	(0.06)	0.97	(0.14)
	Mexico	3.00	(0.11)	2.91	(0.11)	0.09	(0.16)
	Netherlands	3.01	(0.11)	1.23	(0.08)	1.79	(0.12)
	New Zealand	4.51	(0.09)	2.91	(0.11)	1.60	(0.15)
	Norway	2.75	(0.07)	2.32	(0.07)	0.43	(0.10)
	Poland	3.17	(0.11)	2.16	(0.07)	1.01	(0.11)
	Portugal	3.62	(0.18)	2.10	(0.07)	1.52	(0.20)
	Slovak Republic	2.95	(0.14)	1.35	(0.07)	1.60	(0.15)
	Spain	3.53	(0.08)	2.27	(0.06)	1.26	(0.10)
	Sweden	3.06	(0.06)	2.46	(0.06)	0.59	(0.08)
Switzerland	2.84	(0.13)	1.54	(0.05)	1.30	(0.14)	
Turkey	3.54	(0.18)	1.86	(0.12)	1.68	(0.21)	
United Kingdom	4.54	(0.09)	3.27	(0.07)	1.26	(0.11)	
United States	3.91	(0.13)	2.21	(0.11)	1.70	(0.17)	
	OECD average	3.37	(0.02)	2.15	(0.01)	1.22	(0.03)
Partners	Argentina	2.43	(0.18)	1.64	(0.09)	0.79	(0.21)
	Azerbaijan	2.92	(0.14)	2.27	(0.08)	0.65	(0.17)
	Brazil	2.44	(0.12)	1.64	(0.08)	0.81	(0.15)
	Bulgaria	2.88	(0.21)	1.69	(0.10)	1.18	(0.22)
	Chile	2.58	(0.16)	1.44	(0.06)	1.13	(0.19)
	Colombia	3.63	(0.19)	3.04	(0.15)	0.59	(0.21)
	Croatia	2.18	(0.10)	1.29	(0.07)	0.88	(0.12)
	Estonia	3.74	(0.12)	2.54	(0.09)	1.19	(0.13)
	Hong Kong-China	3.92	(0.14)	1.80	(0.11)	2.12	(0.18)
	Indonesia	3.30	(0.15)	2.52	(0.08)	0.78	(0.14)
	Israel	2.86	(0.14)	1.57	(0.08)	1.28	(0.17)
	Jordan	3.53	(0.18)	2.24	(0.10)	1.29	(0.22)
	Kyrgyzstan	2.08	(0.14)	1.64	(0.19)	0.44	(0.20)
	Latvia	3.31	(0.16)	2.04	(0.10)	1.27	(0.18)
	Lithuania	3.02	(0.12)	2.00	(0.09)	1.02	(0.14)
	Macao-China	4.11	(0.13)	2.74	(0.10)	1.38	(0.14)
	Montenegro	3.13	(0.14)	1.95	(0.09)	1.18	(0.16)
	Romania	2.67	(0.21)	1.50	(0.10)	1.17	(0.22)
	Russian Federation	4.14	(0.17)	2.63	(0.12)	1.51	(0.20)
	Serbia	3.15	(0.12)	1.93	(0.09)	1.22	(0.15)
Slovenia	3.41	(0.15)	1.68	(0.06)	1.72	(0.15)	
Chinese Taipei	3.31	(0.12)	1.80	(0.08)	1.52	(0.14)	
Thailand	4.16	(0.11)	3.27	(0.05)	0.89	(0.11)	
Tunisia	3.01	(0.10)	1.87	(0.09)	1.14	(0.13)	
Uruguay	2.53	(0.16)	1.74	(0.08)	0.79	(0.17)	

Note: Values that are statistically different are indicated in bold.



Table A2.10b Relationship between being resilient and hours spent in regular lessons at school learning science

Increased likelihood of being resilient associate with one additional hour regular lessons at school learning science						
	Ratio	S.E.	After accounting for ESCS, gender, immigrant background, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant background, grade, using test language	
			Ratio	S.E.	Ratio	S.E.
OECD						
Australia	1.33	(0.03)	1.37	(0.03)	1.36	(0.03)
Austria	1.54	(0.05)	1.55	(0.05)	1.40	(0.05)
Belgium	1.44	(0.03)	1.49	(0.04)	1.41	(0.04)
Canada	1.26	(0.03)	1.21	(0.03)	1.20	(0.03)
Czech Republic	1.49	(0.05)	1.55	(0.05)	1.50	(0.06)
Denmark	1.30	(0.06)	1.29	(0.06)	1.29	(0.07)
Finland	1.44	(0.04)	1.44	(0.04)	1.44	(0.04)
France	1.8	(0.05)	1.55	(0.06)	1.44	(0.07)
Germany	1.53	(0.05)	1.45	(0.06)	1.33	(0.06)
Greece	1.5	(0.05)	1.48	(0.05)	1.45	(0.05)
Hungary	1.4	(0.06)	1.42	(0.06)	1.37	(0.07)
Iceland	1.27	(0.05)	1.25	(0.06)	1.25	(0.06)
Ireland	1.28	(0.05)	1.32	(0.05)	1.30	(0.05)
Italy	1.38	(0.04)	1.33	(0.04)	1.32	(0.04)
Japan	1.4	(0.06)	1.37	(0.07)	1.25	(0.07)
Korea	1.44	(0.06)	1.43	(0.06)	1.31	(0.06)
Luxembourg	1.3	(0.05)	1.19	(0.05)	1.23	(0.06)
Mexico	1.01	(0.03)	1.02	(0.03)	1.02	(0.03)
Netherlands	1.59	(0.04)	1.63	(0.04)	1.48	(0.06)
New Zealand	1.48	(0.05)	1.46	(0.05)	1.44	(0.06)
Norway	1.3	(0.07)	1.26	(0.07)	1.26	(0.07)
Poland	1.4	(0.05)	1.41	(0.05)	1.41	(0.05)
Portugal	1.40	(0.06)	1.18	(0.06)	1.19	(0.06)
Slovak Republic	1.5	(0.04)	1.55	(0.05)	1.46	(0.05)
Spain	1.47	(0.03)	1.42	(0.04)	1.42	(0.04)
Sweden	1.38	(0.05)	1.40	(0.06)	1.39	(0.06)
Switzerland	1.47	(0.05)	1.44	(0.05)	1.37	(0.05)
Turkey	1.40	(0.05)	1.39	(0.05)	1.33	(0.05)
United Kingdom	1.50	(0.06)	1.51	(0.06)	1.50	(0.06)
United States	1.37	(0.04)	1.34	(0.05)	1.34	(0.05)
OECD average	1.41	(0.01)	1.38	(0.01)	1.34	(0.01)
Partners						
Argentina	1.24	(0.07)	1.22	(0.07)	1.18	(0.07)
Azerbaijan	1.2	(0.05)	1.17	(0.05)	1.17	(0.05)
Brazil	1.36	(0.06)	1.41	(0.06)	1.41	(0.06)
Bulgaria	1.29	(0.06)	1.31	(0.07)	1.28	(0.07)
Chile	1.37	(0.06)	1.40	(0.06)	1.37	(0.06)
Colombia	1.15	(0.07)	1.10	(0.08)	1.10	(0.08)
Croatia	1.3	(0.04)	1.27	(0.04)	1.22	(0.04)
Estonia	1.37	(0.04)	1.35	(0.05)	1.36	(0.05)
Hong Kong-China	1.38	(0.03)	1.35	(0.03)	1.34	(0.03)
Indonesia	1.26	(0.06)	1.24	(0.05)	1.21	(0.05)
Israel	1.30	(0.04)	1.33	(0.04)	1.34	(0.04)
Jordan	1.26	(0.05)	1.21	(0.05)	1.22	(0.05)
Kyrgyzstan	1.11	(0.05)	1.12	(0.04)	1.14	(0.04)
Latvia	1.44	(0.07)	1.40	(0.07)	1.40	(0.08)
Lithuania	1.3	(0.05)	1.27	(0.05)	1.27	(0.05)
Macao-China	1.28	(0.04)	1.21	(0.04)	1.21	(0.04)
Montenegro	1.30	(0.04)	1.31	(0.05)	1.31	(0.05)
Romania	1.32	(0.07)	1.31	(0.08)	1.29	(0.08)
Russian Federation	1.30	(0.05)	1.29	(0.06)	1.29	(0.06)
Serbia	1.3	(0.04)	1.32	(0.04)	1.27	(0.04)
Slovenia	1.52	(0.05)	1.55	(0.05)	1.35	(0.06)
Chinese Taipei	1.39	(0.04)	1.53	(0.05)	1.42	(0.05)
Thailand	1.72	(0.08)	1.64	(0.08)	1.62	(0.08)
Tunisia	1.33	(0.04)	1.21	(0.05)	1.21	(0.05)
Uruguay	1.23	(0.05)	1.28	(0.06)	1.27	(0.06)

Note: Values that are statistically different are indicated in bold.



Table A2.11a Share of students in private schools

	Share of students in private schools					
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers	
	%	S.E.	%	S.E.	Dif	S.E.
OECD						
Australia	w	w	w	w	w	w
Austria	c	c	c	c	c	c
Belgium	w	w	w	w	w	w
Canada	c	c	c	c	c	c
Czech Republic	c	c	c	c	c	c
Denmark	23.7	(4.7)	18.5	(3.6)	5.3	(4.2)
Finland	c	c	c	c	c	c
France	w	w	w	w	w	w
Germany	c	c	c	c	c	c
Greece	c	c	c	c	c	c
Hungary	c	c	c	c	c	c
Iceland	c	c	c	c	c	c
Ireland	54.1	(4.3)	44.1	(3.3)	9.9	(5.7)
Italy	c	c	c	c	c	c
Japan	18.2	(2.6)	28.9	(4.1)	-10.7	(4.4)
Korea	48.4	(6.0)	51.0	(6.0)	-2.6	(6.6)
Luxembourg	11.5	(2.2)	16.4	(1.2)	-4.9	(2.5)
Mexico	c	c	c	c	c	c
Netherlands	73.7	(5.2)	66.2	(7.2)	7.5	(7.2)
New Zealand	c	c	c	c	c	c
Norway	c	c	c	c	c	c
Poland	c	c	c	c	c	c
Portugal	c	c	c	c	c	c
Slovak Republic	c	c	c	c	c	c
Spain	24.0	(2.6)	18.0	(2.0)	6.0	(2.9)
Sweden	c	c	c	c	c	c
Switzerland	c	c	c	c	c	c
Turkey	c	c	c	c	c	c
United Kingdom	c	c	c	c	c	c
United States	c	c	c	c	c	c
OECD average	14.8	(0.5)	12.7	(0.5)	2.1	(0.6)
Partners						
Argentina	26.9	(4.6)	11.0	(3.6)	15.9	(5.7)
Azerbaijan	c	c	c	c	c	c
Brazil	c	c	c	c	c	c
Bulgaria	m	m	m	m	m	m
Chile	50.3	(5.7)	32.1	(4.6)	18.2	(6.4)
Colombia	c	c	c	c	c	c
Croatia	c	c	c	c	c	c
Estonia	c	c	c	c	c	c
Hong Kong-China	93.3	(2.6)	94.4	(1.2)	-1.1	(2.6)
Indonesia	37.5	(7.0)	48.5	(5.2)	-11.0	(7.9)
Israel	31.2	(5.8)	26.2	(3.9)	5.0	(4.9)
Jordan	18.8	(2.5)	7.2	(0.9)	11.5	(2.5)
Kyrgyzstan	c	c	c	c	c	c
Latvia	c	c	c	c	c	c
Lithuania	c	c	c	c	c	c
Macao-China	95.6	(1.0)	89.2	(0.9)	6.4	(1.4)
Montenegro	c	c	c	c	c	c
Romania	c	c	c	c	c	c
Russian Federation	c	c	c	c	c	c
Serbia	c	c	c	c	c	c
Slovenia	c	c	c	c	c	c
Chinese Taipei	15.5	(2.5)	47.3	(6.2)	-31.8	(6.0)
Thailand	9.4	(3.3)	10.2	(2.1)	-0.8	(3.1)
Tunisia	c	c	c	c	c	c
Uruguay	c	c	c	c	c	c

Note: Values that are statistically different are indicated in bold.

Table A2.11b Relationship between being resilient and being in private schools

	Increased likelihood of being resilient associate with being in private schools					
	Ratio	S.E.	After accounting for ESCS, gender, immigrant, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant, grade, using test language	
			Ratio	S.E.	Ratio	S.E.
OECD						
Australia	w	w	w	w	w	w
Austria	c	c	c	c	c	c
Belgium	w	w	w	w	w	w
Canada	c	c	c	c	c	c
Czech Republic	c	c	c	c	c	c
Denmark	1.27	(0.22)	1.08	(0.22)	0.95	(0.23)
Finland	c	c	c	c	c	c
France	w	w	w	w	w	w
Germany	c	c	c	c	c	c
Greece	c	c	c	c	c	c
Hungary	c	c	c	c	c	c
Iceland	c	c	c	c	c	c
Ireland	1.30	(0.21)	1.18	(0.22)	0.86	(0.20)
Italy	c	c	c	c	c	c
Japan	0.64	(0.21)	0.63	(0.20)	0.35	(0.22)
Korea	0.91	(0.21)	0.89	(0.21)	0.98	(0.20)
Luxembourg	0.67	(0.24)	0.68	(0.28)	0.78	(0.29)
Mexico	c	c	c	c	c	c
Netherlands	1.33	(0.30)	1.20	(0.30)	1.24	(0.27)
New Zealand	c	c	c	c	c	c
Norway	c	c	c	c	c	c
Poland	c	c	c	c	c	c
Portugal	c	c	c	c	c	c
Slovak Republic	c	c	c	c	c	c
Spain	1.38	(0.16)	0.97	(0.19)	0.78	(0.19)
Sweden	c	c	c	c	c	c
Switzerland	c	c	c	c	c	c
Turkey	c	c	c	c	c	c
United Kingdom	c	c	c	c	c	c
United States	c	c	c	c	c	c
OECD average	0.87	(0.10)	1.00	(0.00)	0.58	(0.10)
Partners						
Argentina	2.52	(0.32)	1.98	(0.27)	1.10	(0.31)
Azerbaijan	c	c	c	c	c	c
Brazil	c	c	c	c	c	c
Bulgaria	m	m	m	m	m	m
Chile	1.76	(0.23)	1.46	(0.24)	1.12	(0.24)
Colombia	c	c	c	c	c	c
Croatia	c	c	c	c	c	c
Estonia	c	c	c	c	c	c
Hong Kong-China	0.83	(0.38)	0.73	(0.38)	0.91	(0.42)
Indonesia	0.67	(0.29)	0.52	(0.30)	0.70	(0.26)
Israel	1.28	(0.24)	1.14	(0.25)	1.01	(0.24)
Jordan	2.19	(0.20)	1.99	(0.23)	1.96	(0.23)
Kyrgyzstan	c	c	c	c	c	c
Latvia	c	c	c	c	c	c
Lithuania	c	c	c	c	c	c
Macao-China	1.95	(0.29)	1.84	(0.33)	1.59	(0.37)
Montenegro	c	c	c	c	c	c
Romania	c	c	c	c	c	c
Russian Federation	c	c	c	c	c	c
Serbia	c	c	c	c	c	c
Slovenia	c	c	c	c	c	c
Chinese Taipei	0.27	(0.23)	0.19	(0.27)	0.22	(0.23)
Thailand	0.82	(0.38)	0.59	(0.40)	0.54	(0.41)
Tunisia	c	c	c	c	c	c
Uruguay	c	c	c	c	c	c

Note: Values that are statistically different are indicated in bold.



Table A2.12a Share of students in schools which compete with other schools

	Share of students in schools which compete with other schools					
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers	
	%	S.E.	%	S.E.	Dif	S.E.
OECD						
Australia	c	c	c	c	c	c
Austria	55.1	(5.7)	52.8	(6.2)	2.3	(7.8)
Belgium	90.1	(2.9)	92.0	(2.8)	-1.9	(3.7)
Canada	76.5	(3.0)	72.0	(2.7)	4.5	(2.6)
Czech Republic	85.4	(3.7)	82.3	(3.7)	3.1	(4.2)
Denmark	74.5	(4.8)	82.0	(3.4)	-7.5	(4.3)
Finland	46.5	(4.3)	50.8	(4.0)	-4.3	(4.1)
France	w	w	w	w	w	w
Germany	86.2	(4.2)	71.9	(5.0)	14.3	(6.2)
Greece	57.9	(5.1)	51.7	(4.9)	6.3	(5.7)
Hungary	77.7	(5.8)	69.2	(5.6)	8.5	(7.4)
Iceland	24.8	(2.8)	29.2	(2.0)	-4.4	(3.4)
Ireland	78.1	(4.0)	84.2	(3.4)	-6.2	(3.8)
Italy	83.2	(3.0)	77.0	(3.5)	6.1	(3.7)
Japan	88.5	(4.1)	88.2	(3.5)	0.3	(4.3)
Korea	86.1	(3.7)	92.5	(2.1)	-6.4	(2.7)
Luxembourg	62.1	(3.6)	64.2	(1.3)	-2.1	(3.9)
Mexico	80.7	(3.8)	74.2	(5.5)	6.5	(5.8)
Netherlands	87.5	(5.2)	85.0	(4.5)	2.5	(6.9)
New Zealand	89.0	(3.5)	90.7	(2.5)	-1.6	(2.4)
Norway	28.7	(4.4)	27.5	(4.0)	1.3	(3.7)
Poland	50.7	(5.6)	51.5	(4.8)	-0.8	(4.1)
Portugal	68.4	(6.2)	63.9	(5.4)	4.5	(6.2)
Slovak Republic	90.0	(3.4)	81.7	(5.8)	8.4	(5.7)
Spain	72.9	(3.8)	76.5	(3.3)	-3.7	(3.4)
Sweden	55.8	(5.5)	56.8	(4.5)	-0.9	(4.6)
Switzerland	38.1	(4.0)	36.1	(3.6)	2.0	(4.6)
Turkey	68.6	(5.3)	51.6	(6.0)	17.0	(6.2)
United Kingdom	c	c	c	c	c	c
United States	67.8	(5.2)	74.6	(4.6)	-6.8	(5.3)
OECD average	70.8	(0.8)	69.5	(0.8)	1.3	(0.9)
Partners						
Argentina	79.1	(4.6)	63.0	(6.9)	16.1	(7.2)
Azerbaijan	m	m	m	m	m	m
Brazil	54.4	(4.5)	53.3	(4.1)	1.1	(5.6)
Bulgaria	84.2	(5.2)	73.8	(6.3)	10.4	(6.9)
Chile	67.5	(8.2)	71.0	(5.8)	-3.4	(7.0)
Colombia	72.4	(7.5)	69.6	(6.8)	2.8	(5.6)
Croatia	75.4	(5.2)	74.5	(4.6)	0.9	(5.1)
Estonia	77.1	(4.9)	75.0	(3.9)	2.2	(5.5)
Hong Kong-China	c	c	c	c	c	c
Indonesia	c	c	c	c	c	c
Israel	82.3	(4.1)	85.0	(4.0)	-2.6	(4.3)
Jordan	50.9	(5.8)	49.9	(4.9)	0.9	(5.5)
Kyrgyzstan	64.4	(5.2)	60.7	(4.7)	3.7	(6.8)
Latvia	c	c	c	c	c	c
Lithuania	66.5	(4.8)	64.0	(4.5)	2.4	(4.7)
Macao-China	c	c	c	c	c	c
Montenegro	c	c	c	c	c	c
Romania	53.2	(10.4)	45.5	(5.9)	7.7	(10.4)
Russian Federation	65.7	(6.3)	71.2	(4.5)	-5.5	(4.5)
Serbia	64.6	(5.5)	75.5	(5.0)	-10.9	(6.0)
Slovenia	56.7	(3.8)	39.4	(2.0)	17.3	(4.0)
Chinese Taipei	c	c	c	c	c	c
Thailand	87.3	(3.9)	86.1	(4.4)	1.2	(4.2)
Tunisia	46.0	(7.4)	47.2	(6.4)	-1.2	(7.3)
Uruguay	38.2	(5.0)	31.9	(4.9)	6.3	(6.2)

Note: Values that are statistically different are indicated in bold.



Table A2.12b Relationship between being resilient and being in schools which compete with other schools

		Increased likelihood of being resilient associate with being in schools which compete with other schools					
		Ratio	S.E.	After accounting for ESCS, gender, immigrant background, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant background, grade, using test language	
				Ratio	S.E.	Ratio	S.E.
OECD	Australia	c	c	c	c	c	c
	Austria	1.02	(0.25)	1.61	(0.25)	1.08	(0.25)
	Belgium	0.93	(0.38)	0.96	(0.32)	0.92	(0.30)
	Canada	1.19	(0.12)	1.14	(0.13)	1.09	(0.13)
	Czech Republic	1.26	(0.29)	1.08	(0.31)	0.84	(0.31)
	Denmark	0.71	(0.26)	0.71	(0.28)	0.74	(0.28)
	Finland	0.85	(0.15)	0.89	(0.15)	0.87	(0.17)
	France	w	w	w	w	w	w
	Germany	1.91	(0.39)	1.42	(0.37)	1.06	(0.30)
	Greece	1.22	(0.19)	1.07	(0.18)	0.89	(0.19)
	Hungary	1.34	(0.34)	1.19	(0.34)	0.86	(0.29)
	Iceland	0.88	(0.17)	0.90	(0.17)	0.90	(0.17)
	Ireland	0.79	(0.24)	0.76	(0.24)	0.72	(0.25)
	Italy	1.30	(0.20)	1.23	(0.20)	1.28	(0.20)
	Japan	1.03	(0.35)	1.04	(0.34)	0.79	(0.35)
	Korea	0.64	(0.21)	0.66	(0.22)	1.11	(0.28)
	Luxembourg	0.90	(0.17)	0.99	(0.17)	0.96	(0.18)
	Mexico	1.33	(0.29)	0.80	(0.29)	0.72	(0.30)
	Netherlands	1.06	(0.50)	1.02	(0.48)	0.62	(0.53)
	New Zealand	0.87	(0.25)	0.91	(0.25)	0.91	(0.26)
	Norway	1.03	(0.16)	1.08	(0.16)	0.99	(0.16)
	Poland	0.96	(0.15)	0.94	(0.15)	0.97	(0.15)
	Portugal	1.22	(0.24)	1.00	(0.22)	0.93	(0.22)
	Slovak Republic	1.61	(0.39)	0.92	(0.33)	0.59	(0.33)
	Spain	0.88	(0.17)	0.86	(0.20)	0.77	(0.20)
	Sweden	1.04	(0.18)	1.23	(0.19)	1.16	(0.20)
	Switzerland	1.10	(0.17)	1.18	(0.18)	1.00	(0.15)
Turkey	1.79	(0.24)	1.55	(0.24)	1.09	(0.24)	
United Kingdom	c	c	c	c	c	c	
United States	0.81	(0.21)	0.97	(0.18)	0.95	(0.18)	
OECD average	1.04	(0.05)	1.01	(0.05)	0.91	(0.05)	
Partners	Argentina	1.94	(0.29)	1.86	(0.29)	1.25	(0.30)
	Azerbaijan	m	m	m	m	m	m
	Brazil	0.97	(0.20)	0.87	(0.21)	0.81	(0.20)
	Bulgaria	1.65	(0.39)	1.00	(0.41)	0.73	(0.37)
	Chile	0.83	(0.30)	0.89	(0.30)	0.59	(0.33)
	Colombia	1.19	(0.26)	1.10	(0.29)	1.07	(0.29)
	Croatia	1.04	(0.24)	0.96	(0.24)	0.91	(0.25)
	Estonia	1.17	(0.27)	1.16	(0.27)	1.13	(0.28)
	Hong Kong-China	c	c	c	c	c	c
	Indonesia	c	c	c	c	c	c
	Israel	0.85	(0.28)	0.85	(0.28)	0.89	(0.25)
	Jordan	1.02	(0.20)	0.93	(0.20)	0.92	(0.20)
	Kyrgyzstan	1.06	(0.24)	1.05	(0.24)	1.01	(0.25)
	Latvia	c	c	c	c	c	c
	Lithuania	1.05	(0.20)	0.96	(0.20)	0.77	(0.19)
	Macao-China	c	c	c	c	c	c
	Montenegro	c	c	c	c	c	c
	Romania	1.25	(0.37)	1.06	(0.38)	0.81	(0.39)
	Russian Federation	0.86	(0.18)	0.85	(0.18)	0.85	(0.19)
	Serbia	0.67	(0.25)	0.63	(0.25)	0.61	(0.27)
	Slovenia	1.97	(0.16)	2.01	(0.17)	1.09	(0.19)
	Chinese Taipei	c	c	c	c	c	c
Thailand	1.00	(0.29)	0.90	(0.27)	0.96	(0.27)	
Tunisia	1.01	(0.25)	1.21	(0.19)	1.09	(0.19)	
Uruguay	1.21	(0.23)	1.25	(0.22)	1.13	(0.24)	

Note: Values that are statistically different are indicated in bold.



Table A2.13a Share of students in schools which select students based on academic record

	Share of students in schools which select students based on academic record						
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers		
	%	S.E.	%	S.E.	Dif	S.E.	
OECD	Australia	c	c	c	c	c	c
	Austria	80.6	(3.5)	34.8	(4.4)	45.8	(5.7)
	Belgium	30.3	(4.7)	24.5	(3.7)	5.8	(5.3)
	Canada	c	c	c	c	c	c
	Czech Republic	52.3	(4.5)	25.5	(4.5)	26.8	(5.9)
	Denmark	c	c	c	c	c	c
	Finland	c	c	c	c	c	c
	France	w	w	w	w	w	w
	Germany	54.0	(6.0)	21.2	(4.2)	32.9	(6.5)
	Greece	1.2	(1.1)	0.2	(0.2)	1.0	(0.9)
	Hungary	78.7	(5.3)	32.1	(5.6)	46.6	(7.0)
	Iceland	c	c	c	c	c	c
	Ireland	c	c	c	c	c	c
	Italy	c	c	c	c	c	c
	Japan	91.1	(3.1)	84.1	(4.1)	7.0	(4.6)
	Korea	64.9	(5.2)	63.6	(6.0)	1.3	(6.1)
	Luxembourg	46.7	(4.6)	46.2	(1.7)	0.5	(4.9)
	Mexico	40.3	(3.6)	21.1	(5.1)	19.3	(5.1)
	Netherlands	68.2	(6.0)	59.9	(6.0)	8.3	(7.0)
	New Zealand	c	c	c	c	c	c
	Norway	c	c	c	c	c	c
	Poland	c	c	c	c	c	c
	Portugal	c	c	c	c	c	c
	Slovak Republic	55.1	(4.5)	34.3	(5.6)	20.8	(6.4)
	Spain	c	c	c	c	c	c
	Sweden	c	c	c	c	c	c
Switzerland	58.8	(5.0)	46.6	(3.5)	12.3	(5.3)	
Turkey	34.0	(5.3)	14.3	(2.9)	19.8	(5.2)	
United Kingdom	c	c	c	c	c	c	
United States	c	c	c	c	c	c	
OECD average	54.0	(1.2)	36.3	(1.2)	17.7	(1.5)	
Partners	Argentina	c	c	c	c	c	c
	Azerbaijan	14.8	(5.1)	15.8	(4.4)	-1.0	(5.8)
	Brazil	c	c	c	c	c	c
	Bulgaria	86.9	(4.4)	65.5	(5.3)	21.4	(6.3)
	Chile	35.0	(7.2)	15.4	(4.4)	19.5	(6.7)
	Colombia	17.4	(4.4)	8.6	(2.3)	8.7	(3.7)
	Croatia	92.7	(2.6)	81.0	(3.8)	11.8	(3.3)
	Estonia	35.6	(5.7)	30.2	(4.1)	5.4	(5.7)
	Hong Kong-China	85.2	(3.7)	73.8	(4.8)	11.3	(4.7)
	Indonesia	66.5	(7.1)	43.3	(5.0)	23.2	(6.4)
	Israel	33.7	(5.6)	28.4	(5.6)	5.3	(5.6)
	Jordan	20.3	(4.9)	24.0	(4.6)	-3.8	(4.8)
	Kyrgyzstan	22.8	(5.6)	22.5	(4.3)	0.3	(5.7)
	Latvia	15.6	(3.3)	6.2	(1.6)	9.4	(3.1)
	Lithuania	c	c	c	c	c	c
	Macao-China	72.0	(3.3)	62.4	(1.9)	9.6	(3.8)
	Montenegro	67.9	(2.7)	57.6	(2.3)	10.3	(3.7)
	Romania	68.8	(8.2)	48.0	(6.5)	20.8	(8.6)
	Russian Federation	8.9	(2.6)	10.1	(2.5)	-1.3	(3.4)
	Serbia	94.9	(2.3)	81.0	(4.9)	13.9	(4.8)
	Slovenia	45.1	(3.8)	18.3	(1.3)	26.9	(4.0)
	Chinese Taipei	64.9	(3.6)	28.3	(5.9)	36.6	(6.1)
Thailand	38.5	(6.3)	35.0	(5.6)	3.4	(5.2)	
Tunisia	21.8	(5.8)	27.3	(5.8)	-5.5	(6.5)	
Uruguay	c	c	c	c	c	c	

Note: Values that are statistically different are indicated in bold.


Table A2.13b Relationship between being resilient and being in schools which select based on academic record

	Increased likelihood of being resilient associate with being in schools which select based on academic record					
	Ratio	S.E.	After accounting for ESCS, gender, immigrant background, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant background, grade, using test language	
			Ratio	S.E.	Ratio	S.E.
OECD						
Australia	c	c	c	c	c	c
Austria	5.06	(0.24)	6.69	(0.27)	3.80	(0.33)
Belgium	1.30	(0.23)	1.27	(0.21)	1.21	(0.19)
Canada	c	c	c	c	c	c
Czech Republic	2.32	(0.22)	2.86	(0.32)	2.24	(0.31)
Denmark	c	c	c	c	c	c
Finland	c	c	c	c	c	c
France	w	w	w	w	w	w
Germany	3.30	(0.25)	2.96	(0.26)	1.62	(0.25)
Greece	c	c	c	c	c	c
Hungary	4.62	(0.32)	2.99	(0.34)	2.05	(0.34)
Iceland	c	c	c	c	c	c
Ireland	c	c	c	c	c	c
Italy	c	c	c	c	c	c
Japan	1.69	(0.41)	1.69	(0.41)	1.77	(0.40)
Korea	1.04	(0.22)	1.02	(0.21)	1.33	(0.18)
Luxembourg	1.00	(0.20)	1.03	(0.22)	1.18	(0.24)
Mexico	1.97	(0.23)	1.33	(0.19)	1.17	(0.18)
Netherlands	1.32	(0.27)	1.45	(0.28)	0.97	(0.30)
New Zealand	c	c	c	c	c	c
Norway	c	c	c	c	c	c
Poland	c	c	c	c	c	c
Portugal	c	c	c	c	c	c
Slovak Republic	1.97	(0.21)	1.70	(0.29)	1.58	(0.28)
Spain	c	c	c	c	c	c
Sweden	c	c	c	c	c	c
Switzerland	1.65	(0.20)	1.63	(0.20)	1.45	(0.20)
Turkey	2.71	(0.24)	3.96	(0.32)	1.80	(0.24)
United Kingdom	c	c	c	c	c	c
United States	c	c	c	c	c	c
OECD average	2.02	(0.07)	1.93	(0.08)	1.60	(0.08)
Partners						
Argentina	c	c	c	c	c	c
Azerbaijan	0.88	(0.41)	0.91	(0.41)	0.91	(0.42)
Brazil	c	c	c	c	c	c
Bulgaria	2.99	(0.41)	1.66	(0.37)	0.96	(0.34)
Chile	2.18	(0.31)	1.67	(0.32)	1.34	(0.29)
Colombia	1.79	(0.24)	1.83	(0.28)	1.77	(0.29)
Croatia	2.47	(0.33)	2.19	(0.34)	1.43	(0.33)
Estonia	1.14	(0.24)	1.07	(0.24)	0.99	(0.22)
Hong Kong-China	1.53	(0.27)	1.48	(0.29)	1.20	(0.29)
Indonesia	2.14	(0.26)	1.76	(0.26)	1.43	(0.25)
Israel	1.16	(0.21)	1.12	(0.21)	1.00	(0.20)
Jordan	0.87	(0.27)	0.94	(0.26)	0.93	(0.26)
Kyrgyzstan	1.05	(0.28)	1.03	(0.28)	1.11	(0.29)
Latvia	1.88	(0.24)	1.62	(0.24)	1.25	(0.25)
Lithuania	c	c	c	c	c	c
Macao-China	1.34	(0.21)	1.41	(0.25)	1.41	(0.25)
Montenegro	1.46	(0.15)	1.43	(0.16)	1.22	(0.16)
Romania	2.06	(0.33)	1.99	(0.32)	1.85	(0.34)
Russian Federation	0.94	(0.34)	0.78	(0.37)	0.77	(0.37)
Serbia	3.16	(0.46)	2.86	(0.49)	2.40	(0.46)
Slovenia	2.67	(0.16)	2.45	(0.17)	1.47	(0.20)
Chinese Taipei	3.16	(0.22)	3.13	(0.25)	1.89	(0.20)
Thailand	1.07	(0.23)	0.89	(0.22)	0.82	(0.22)
Tunisia	0.76	(0.30)	0.73	(0.23)	0.77	(0.24)
Uruguay	c	c	c	c	c	c

Note: Values that are statistically different are indicated in bold.



[Part 1/2]
Table A2.14a Quality of educational resources (underlying percentages), by student group

	Percentage of principal reported school capacity to provide instruction hindered by any of the following															
	Shortage or inadequacy of science laboratory equipment				Shortage or inadequacy of instructional materials (e.g. textbooks)				Shortage or inadequacy of computers for instruction				Lack or inadequacy of internet connectivity			
	Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)	
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD																
Australia	27.1	(4.0)	30.1	(3.8)	14.7	(3.0)	19.5	(2.6)	37.0	(3.6)	35.5	(3.3)	20.4	(3.1)	17.3	(2.7)
Austria	40.8	(5.9)	47.4	(6.0)	25.5	(5.3)	21.2	(4.5)	21.7	(4.9)	27.4	(5.2)	7.6	(3.1)	14.6	(4.2)
Belgium	41.7	(5.4)	36.8	(4.1)	17.0	(3.8)	28.6	(4.0)	47.0	(5.1)	35.3	(4.4)	21.7	(4.3)	26.8	(4.3)
Canada	39.2	(3.6)	37.2	(3.0)	25.7	(3.2)	24.0	(2.5)	37.2	(3.6)	35.2	(2.5)	18.9	(3.0)	20.3	(2.8)
Czech Republic	44.6	(5.8)	39.7	(4.8)	31.2	(5.7)	34.1	(4.9)	37.3	(6.1)	44.1	(5.5)	11.2	(2.9)	19.9	(4.4)
Denmark	27.4	(5.1)	37.3	(4.4)	34.0	(5.6)	35.4	(4.7)	33.0	(4.5)	42.0	(4.5)	16.7	(4.2)	18.3	(3.7)
Finland	40.0	(4.8)	38.4	(4.1)	24.0	(4.1)	22.4	(3.9)	34.9	(4.4)	33.1	(4.0)	18.6	(3.5)	16.5	(2.5)
France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w
Germany	33.0	(5.3)	42.3	(5.3)	18.1	(4.7)	24.3	(5.2)	26.3	(5.1)	27.3	(5.1)	17.9	(5.0)	20.1	(4.1)
Greece	32.4	(5.0)	53.1	(4.6)	9.5	(3.3)	8.7	(2.4)	22.4	(5.0)	27.6	(4.8)	8.4	(3.3)	17.9	(4.4)
Hungary	45.9	(5.3)	61.7	(4.8)	35.9	(6.3)	35.7	(5.7)	11.5	(3.9)	18.7	(4.7)	8.7	(3.3)	12.3	(4.0)
Iceland	55.6	(3.7)	65.1	(2.2)	33.7	(3.2)	38.5	(2.3)	21.6	(2.4)	28.7	(2.1)	7.0	(1.7)	7.0	(1.1)
Ireland	47.1	(5.0)	48.3	(4.8)	15.6	(4.3)	16.3	(4.5)	52.7	(4.9)	52.5	(5.8)	30.2	(5.0)	33.2	(5.4)
Italy	37.3	(3.9)	54.9	(3.6)	11.0	(2.3)	28.5	(3.4)	18.4	(2.9)	25.6	(3.2)	11.0	(2.6)	18.9	(2.3)
Japan	24.0	(4.8)	26.1	(5.0)	4.8	(2.7)	7.9	(3.2)	18.0	(3.4)	22.1	(4.8)	17.5	(3.7)	19.4	(3.9)
Korea	45.8	(5.7)	56.4	(6.8)	15.3	(4.0)	15.2	(3.7)	25.6	(4.3)	33.1	(5.3)	12.4	(3.1)	16.9	(5.0)
Luxembourg	18.3	(2.8)	12.5	(1.0)	14.7	(2.6)	13.0	(1.1)	46.6	(3.7)	37.4	(1.5)	15.7	(2.8)	7.7	(0.9)
Mexico	69.8	(3.9)	83.3	(3.5)	56.1	(4.2)	45.8	(5.8)	63.4	(4.2)	72.8	(4.7)	65.2	(3.5)	81.4	(2.9)
Netherlands	27.5	(4.7)	35.7	(5.8)	8.8	(2.8)	20.2	(4.7)	28.6	(4.9)	39.7	(6.8)	19.5	(4.5)	23.6	(6.1)
New Zealand	19.2	(4.5)	20.0	(4.6)	20.3	(4.7)	22.5	(4.8)	43.9	(4.9)	44.2	(5.1)	20.2	(3.5)	20.3	(3.4)
Norway	54.3	(5.3)	54.4	(4.6)	38.0	(5.2)	39.2	(5.2)	47.3	(4.7)	43.9	(4.8)	26.0	(4.7)	21.7	(3.6)
Poland	59.2	(5.4)	62.0	(4.6)	31.6	(4.8)	33.3	(4.2)	35.5	(5.3)	32.1	(4.5)	14.5	(4.4)	7.5	(2.5)
Portugal	48.7	(5.4)	49.7	(6.2)	30.3	(5.7)	28.1	(5.3)	54.1	(5.7)	57.5	(6.1)	27.1	(5.1)	29.3	(4.9)
Slovak Republic	75.9	(4.1)	70.6	(4.7)	68.8	(4.3)	57.6	(5.2)	38.8	(5.5)	36.8	(6.8)	25.3	(5.0)	22.1	(5.2)
Spain	40.8	(4.1)	42.6	(4.4)	15.0	(2.3)	16.7	(2.5)	45.2	(4.1)	46.3	(4.0)	24.3	(3.5)	25.7	(3.1)
Sweden	27.2	(4.5)	33.9	(4.3)	27.0	(5.3)	29.0	(4.6)	52.2	(5.5)	51.2	(4.1)	16.1	(3.7)	16.6	(3.2)
Switzerland	25.1	(3.8)	35.1	(3.7)	10.6	(2.4)	17.3	(2.8)	9.6	(2.8)	16.1	(3.0)	5.4	(2.2)	11.8	(2.8)
Turkey	77.7	(4.9)	68.4	(7.3)	67.5	(5.8)	59.4	(4.8)	64.6	(5.9)	69.3	(4.2)	35.6	(5.9)	42.5	(5.2)
United Kingdom	31.0	(4.6)	29.2	(4.2)	24.0	(4.7)	26.6	(4.0)	40.1	(4.5)	42.8	(4.0)	19.9	(4.4)	23.0	(3.5)
United States	33.7	(5.7)	41.4	(7.1)	15.0	(3.7)	24.8	(7.7)	32.2	(6.0)	37.5	(7.4)	14.4	(5.4)	21.5	(8.1)
OECD average	41.0	(0.9)	45.3	(0.9)	25.6	(0.8)	27.4	(0.8)	36.1	(0.9)	38.5	(0.9)	19.2	(0.7)	21.9	(0.8)
Partners																
Argentina	49.1	(5.7)	72.1	(3.9)	33.5	(5.6)	42.6	(5.8)	47.9	(6.1)	66.2	(5.4)	55.4	(6.9)	75.4	(4.5)
Azerbaijan	87.9	(3.8)	81.9	(4.6)	54.1	(7.6)	63.5	(6.3)	85.9	(4.8)	83.0	(3.7)	80.9	(6.7)	92.5	(3.6)
Brazil	83.7	(4.1)	90.6	(2.2)	54.9	(5.1)	57.3	(4.3)	85.6	(3.1)	89.1	(2.2)	63.6	(4.1)	80.3	(3.2)
Bulgaria	68.8	(6.8)	79.2	(4.9)	40.5	(6.1)	54.6	(6.8)	50.7	(6.4)	41.7	(6.4)	28.5	(5.6)	36.9	(6.0)
Chile	74.5	(6.2)	82.4	(4.4)	45.2	(8.2)	56.6	(6.3)	45.6	(6.6)	57.6	(6.1)	22.2	(7.6)	37.2	(6.4)
Colombia	71.3	(6.3)	81.9	(4.2)	79.0	(5.1)	81.1	(4.7)	73.6	(6.8)	80.3	(4.6)	69.3	(8.0)	66.6	(6.1)
Croatia	73.0	(5.2)	78.7	(4.5)	50.8	(5.7)	56.1	(4.0)	43.3	(5.0)	50.2	(5.1)	26.3	(4.7)	27.6	(5.5)
Estonia	65.5	(5.0)	70.0	(4.9)	31.2	(5.2)	33.9	(5.4)	40.8	(6.1)	45.2	(5.0)	7.5	(2.6)	11.1	(3.4)
Hong Kong-China	11.7	(3.4)	16.4	(5.7)	11.9	(3.2)	24.6	(4.9)	23.5	(5.3)	24.7	(5.6)	6.6	(2.6)	12.0	(4.3)
Indonesia	69.6	(7.1)	80.6	(4.1)	57.9	(7.1)	71.0	(5.2)	56.3	(7.6)	77.3	(3.9)	85.6	(4.2)	87.3	(3.3)
Israel	45.8	(6.2)	44.0	(5.9)	24.5	(4.6)	26.6	(5.7)	36.0	(5.2)	36.1	(5.0)	15.9	(4.3)	17.0	(4.1)
Jordan	58.3	(5.5)	58.0	(5.4)	45.8	(5.7)	47.4	(5.5)	77.4	(4.5)	74.5	(5.9)	73.6	(5.2)	72.7	(5.7)
Kyrgyzstan	95.8	(1.8)	95.6	(2.4)	95.5	(2.2)	97.2	(1.4)	94.0	(1.9)	90.0	(3.9)	96.7	(1.8)	99.2	(0.4)
Latvia	80.6	(4.0)	79.2	(4.8)	44.8	(6.3)	44.3	(6.4)	45.2	(5.4)	47.2	(5.4)	17.2	(4.0)	21.7	(5.8)
Lithuania	66.1	(5.7)	66.6	(4.5)	27.4	(5.0)	28.8	(4.0)	51.5	(5.4)	52.3	(5.4)	18.7	(4.4)	19.9	(3.3)
Macao-China	16.3	(1.7)	17.8	(1.3)	23.0	(2.0)	14.8	(1.2)	18.1	(2.3)	20.6	(1.4)	14.2	(1.9)	14.2	(1.2)
Montenegro	81.2	(2.4)	89.3	(1.1)	60.4	(2.8)	73.8	(1.8)	77.7	(3.4)	77.8	(1.5)	65.4	(3.4)	62.3	(2.0)
Romania	73.7	(7.9)	78.4	(6.6)	66.8	(7.4)	68.2	(6.1)	55.2	(8.8)	65.1	(6.7)	27.1	(6.7)	61.2	(5.4)
Russian Federation	88.7	(3.1)	88.2	(3.1)	64.6	(3.9)	65.9	(3.4)	78.8	(4.6)	79.4	(3.0)	69.8	(4.9)	70.3	(4.0)
Serbia	62.8	(6.1)	65.6	(5.4)	51.3	(5.8)	48.5	(5.2)	56.4	(5.2)	62.8	(5.5)	44.6	(5.5)	46.7	(5.5)
Slovenia	25.1	(3.5)	30.0	(2.5)	19.5	(2.6)	27.7	(1.6)	20.2	(3.2)	22.2	(1.5)	8.7	(1.9)	7.9	(0.8)
Chinese Taipei	25.5	(4.6)	39.9	(6.9)	12.5	(4.1)	21.3	(6.9)	17.6	(4.7)	27.0	(7.2)	13.3	(4.2)	23.6	(7.3)
Thailand	69.1	(5.8)	73.2	(5.0)	51.5	(5.8)	55.8	(5.0)	52.0	(6.0)	64.6	(4.2)	44.2	(6.9)	58.4	(4.3)
Tunisia	40.4	(6.8)	36.4	(5.6)	31.3	(5.9)	29.9	(5.6)	79.7	(5.6)	82.6	(4.1)	48.5	(6.0)	58.3	(6.1)
Uruguay	50.0	(4.7)	53.4	(5.3)	57.2	(4.6)	63.5	(4.9)	67.5	(4.6)	73.1	(5.8)	65.1	(4.2)	71.0	(5.4)

[Part 2/2]
Table A2.14a Quality of educational resources (underlying percentages), by student group

	Percentage of principal reported school capacity to provide instruction hindered by any of the following												
	Shortage or inadequacy of computer software for instruction				Shortage or inadequacy of library materials				Shortage or inadequacy of audio-visual resources				
	Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		
	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	
OECD	Australia	27.3	(3.6)	28.7	(3.2)	15.7	(3.0)	19.0	(3.2)	19.6	(3.3)	19.8	(3.1)
	Austria	17.9	(4.1)	23.1	(5.5)	19.7	(4.7)	22.9	(4.5)	25.6	(5.4)	27.0	(5.8)
	Belgium	31.7	(4.5)	33.4	(4.5)	38.9	(5.0)	37.3	(5.1)	39.0	(5.1)	34.6	(4.4)
	Canada	32.1	(3.4)	33.1	(2.6)	29.4	(3.5)	31.7	(2.9)	30.2	(3.3)	33.4	(2.8)
	Czech Republic	29.4	(5.9)	36.5	(5.7)	38.7	(5.2)	31.6	(4.6)	44.9	(6.5)	39.2	(5.9)
	Denmark	33.0	(5.1)	35.0	(5.2)	16.5	(4.3)	18.2	(3.7)	36.2	(5.0)	42.3	(5.3)
	Finland	40.8	(5.1)	36.7	(4.2)	38.4	(4.9)	36.5	(4.0)	42.1	(5.4)	44.6	(4.8)
	France	w	w	w	w	w	w	w	w	w	w	w	w
	Germany	33.6	(5.4)	26.8	(4.2)	28.8	(4.8)	36.4	(5.5)	28.6	(5.4)	28.2	(5.0)
	Greece	53.8	(6.3)	63.0	(4.4)	51.6	(6.1)	60.4	(5.4)	46.7	(5.8)	57.7	(5.6)
	Hungary	17.5	(4.3)	32.3	(5.2)	19.0	(4.5)	30.7	(5.5)	18.0	(5.0)	26.3	(5.7)
	Iceland	18.7	(2.8)	32.4	(2.1)	20.2	(3.2)	27.1	(1.9)	16.5	(2.4)	27.6	(1.7)
	Ireland	54.4	(5.5)	54.6	(5.7)	52.7	(5.2)	61.1	(5.2)	50.8	(4.9)	56.7	(5.0)
	Italy	30.6	(4.1)	40.2	(3.7)	21.2	(2.9)	34.9	(3.3)	28.3	(3.8)	38.2	(3.6)
	Japan	27.3	(4.5)	29.8	(4.6)	21.8	(4.1)	31.5	(4.7)	29.9	(4.8)	37.9	(5.4)
	Korea	28.3	(5.0)	37.1	(5.6)	47.8	(5.5)	56.0	(6.6)	49.7	(6.3)	59.8	(6.1)
	Luxembourg	18.2	(2.9)	14.5	(1.0)	39.0	(3.4)	47.5	(1.5)	27.4	(3.4)	38.9	(1.3)
	Mexico	70.2	(3.6)	79.9	(4.0)	62.3	(4.1)	59.1	(5.8)	69.4	(3.9)	79.4	(3.5)
	Netherlands	27.0	(5.1)	32.4	(6.1)	8.6	(2.3)	17.0	(4.9)	17.6	(4.1)	23.2	(6.6)
	New Zealand	30.8	(4.8)	26.7	(4.3)	15.0	(4.0)	14.8	(4.0)	28.4	(4.5)	26.8	(4.5)
	Norway	70.3	(4.0)	63.2	(4.9)	48.3	(5.0)	48.5	(4.4)	45.2	(5.1)	38.7	(4.7)
Poland	52.2	(5.6)	49.7	(4.5)	41.5	(5.2)	37.7	(4.5)	41.6	(5.9)	39.4	(5.0)	
Portugal	67.8	(5.6)	71.3	(4.9)	35.6	(5.9)	48.0	(6.1)	55.2	(5.8)	47.1	(5.8)	
Slovak Republic	58.2	(5.9)	44.6	(6.5)	66.1	(5.5)	62.9	(5.2)	62.4	(4.8)	58.7	(6.2)	
Spain	49.7	(4.2)	54.8	(4.1)	36.6	(4.0)	41.4	(4.2)	40.6	(4.0)	45.4	(4.0)	
Sweden	49.5	(5.4)	43.5	(4.1)	32.2	(5.1)	30.4	(4.3)	35.5	(5.0)	41.3	(4.3)	
Switzerland	10.8	(2.5)	17.7	(3.2)	13.3	(3.0)	22.2	(3.9)	16.3	(3.6)	15.3	(2.8)	
Turkey	63.2	(5.7)	61.5	(5.0)	66.8	(6.1)	67.5	(5.2)	75.3	(4.8)	74.5	(3.9)	
United Kingdom	31.7	(5.1)	30.3	(4.3)	29.3	(4.8)	26.9	(4.5)	27.0	(4.4)	23.7	(4.2)	
United States	25.3	(5.1)	30.3	(7.3)	20.6	(5.0)	20.5	(4.7)	25.5	(5.2)	22.1	(5.0)	
OECD average	38.0	(0.9)	40.1	(0.9)	33.6	(0.9)	37.2	(0.9)	37.0	(0.9)	39.6	(0.9)	
Partners	Argentina	59.3	(6.4)	69.6	(6.2)	27.2	(4.8)	46.0	(6.1)	52.9	(5.9)	64.8	(4.5)
	Azerbaijan	87.2	(4.5)	91.0	(3.9)	72.3	(6.2)	68.8	(4.5)	89.8	(3.9)	84.9	(5.9)
	Brazil	83.1	(3.1)	84.8	(2.9)	66.3	(5.5)	71.3	(3.6)	65.1	(5.0)	68.0	(3.6)
	Bulgaria	51.8	(6.5)	51.4	(6.7)	59.1	(6.2)	64.6	(6.1)	67.5	(5.8)	71.4	(5.6)
	Chile	62.2	(7.6)	58.7	(5.9)	55.1	(8.2)	62.1	(6.0)	42.4	(6.4)	60.0	(6.2)
	Colombia	80.6	(6.7)	82.8	(4.3)	74.3	(6.3)	79.1	(5.3)	69.5	(7.1)	80.0	(5.0)
	Croatia	67.0	(5.0)	64.7	(4.8)	46.4	(5.7)	42.7	(5.2)	60.7	(5.7)	65.6	(4.6)
	Estonia	45.8	(5.6)	51.4	(5.1)	47.2	(5.7)	40.8	(5.4)	55.0	(5.9)	62.6	(5.3)
	Hong Kong-China	30.2	(4.6)	34.8	(4.8)	19.4	(4.3)	27.8	(5.8)	24.9	(4.8)	26.1	(5.0)
	Indonesia	67.4	(6.5)	82.4	(4.0)	82.2	(4.0)	77.2	(4.7)	80.6	(4.8)	83.7	(3.3)
	Israel	26.1	(5.0)	32.4	(5.4)	37.2	(5.6)	35.6	(4.6)	45.2	(6.1)	44.8	(6.4)
	Jordan	73.9	(5.0)	73.8	(4.8)	52.9	(5.5)	55.0	(6.0)	65.3	(4.8)	66.7	(5.4)
	Kyrgyzstan	97.1	(1.4)	96.0	(2.1)	93.0	(2.5)	94.7	(2.6)	95.0	(1.9)	97.5	(1.4)
	Latvia	36.5	(5.4)	39.3	(6.4)	39.4	(6.7)	44.8	(6.0)	56.1	(5.8)	50.8	(6.7)
	Lithuania	47.1	(5.4)	56.0	(4.4)	35.1	(5.2)	38.2	(3.8)	53.3	(5.7)	53.5	(5.1)
	Macao-China	30.5	(2.2)	25.1	(1.4)	33.0	(2.5)	33.6	(1.8)	29.5	(2.4)	29.3	(1.6)
	Montenegro	73.0	(3.9)	70.3	(1.7)	66.3	(2.9)	63.4	(1.7)	72.3	(2.8)	75.2	(1.6)
	Romania	63.6	(8.7)	71.4	(6.3)	47.6	(9.9)	46.7	(6.3)	50.0	(9.8)	82.8	(3.5)
	Russian Federation	85.0	(3.2)	86.5	(2.8)	80.3	(3.5)	81.5	(2.8)	87.6	(2.8)	87.6	(2.8)
	Serbia	60.7	(5.8)	55.2	(5.1)	50.5	(6.3)	54.9	(5.4)	53.5	(5.4)	68.4	(4.8)
Slovenia	22.7	(2.7)	26.9	(1.9)	9.1	(2.4)	15.0	(1.6)	22.3	(3.6)	25.7	(2.5)	
Chinese Taipei	25.1	(4.8)	32.2	(7.1)	24.8	(4.5)	34.2	(7.0)	24.2	(4.3)	34.2	(7.2)	
Thailand	64.3	(5.8)	71.7	(4.7)	63.0	(6.0)	73.5	(4.9)	66.2	(6.1)	76.7	(4.8)	
Tunisia	66.9	(6.3)	67.6	(5.3)	74.6	(6.2)	75.5	(4.6)	65.7	(6.1)	62.3	(4.6)	
Uruguay	65.9	(4.2)	69.9	(5.5)	58.5	(4.5)	53.5	(5.8)	64.6	(4.1)	61.1	(5.0)	



Table A2.14b Quality of school educational resources, by student group

	Quality of school educational resources					
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers	
	Mean	S.E.	Mean	S.E.	Dif	S.E.
OECD						
Australia	0.26	(0.08)	0.15	(0.06)	0.11	(0.06)
Austria	0.35	(0.10)	0.30	(0.13)	0.05	(0.15)
Belgium	-0.08	(0.08)	-0.01	(0.08)	-0.07	(0.10)
Canada	0.06	(0.08)	0.04	(0.05)	0.02	(0.06)
Czech Republic	-0.11	(0.08)	-0.12	(0.08)	0.01	(0.09)
Denmark	-0.03	(0.10)	-0.18	(0.07)	0.15	(0.07)
Finland	-0.25	(0.07)	-0.19	(0.06)	-0.06	(0.06)
France	w	w	w	w	w	w
Germany	0.19	(0.11)	0.02	(0.11)	0.17	(0.12)
Greece	-0.04	(0.09)	-0.26	(0.08)	0.22	(0.10)
Hungary	0.24	(0.08)	0.13	(0.11)	0.11	(0.12)
Iceland	0.22	(0.07)	0.04	(0.04)	0.18	(0.08)
Ireland	-0.34	(0.08)	-0.33	(0.11)	-0.01	(0.09)
Italy	0.31	(0.08)	-0.03	(0.07)	0.33	(0.10)
Japan	0.46	(0.09)	0.28	(0.09)	0.17	(0.10)
Korea	-0.12	(0.08)	-0.23	(0.12)	0.11	(0.12)
Luxembourg	0.28	(0.08)	0.29	(0.03)	-0.01	(0.08)
Mexico	-1.13	(0.08)	-1.33	(0.08)	0.21	(0.10)
Netherlands	0.43	(0.10)	0.16	(0.11)	0.27	(0.15)
New Zealand	0.26	(0.10)	0.18	(0.10)	0.07	(0.10)
Norway	-0.48	(0.06)	-0.41	(0.06)	-0.06	(0.06)
Poland	-0.15	(0.09)	-0.14	(0.06)	-0.00	(0.07)
Portugal	-0.37	(0.08)	-0.42	(0.08)	0.05	(0.09)
Slovak Republic	-0.60	(0.09)	-0.47	(0.09)	-0.13	(0.11)
Spain	-0.06	(0.08)	-0.17	(0.07)	0.11	(0.08)
Sweden	-0.05	(0.08)	-0.06	(0.08)	0.01	(0.08)
Switzerland	0.82	(0.09)	0.53	(0.07)	0.30	(0.09)
Turkey	-0.95	(0.10)	-0.96	(0.09)	0.01	(0.11)
United Kingdom	0.08	(0.11)	0.11	(0.09)	-0.03	(0.10)
United States	0.27	(0.10)	0.14	(0.14)	0.13	(0.14)
OECD average	-0.02	(0.02)	-0.10	(0.02)	0.08	(0.02)
Partners						
Argentina	-0.47	(0.12)	-1.06	(0.11)	0.60	(0.15)
Azerbaijan	-1.51	(0.15)	-1.50	(0.09)	-0.01	(0.17)
Brazil	-1.32	(0.08)	-1.63	(0.07)	0.31	(0.10)
Bulgaria	-0.57	(0.10)	-0.67	(0.08)	0.10	(0.11)
Chile	-0.66	(0.14)	-1.03	(0.15)	0.36	(0.15)
Colombia	-1.36	(0.15)	-1.50	(0.09)	0.14	(0.14)
Croatia	-0.54	(0.09)	-0.61	(0.08)	0.07	(0.09)
Estonia	-0.33	(0.06)	-0.29	(0.07)	-0.04	(0.07)
Hong Kong-China	0.33	(0.10)	0.22	(0.11)	0.11	(0.12)
Indonesia	-1.70	(0.19)	-2.05	(0.14)	0.35	(0.22)
Israel	-0.05	(0.11)	-0.04	(0.13)	-0.02	(0.12)
Jordan	-0.95	(0.11)	-0.96	(0.09)	0.01	(0.10)
Kyrgyzstan	-2.47	(0.07)	-2.52	(0.10)	0.05	(0.11)
Latvia	-0.53	(0.07)	-0.55	(0.07)	0.02	(0.08)
Lithuania	-0.45	(0.07)	-0.44	(0.06)	-0.01	(0.07)
Macao-China	0.07	(0.04)	0.07	(0.02)	0.01	(0.04)
Montenegro	-1.18	(0.07)	-1.26	(0.04)	0.08	(0.08)
Romania	-0.65	(0.10)	-1.10	(0.12)	0.45	(0.14)
Russian Federation	-1.22	(0.06)	-1.31	(0.05)	0.09	(0.06)
Serbia	-0.62	(0.07)	-0.74	(0.06)	0.12	(0.08)
Slovenia	0.26	(0.06)	0.20	(0.05)	0.06	(0.07)
Chinese Taipei	0.54	(0.15)	0.19	(0.30)	0.35	(0.28)
Thailand	-0.91	(0.11)	-1.21	(0.09)	0.30	(0.11)
Tunisia	-0.69	(0.10)	-0.72	(0.09)	0.03	(0.10)
Uruguay	-1.06	(0.12)	-1.20	(0.12)	0.14	(0.15)

Note: Values that are statistically different are indicated in bold.



Table A2.14c Relationship between being resilient and index of the quality of school educational resources

	Increased likelihood of being resilient associate with one unit increase of index of the quality of school educational resources					
	Ratio	S.E.	After accounting for ESCS, gender, immigrant background, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant background, grade, using test language	
			Ratio	S.E.	Ratio	S.E.
OECD						
Australia	1.08	(0.06)	1.00	(0.07)	1.07	(0.07)
Austria	1.03	(0.11)	1.00	(-0.10)	1.14	(0.12)
Belgium	0.92	(0.11)	1.00	(-0.11)	1.13	(0.12)
Canada	1.03	(0.07)	1.00	(0.00)	1.08	(0.07)
Czech Republic	1.07	(0.14)	1.00	(0.08)	1.16	(0.14)
Denmark	1.22	(0.10)	2.72	(0.20)	1.11	(0.11)
Finland	0.94	(0.10)	1.00	(-0.03)	1.11	(0.11)
France	w	w	w	w	w	w
Germany	1.15	(0.11)	1.00	(0.12)	1.13	(0.12)
Greece	1.22	(0.13)	1.00	(0.13)	1.14	(0.11)
Hungary	1.14	(0.12)	1.00	(0.07)	1.11	(0.13)
Iceland	1.19	(0.11)	1.00	(0.17)	1.11	(0.12)
Ireland	0.98	(0.10)	1.00	(-0.02)	1.09	(0.10)
Italy	1.29	(0.08)	2.72	(0.21)	1.10	(0.09)
Japan	1.18	(0.09)	1.00	(0.17)	1.16	(0.09)
Korea	1.13	(0.15)	1.00	(0.17)	1.10	(0.13)
Luxembourg	1.00	(0.09)	1.00	(0.04)	1.09	(0.10)
Mexico	1.16	(0.09)	1.00	(-0.01)	1.16	(0.09)
Netherlands	1.30	(0.15)	1.00	(0.24)	1.10	(0.14)
New Zealand	1.10	(0.10)	1.00	(0.12)	1.16	(0.09)
Norway	0.94	(0.15)	1.00	(-0.04)	1.10	(0.14)
Poland	0.96	(0.09)	1.00	(-0.06)	1.13	(0.09)
Portugal	1.05	(0.14)	1.00	(-0.00)	1.14	(0.12)
Slovak Republic	0.83	(0.14)	1.00	(-0.15)	1.09	(0.14)
Spain	1.08	(0.07)	1.00	(0.02)	1.10	(0.08)
Sweden	0.99	(0.09)	1.00	(-0.00)	1.09	(0.09)
Switzerland	1.27	(0.07)	2.72	(0.17)	1.14	(0.08)
Turkey	0.94	(0.12)	1.00	(-0.16)	1.09	(0.11)
United Kingdom	0.95	(0.09)	1.00	(-0.05)	1.09	(0.08)
United States	1.06	(0.10)	1.00	(-0.05)	1.08	(0.09)
OECD average	1.07	(0.02)	2.72	(0.04)	1.26	(0.02)
Partners						
Argentina	1.38	(0.08)	1.00	(0.20)	1.13	(0.08)
Azerbaijan	0.93	(0.23)	1.00	(-0.07)	1.16	(0.23)
Brazil	1.28	(0.11)	2.72	(0.09)	1.14	(0.13)
Bulgaria	1.19	(0.18)	1.00	(0.12)	1.14	(0.18)
Chile	1.34	(0.11)	2.72	(0.28)	1.12	(0.13)
Colombia	1.16	(0.16)	1.00	(0.12)	1.11	(0.14)
Croatia	1.10	(0.13)	1.00	(0.08)	1.08	(0.14)
Estonia	0.95	(0.13)	1.00	(-0.00)	1.12	(0.14)
Hong Kong-China	1.04	(0.10)	1.00	(0.03)	1.11	(0.10)
Indonesia	1.22	(0.12)	1.00	(0.13)	1.18	(0.11)
Israel	0.98	(0.07)	1.00	(-0.04)	1.15	(0.07)
Jordan	1.01	(0.12)	1.00	(-0.01)	1.13	(0.11)
Kyrgyzstan	1.03	(0.11)	1.00	(0.04)	1.09	(0.11)
Latvia	1.04	(0.17)	1.00	(-0.00)	1.18	(0.16)
Lithuania	0.92	(0.14)	1.00	(-0.10)	1.10	(0.13)
Macao-China	0.95	(0.10)	1.00	(-0.25)	1.19	(0.12)
Montenegro	1.06	(0.08)	1.00	(0.06)	1.11	(0.10)
Romania	1.57	(0.16)	2.72	(0.31)	1.09	(0.17)
Russian Federation	1.13	(0.09)	1.00	(0.03)	1.11	(0.10)
Serbia	1.15	(0.17)	1.00	(0.15)	1.14	(0.17)
Slovenia	1.10	(0.10)	1.00	(0.11)	1.09	(0.16)
Chinese Taipei	1.10	(0.08)	1.00	(0.05)	1.00	(0.08)
Thailand	1.26	(0.11)	2.72	(0.14)	1.00	(0.11)
Tunisia	1.08	(0.14)	1.00	(0.08)	1.00	(0.14)
Uruguay	1.06	(0.09)	1.00	(-0.04)	1.00	(0.09)

Note: Values that are statistically different are indicated in bold.



[Part 1/2] **Table A2.15a School activities to promote the learning of science (underlying percentages), by student group**

		Percentage of principals who reported their school is involved in following activities											
		Science clubs				Science fairs				Science competitions			
		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)	
		%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD	Australia	28.8	(3.9)	24.1	(3.5)	27.6	(3.8)	29.8	(3.4)	96.9	(1.4)	96.8	(1.3)
	Austria	26.5	(5.1)	12.8	(3.5)	38.9	(6.3)	15.1	(4.7)	35.8	(5.6)	14.1	(3.9)
	Belgium	6.6	(3.4)	3.4	(1.3)	34.8	(4.5)	37.5	(5.1)	62.6	(4.3)	34.3	(4.5)
	Canada	48.0	(3.3)	41.3	(3.0)	58.8	(3.4)	53.0	(3.2)	64.9	(3.1)	61.7	(2.7)
	Czech Republic	51.7	(6.4)	40.9	(3.9)	67.3	(5.8)	51.2	(5.0)	80.4	(4.8)	71.9	(4.7)
	Denmark	3.4	(3.0)	2.8	(1.7)	28.4	(4.9)	25.2	(4.5)	10.7	(3.9)	9.4	(3.1)
	Finland	7.1	(2.5)	9.2	(2.9)	6.7	(2.4)	9.2	(2.5)	29.2	(5.1)	34.4	(4.8)
	France	w	w	w	w	w	w	w	w	w	w	w	w
	Germany	55.7	(5.0)	30.4	(4.3)	38.2	(5.8)	15.0	(3.4)	56.8	(5.4)	20.1	(3.7)
	Greece	9.9	(3.5)	7.6	(3.1)	5.3	(2.8)	5.8	(2.7)	71.1	(5.1)	39.4	(4.1)
	Hungary	66.1	(6.5)	63.7	(6.2)	72.2	(5.5)	60.7	(5.3)	86.7	(4.3)	76.1	(4.8)
	Iceland	4.0	(1.3)	4.6	(0.9)	6.2	(1.9)	8.7	(1.1)	19.3	(2.8)	23.0	(2.0)
	Ireland	21.1	(4.4)	14.4	(3.2)	57.6	(5.6)	60.3	(5.4)	55.0	(5.2)	39.5	(4.5)
	Italy	36.1	(3.6)	32.8	(3.8)	13.6	(3.1)	11.1	(2.4)	33.0	(3.4)	22.2	(2.9)
	Japan	54.3	(5.1)	29.3	(4.7)	14.7	(4.2)	3.9	(1.6)	9.2	(3.2)	2.0	(1.1)
	Korea	87.4	(3.6)	75.6	(5.6)	45.1	(6.2)	43.2	(6.9)	86.2	(5.7)	73.7	(5.6)
	Luxembourg	35.5	(3.6)	20.8	(1.1)	62.3	(4.5)	66.9	(1.4)	40.4	(3.6)	36.6	(1.3)
	Mexico	18.9	(2.7)	9.6	(3.0)	35.3	(3.2)	18.0	(3.7)	75.1	(4.3)	54.1	(5.6)
	Netherlands	10.3	(3.2)	4.9	(2.4)	29.0	(5.7)	8.9	(2.9)	51.9	(6.7)	13.3	(4.5)
	New Zealand	32.3	(4.2)	24.3	(3.7)	75.8	(4.5)	71.8	(4.3)	90.2	(3.7)	87.8	(3.7)
Norway	1.1	(1.0)	0.8	(0.7)	34.9	(5.1)	40.3	(4.9)	13.1	(3.1)	16.5	(3.4)	
Poland	79.0	(4.5)	74.4	(4.3)	21.9	(4.6)	18.0	(3.3)	100.0	(0.0)	100.0	(0.0)	
Portugal	71.3	(5.4)	72.2	(4.6)	61.6	(6.4)	55.7	(5.9)	65.3	(6.0)	60.7	(5.5)	
Slovak Republic	78.2	(4.7)	75.1	(4.4)	70.2	(5.5)	59.2	(5.6)	84.2	(3.8)	75.4	(5.9)	
Spain	67.4	(4.3)	70.9	(3.9)	54.8	(3.9)	54.8	(4.0)	33.9	(3.8)	32.5	(4.0)	
Sweden	7.3	(3.2)	5.3	(1.6)	19.2	(4.0)	27.7	(3.4)	55.5	(5.5)	54.7	(3.8)	
Switzerland	38.1	(3.9)	35.2	(4.0)	49.5	(4.1)	36.0	(3.5)	24.2	(3.3)	10.5	(1.6)	
Turkey	39.6	(5.8)	27.4	(5.5)	25.6	(5.0)	14.3	(3.9)	53.7	(6.7)	39.8	(7.1)	
United Kingdom	71.1	(3.8)	75.0	(3.0)	34.6	(4.2)	34.1	(4.2)	69.6	(4.2)	65.6	(4.1)	
United States	69.2	(5.2)	71.0	(5.6)	40.0	(5.6)	57.8	(5.3)	54.5	(5.9)	51.2	(6.0)	
OECD average	38.8	(0.8)	33.1	(0.7)	39.0	(0.9)	34.3	(0.8)	55.5	(0.8)	45.4	(0.8)	
Partners	Argentina	19.3	(5.3)	10.6	(3.6)	73.1	(5.1)	70.0	(5.9)	54.6	(5.7)	40.1	(7.5)
	Azerbaijan	75.7	(6.1)	64.7	(6.3)	33.7	(6.7)	29.3	(5.8)	83.2	(6.3)	65.6	(7.5)
	Brazil	4.6	(1.9)	3.3	(1.2)	84.3	(3.7)	76.2	(4.5)	28.4	(4.8)	38.4	(4.8)
	Bulgaria					16.1	(4.3)	10.0	(3.2)	84.1	(5.0)	61.5	(7.2)
	Chile	38.9	(7.0)	32.9	(5.7)	40.8	(6.8)	32.2	(6.4)	35.7	(6.7)	26.5	(6.4)
	Colombia	95.1	(2.2)	92.5	(2.6)	73.0	(8.4)	63.3	(7.5)	58.3	(7.5)	53.7	(6.6)
	Croatia	19.9	(4.4)	17.7	(4.2)	44.7	(5.2)	41.7	(5.7)	78.3	(4.5)	63.5	(4.8)
	Estonia	49.2	(5.6)	44.3	(5.1)	87.0	(3.0)	84.6	(3.2)	76.9	(5.6)	86.9	(3.3)
	Hong Kong-China	93.5	(2.5)	85.9	(5.3)	56.9	(5.9)	53.3	(6.0)	90.5	(3.3)	87.8	(4.2)
	Indonesia	61.8	(6.6)	47.7	(5.8)	34.7	(7.9)	7.1	(2.4)	68.9	(6.2)	47.5	(5.2)
	Israel	55.9	(6.1)	62.0	(5.0)	25.5	(4.8)	37.0	(6.7)	58.2	(5.5)	58.4	(5.2)
	Jordan	70.6	(4.6)	57.8	(5.8)	82.4	(3.8)	77.1	(3.0)	75.7	(4.9)	72.1	(4.5)
	Kyrgyzstan	81.4	(5.6)	77.6	(5.3)	71.6	(6.2)	71.2	(4.8)	98.6	(1.1)	97.2	(2.0)
	Latvia	14.2	(3.7)	10.6	(2.9)	5.1	(2.5)	8.6	(4.2)	92.2	(4.1)	93.1	(2.7)
	Lithuania	76.3	(4.9)	73.3	(4.4)	98.0	(1.3)	96.1	(1.8)	88.9	(3.7)	89.5	(2.5)
	Macao-China	56.7	(2.8)	43.8	(2.2)	33.5	(2.7)	32.8	(2.3)	92.6	(1.3)	91.1	(1.2)
	Montenegro	68.0	(3.4)	65.3	(2.1)	22.7	(2.9)	39.3	(1.8)	76.3	(2.6)	77.3	(1.5)
	Romania	80.7	(5.4)	51.4	(6.2)	69.3	(7.0)	43.3	(5.9)	92.6	(3.7)	86.5	(4.7)
	Russian Federation	84.9	(3.8)	81.2	(4.2)	82.7	(3.3)	82.0	(3.2)	98.5	(0.9)	96.8	(1.9)
	Serbia	79.9	(5.1)	78.4	(5.0)	41.6	(4.7)	28.5	(4.1)	85.3	(4.6)	77.1	(5.0)
Slovenia	94.8	(1.1)	88.0	(1.3)	90.3	(1.8)	75.3	(1.7)	89.9	(2.4)	70.4	(1.3)	
Chinese Taipei	84.8	(3.5)	60.4	(5.8)	80.8	(4.0)	53.6	(6.3)	78.4	(4.3)	52.9	(6.4)	
Thailand	82.8	(5.6)	76.5	(5.1)	97.5	(1.4)	98.6	(0.9)	97.1	(1.3)	95.6	(1.2)	
Tunisia	85.5	(4.1)	84.6	(4.9)	60.6	(7.3)	52.6	(7.2)	60.4	(6.9)	38.2	(6.9)	
Uruguay	27.5	(3.8)	37.5	(5.4)	55.5	(5.1)	60.1	(5.4)	32.9	(4.5)	26.4	(5.0)	

Note: Values that are statistically different are indicated in bold.

[Part 2/2] **Table A2.15a School activities to promote the learning of science (underlying percentages), by student group**

		Percentage of principals who reported their school is involved in following activities							
		Extracurricular science projects (including research)				Excursions and field trips			
		Resilient students		Disadvantaged low achievers (DLA)		Resilient students		Disadvantaged low achievers (DLA)	
		%	S.E.	%	S.E.	%	S.E.	%	S.E.
OECD	Australia	67.4	(3.9)	65.6	(3.7)	96.6	(1.7)	96.5	(1.3)
	Austria	41.0	(5.9)	12.0	(2.7)	94.1	(2.0)	84.2	(3.5)
	Belgium	56.4	(5.2)	40.3	(4.7)	88.7	(3.3)	88.5	(3.1)
	Canada	65.1	(3.2)	63.4	(3.4)	93.6	(1.5)	92.8	(1.3)
	Czech Republic	53.1	(6.0)	35.1	(4.2)	97.6	(2.8)	98.3	(1.0)
	Denmark	19.1	(4.3)	13.2	(3.1)	90.3	(2.7)	85.1	(3.6)
	Finland	24.1	(4.7)	24.5	(4.4)	93.3	(2.7)	92.5	(2.8)
	France	w	w	w	w	w	w	w	w
	Germany	45.7	(5.7)	22.4	(4.2)	96.3	(2.2)	92.4	(3.0)
	Greece	20.1	(4.8)	18.4	(4.5)	86.8	(4.3)	81.8	(4.6)
	Hungary	37.3	(7.1)	28.7	(4.9)	98.0	(1.8)	96.6	(1.8)
	Iceland	13.6	(2.6)	24.0	(2.2)	94.5	(1.3)	92.6	(1.2)
	Ireland	52.0	(5.2)	49.1	(5.5)	93.8	(2.3)	93.2	(2.6)
	Italy	77.4	(3.3)	66.2	(3.8)	98.0	(0.6)	93.6	(1.7)
	Japan	22.5	(4.9)	15.0	(4.5)	30.0	(4.6)	30.7	(6.4)
	Korea	44.5	(6.0)	27.2	(5.5)	81.0	(4.2)	78.8	(5.3)
	Luxembourg	52.9	(4.1)	35.4	(1.4)	92.4	(2.6)	88.2	(0.8)
	Mexico	50.2	(4.1)	37.7	(5.2)	78.1	(3.4)	69.9	(4.8)
	Netherlands	44.0	(5.6)	26.0	(5.0)	85.3	(4.4)	85.2	(5.1)
	New Zealand	60.6	(4.8)	56.3	(5.0)	92.2	(3.5)	95.4	(1.8)
	Norway	36.9	(5.2)	42.6	(5.0)	94.1	(2.1)	92.9	(3.1)
	Poland	48.8	(5.2)	42.5	(4.5)	99.3	(0.8)	97.9	(1.8)
	Portugal	88.6	(4.0)	79.1	(5.3)	95.3	(2.2)	89.7	(4.1)
	Slovak Republic	46.3	(6.1)	37.4	(6.1)	99.6	(0.6)	99.5	(0.6)
	Spain	33.8	(4.1)	31.6	(4.5)	95.9	(1.1)	95.3	(1.7)
	Sweden	26.3	(4.9)	31.3	(4.8)	78.7	(5.7)	80.6	(4.0)
	Switzerland	28.0	(3.8)	21.2	(2.6)	95.9	(1.4)	94.9	(1.3)
	Turkey	51.1	(6.1)	39.5	(6.7)	76.7	(4.5)	73.1	(4.8)
	United Kingdom	56.9	(5.2)	61.2	(4.7)	84.1	(4.2)	83.9	(3.6)
	United States	60.5	(5.7)	70.9	(4.5)	88.8	(5.0)	92.5	(3.5)
OECD average	45.7	(0.9)	38.5	(0.8)	89.3	(0.6)	87.5	(0.6)	
Partners	Argentina	67.5	(6.7)	68.6	(6.0)	85.0	(4.3)	67.6	(6.8)
	Azerbaijan	19.6	(6.6)	22.9	(5.7)	95.8	(1.5)	89.7	(3.3)
	Brazil	87.0	(3.4)	77.8	(4.2)	83.9	(3.7)	76.6	(4.2)
	Bulgaria	54.7	(6.9)	28.2	(5.4)	87.3	(3.6)	86.6	(5.3)
	Chile	43.3	(7.7)	31.4	(6.5)	70.3	(7.9)	67.4	(7.4)
	Colombia	70.0	(7.7)	66.8	(7.4)	85.6	(4.0)	82.9	(4.6)
	Croatia	59.7	(5.6)	48.1	(4.7)	93.3	(2.8)	85.5	(4.6)
	Estonia	92.5	(3.4)	82.7	(4.6)	97.7	(1.6)	91.7	(3.7)
	Hong Kong-China	77.2	(4.4)	81.0	(4.3)	86.6	(4.3)	92.2	(3.2)
	Indonesia	49.8	(6.7)	31.2	(5.4)	78.5	(5.7)	62.9	(5.9)
	Israel	61.2	(6.3)	59.2	(5.2)	88.5	(4.1)	89.1	(2.9)
	Jordan	87.3	(4.7)	79.8	(4.0)	90.4	(3.5)	90.9	(2.9)
	Kyrgyzstan	37.5	(6.1)	24.6	(4.4)	92.7	(3.0)	95.7	(1.7)
	Latvia	87.8	(4.5)	84.3	(4.5)	98.6	(1.1)	98.6	(0.8)
	Lithuania	67.0	(5.3)	69.5	(4.6)	98.7	(1.3)	99.0	(0.8)
	Macao-China	94.7	(1.0)	95.2	(0.7)	62.7	(2.6)	70.9	(1.8)
	Montenegro	56.3	(3.3)	62.4	(1.9)	75.1	(3.1)	86.8	(1.5)
	Romania	67.0	(7.5)	35.9	(5.0)	100.0	(0.0)	100.0	(0.0)
	Russian Federation	81.0	(3.3)	72.2	(3.9)	99.3	(0.6)	97.9	(1.5)
	Serbia	51.8	(5.9)	27.5	(4.9)	68.3	(5.8)	61.2	(5.6)
Slovenia	79.3	(3.2)	72.9	(1.7)	93.5	(2.3)	96.8	(0.3)	
Chinese Taipei	78.5	(3.8)	57.5	(5.8)	87.1	(3.2)	90.5	(3.4)	
Thailand	90.8	(2.8)	85.2	(4.2)	95.9	(2.9)	95.4	(2.7)	
Tunisia	57.6	(6.6)	47.8	(6.4)	79.5	(5.7)	67.2	(5.5)	
Uruguay	60.0	(5.0)	52.3	(4.8)	83.3	(3.7)	83.1	(4.1)	



Table A2.15b School activities to promote the learning of science, by student group

	School activities to promote the learning of science					
	Resilient students		Disadvantaged low achievers (DLA)		Difference in the mean index between resilient students and disadvantaged low achievers	
	Mean	S.E.	Mean	S.E.	Dif	S.E.
OECD						
Australia	0.35	(0.05)	0.32	(0.04)	0.03	(0.04)
Austria	-0.19	(0.11)	-0.88	(0.09)	0.69	(0.13)
Belgium	-0.09	(0.08)	-0.42	(0.09)	0.33	(0.10)
Canada	0.45	(0.07)	0.32	(0.05)	0.13	(0.06)
Czech Republic	0.56	(0.10)	0.21	(0.07)	0.35	(0.11)
Denmark	-0.76	(0.08)	-0.90	(0.08)	0.14	(0.08)
Finland	-0.68	(0.07)	-0.62	(0.08)	-0.06	(0.06)
France	w	w	w	w	w	w
Germany	0.17	(0.10)	-0.57	(0.08)	0.74	(0.12)
Greece	-0.41	(0.09)	-0.74	(0.08)	0.33	(0.11)
Hungary	0.62	(0.11)	0.38	(0.09)	0.24	(0.13)
Iceland	-0.83	(0.04)	-0.71	(0.03)	-0.12	(0.05)
Ireland	0.11	(0.09)	-0.05	(0.09)	0.15	(0.08)
Italy	-0.00	(0.05)	-0.23	(0.07)	0.22	(0.07)
Japan	-1.04	(0.13)	-1.43	(0.10)	0.38	(0.15)
Korea	0.53	(0.09)	0.21	(0.12)	0.33	(0.11)
Luxembourg	0.10	(0.10)	-0.15	(0.03)	0.24	(0.11)
Mexico	-0.04	(0.06)	-0.49	(0.08)	0.45	(0.09)
Netherlands	-0.35	(0.14)	-0.87	(0.11)	0.52	(0.15)
New Zealand	0.52	(0.11)	0.43	(0.08)	0.10	(0.11)
Norway	-0.55	(0.07)	-0.48	(0.07)	-0.07	(0.08)
Poland	0.53	(0.05)	0.44	(0.05)	0.09	(0.05)
Portugal	0.75	(0.09)	0.60	(0.11)	0.15	(0.11)
Slovak Republic	0.73	(0.07)	0.52	(0.08)	0.20	(0.09)
Spain	0.15	(0.07)	0.13	(0.08)	0.02	(0.07)
Sweden	-0.58	(0.12)	-0.49	(0.09)	-0.09	(0.09)
Switzerland	-0.20	(0.06)	-0.44	(0.04)	0.23	(0.06)
Turkey	-0.16	(0.12)	-0.54	(0.14)	0.38	(0.16)
United Kingdom	0.35	(0.10)	0.38	(0.08)	-0.02	(0.09)
United States	0.29	(0.13)	0.50	(0.12)	-0.21	(0.13)
OECD average	0.01	(0.02)	-0.19	(0.02)	0.20	(0.02)
Partners						
Argentina	0.20	(0.13)	-0.01	(0.11)	0.21	(0.15)
Azerbaijan	0.30	(0.11)	0.03	(0.11)	0.27	(0.13)
Brazil	0.22	(0.06)	0.07	(0.07)	0.15	(0.09)
Bulgaria	0.08	(0.08)	-0.37	(0.12)	0.44	(0.14)
Chile	-0.36	(0.22)	-0.62	(0.20)	0.26	(0.21)
Colombia	0.78	(0.12)	0.66	(0.11)	0.12	(0.08)
Croatia	0.19	(0.10)	-0.09	(0.12)	0.28	(0.12)
Estonia	0.88	(0.06)	0.80	(0.07)	0.07	(0.07)
Hong Kong-China	0.91	(0.08)	0.88	(0.09)	0.03	(0.09)
Indonesia	0.13	(0.19)	-0.51	(0.12)	0.64	(0.21)
Israel	0.15	(0.11)	0.26	(0.11)	-0.12	(0.11)
Jordan	0.95	(0.09)	0.75	(0.08)	0.20	(0.10)
Kyrgyzstan	0.76	(0.10)	0.64	(0.07)	0.12	(0.10)
Latvia	0.21	(0.06)	0.18	(0.05)	0.03	(0.06)
Lithuania	1.08	(0.07)	1.06	(0.05)	0.02	(0.07)
Macao-China	0.48	(0.03)	0.41	(0.03)	0.07	(0.05)
Montenegro	0.15	(0.09)	0.42	(0.04)	-0.27	(0.10)
Romania	0.97	(0.14)	0.37	(0.10)	0.60	(0.16)
Russian Federation	1.22	(0.06)	1.09	(0.06)	0.14	(0.06)
Serbia	0.37	(0.13)	0.02	(0.10)	0.36	(0.13)
Slovenia	1.26	(0.04)	0.92	(0.02)	0.33	(0.05)
Chinese Taipei	0.96	(0.09)	0.33	(0.13)	0.64	(0.17)
Thailand	1.36	(0.07)	1.26	(0.07)	0.10	(0.06)
Tunisia	0.51	(0.13)	0.16	(0.15)	0.34	(0.15)
Uruguay	-0.06	(0.09)	-0.06	(0.09)	0.00	(0.11)

Note: Values that are statistically different are indicated in bold.

Table A2.15c Relationship between being resilient and index of school activities to promote the learning of science

		Increased likelihood of being resilient associate with one unit increase of index of school activities to promote the learning of science					
		Ratio	S.E.	After accounting for ESCS, gender, immigrant background, grade, using test language		After accounting for Mean ESCS, ESCS, gender, immigrant background, grade, using test language	
				Ratio	S.E.	Ratio	S.E.
OECD	Australia	1.05	(0.10)	1.00	(0.01)	1.10	(0.10)
	Austria	2.00	(0.12)	2.72	(0.78)	1.13	(0.13)
	Belgium	1.49	(0.13)	2.72	(0.33)	1.13	(0.14)
	Canada	1.14	(0.06)	2.72	(0.14)	1.07	(0.07)
	Czech Republic	1.42	(0.11)	2.72	(0.57)	1.13	(0.13)
	Denmark	1.27	(0.12)	2.72	(0.27)	1.14	(0.13)
	Finland	0.91	(0.11)	1.00	-(-0.08)	1.11	(0.11)
	France	w	w	w	w	w	w
	Germany	2.01	(0.14)	2.72	(0.55)	1.15	(0.14)
	Greece	1.38	(0.14)	2.72	(0.23)	1.22	(0.14)
	Hungary	1.40	(0.20)	1.00	(0.36)	1.14	(0.19)
	Iceland	0.74	(0.13)	2.72	-(-0.30)	1.09	(0.13)
	Ireland	1.10	(0.09)	1.00	(0.07)	1.10	(0.09)
	Italy	1.29	(0.10)	2.72	(0.21)	1.12	(0.09)
	Japan	1.40	(0.11)	2.72	(0.31)	1.13	(0.11)
	Korea	1.33	(0.12)	2.72	(0.28)	1.12	(0.12)
	Luxembourg	1.20	(0.10)	1.00	(0.20)	1.09	(0.12)
	Mexico	1.53	(0.09)	2.72	(0.03)	1.21	(0.08)
	Netherlands	1.71	(0.19)	2.72	(0.57)	1.17	(0.19)
	New Zealand	1.14	(0.16)	1.00	(0.15)	1.13	(0.15)
	Norway	0.95	(0.13)	1.00	-(-0.05)	1.14	(0.12)
	Poland	1.36	(0.13)	2.72	(0.34)	1.17	(0.14)
	Portugal	1.13	(0.14)	1.00	-(-0.20)	1.14	(0.16)
	Slovak Republic	1.33	(0.12)	2.72	(0.46)	1.10	(0.12)
	Spain	1.03	(0.09)	1.00	(0.06)	1.09	(0.09)
	Sweden	0.91	(0.09)	1.00	-(-0.07)	1.11	(0.09)
	Switzerland	1.49	(0.11)	2.72	(0.45)	1.12	(0.10)
	Turkey	1.31	(0.11)	2.72	(0.29)	1.10	(0.11)
	United Kingdom	0.98	(0.09)	1.00	(0.01)	1.11	(0.10)
	United States	0.84	(0.12)	1.00	-(-0.14)	1.16	(0.10)
	OECD average	1.24	(0.02)	2.72	(0.20)	1.20	(0.02)
Partners	Argentina	1.18	(0.15)	1.00	(0.13)	1.13	(0.13)
	Azerbaijan	1.42	(0.18)	1.00	(0.32)	1.14	(0.18)
	Brazil	1.18	(0.12)	1.00	(0.06)	1.09	(0.14)
	Bulgaria	1.83	(0.17)	2.72	(0.52)	1.18	(0.17)
	Chile	1.17	(0.12)	1.00	(0.15)	1.19	(0.11)
	Colombia	1.19	(0.11)	1.00	(0.15)	1.13	(0.14)
	Croatia	1.20	(0.09)	2.72	(0.20)	1.10	(0.09)
	Estonia	1.10	(0.15)	1.00	(0.04)	1.13	(0.17)
	Hong Kong-China	1.05	(0.17)	1.00	(0.06)	1.19	(0.17)
	Indonesia	1.50	(0.14)	2.72	(0.31)	1.38	(0.13)
	Israel	0.90	(0.09)	1.00	-(-0.10)	1.15	(0.10)
	Jordan	1.29	(0.13)	2.72	(0.19)	1.10	(0.12)
	Kyrgyzstan	1.18	(0.18)	1.00	(0.17)	1.10	(0.18)
	Latvia	1.21	(0.32)	1.00	(0.11)	1.26	(0.31)
	Lithuania	0.98	(0.15)	1.00	-(-0.10)	1.18	(0.14)
	Macao-China	1.05	(0.09)	1.00	(0.09)	1.16	(0.10)
	Montenegro	0.84	(0.09)	1.00	-(-0.20)	1.14	(0.10)
	Romania	1.95	(0.24)	2.72	(0.57)	1.17	(0.23)
	Russian Federation	1.32	(0.16)	1.00	(0.33)	1.18	(0.17)
	Serbia	1.37	(0.15)	2.72	(0.32)	1.10	(0.14)
	Slovenia	1.73	(0.13)	2.72	(0.52)	1.10	(0.14)
	Chinese Taipei	1.62	(0.15)	2.72	(0.56)	1.00	(0.15)
	Thailand	1.27	(0.19)	1.00	(0.17)	1.00	(0.16)
Tunisia	1.29	(0.11)	2.72	(0.08)	1.00	(0.10)	
Uruguay	0.98	(0.09)	1.00	-(-0.02)	1.00	(0.10)	

Note: Values that are statistically different are indicated in bold.



[Part 1/2]
Table A2.16 Combined model

	Interest in science		Science activities		Science efficacy		School preparation for science career		Number of hours students report spending in regular lessons at school learning science	
	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.
OECD										
Australia	1.20	0.08	1.18	0.06	1.99	0.06	1.15	0.05	1.20	0.03
Austria	1.22	0.23	1.13	0.14	2.23	0.14	0.95	0.10	1.28	0.06
Belgium	1.22	0.12	1.15	0.10	2.22	0.11	0.83	0.09	1.31	0.04
Canada	1.16	0.10	1.12	0.07	1.94	0.09	1.12	0.06	1.15	0.04
Czech Republic	1.15	0.17	1.10	0.12	1.88	0.16	0.93	0.16	1.46	0.06
Denmark	1.28	0.13	1.19	0.10	2.06	0.14	1.17	0.11	1.16	0.08
Finland	1.43	0.13	1.06	0.11	2.37	0.15	0.97	0.09	1.36	0.05
France	1.35	0.14	1.06	0.15	1.98	0.18	1.25	0.14	1.32	0.07
Germany	1.17	0.14	1.11	0.16	1.93	0.17	0.94	0.10	1.28	0.07
Greece	1.26	0.18	1.06	0.11	1.76	0.13	0.76	0.14	1.42	0.05
Hungary	1.20	0.14	1.09	0.16	1.88	0.23	0.72	0.12	1.36	0.08
Iceland	1.15	0.10	1.27	0.14	1.84	0.13	1.19	0.11	1.13	0.06
Ireland	1.22	(0.12)	1.22	(0.10)	2.34	(0.13)	0.96	(0.10)	1.19	(0.06)
Italy	1.12	(0.09)	1.11	(0.07)	1.67	(0.07)	0.83	(0.08)	1.31	(0.04)
Japan	1.55	(0.11)	1.05	(0.10)	1.37	(0.11)	0.90	(0.11)	1.22	(0.08)
Korea	1.92	(0.13)	1.05	(0.09)	1.81	(0.16)	0.68	(0.11)	1.27	(0.07)
Luxembourg	1.44	(0.14)	1.05	(0.12)	1.74	(0.16)	0.74	(0.11)	1.20	(0.07)
Mexico	1.37	(0.07)	0.75	(0.11)	1.58	(0.09)	0.86	(0.08)	1.02	(0.03)
Netherlands	1.28	(0.17)	1.19	(0.14)	1.48	(0.14)	1.20	(0.17)	1.32	(0.07)
New Zealand	1.12	(0.12)	1.05	(0.11)	2.56	(0.15)	1.12	(0.11)	1.31	(0.07)
Norway	1.23	(0.08)	1.20	(0.10)	1.86	(0.11)	1.04	(0.10)	1.19	(0.08)
Poland	1.49	(0.15)	0.70	(0.12)	2.64	(0.14)	0.62	(0.10)	1.32	(0.06)
Portugal	1.31	(0.13)	1.12	(0.14)	2.11	(0.15)	0.80	(0.15)	1.12	(0.06)
Slovak Republic	1.24	(0.15)	1.23	(0.18)	1.76	(0.15)	0.55	(0.12)	1.48	(0.06)
Spain	1.24	(0.10)	0.95	(0.09)	1.92	(0.10)	0.90	(0.09)	1.36	(0.04)
Sweden	1.21	(0.20)	1.10	(0.12)	2.33	(0.12)	0.96	(0.12)	1.32	(0.07)
Switzerland	1.51	(0.15)	0.94	(0.13)	1.98	(0.10)	1.20	(0.08)	1.26	(0.06)
Turkey	1.12	(0.12)	0.94	(0.14)	1.55	(0.13)	0.85	(0.11)	1.32	(0.05)
United Kingdom	0.96	(0.10)	1.10	(0.10)	3.02	(0.09)	1.09	(0.08)	1.43	(0.06)
United States	1.07	(0.09)	1.25	(0.17)	1.75	(0.09)	1.07	(0.11)	1.29	(0.05)
OECD average	1.26	(0.02)	1.08	(0.02)	1.95	(0.02)	0.93	(0.02)	1.27	(0.01)
Partners										
Argentina	1.17	(0.14)	0.82	(0.12)	1.86	(0.14)	0.77	(0.12)	1.17	(0.07)
Azerbaijan	1.13	(0.08)	0.86	(0.13)	1.11	(0.09)	1.01	(0.10)	1.13	(0.05)
Brazil	1.05	(0.08)	0.74	(0.12)	1.54	(0.13)	0.76	(0.10)	1.41	(0.06)
Bulgaria	1.26	(0.13)	0.82	(0.14)	1.59	(0.10)	0.79	(0.10)	1.27	(0.08)
Chile	1.10	(0.14)	1.14	(0.12)	1.61	(0.14)	0.64	(0.12)	1.36	(0.07)
Colombia	1.03	(0.13)	1.00	(0.16)	1.59	(0.15)	0.74	(0.11)	1.10	(0.08)
Croatia	1.39	(0.14)	0.96	(0.13)	2.47	(0.12)	0.75	(0.13)	1.18	(0.04)
Estonia	1.34	(0.16)	0.90	(0.15)	2.75	(0.12)	0.74	(0.12)	1.31	(0.06)
Hong Kong-China	1.47	(0.11)	0.95	(0.10)	1.64	(0.11)	0.99	(0.12)	1.29	(0.04)
Indonesia	1.54	(0.16)	0.82	(0.14)	1.18	(0.11)	0.92	(0.11)	1.18	(0.05)
Israel	1.34	(0.11)	0.83	(0.13)	1.29	(0.11)	0.87	(0.10)	1.32	(0.05)
Jordan	1.36	(0.10)	0.85	(0.10)	1.35	(0.09)	0.85	(0.10)	1.20	(0.05)
Kyrgyzstan	1.18	(0.10)	0.43	(0.14)	1.30	(0.12)	1.03	(0.10)	1.12	(0.04)
Latvia	0.91	(0.18)	0.86	(0.15)	2.42	(0.14)	0.94	(0.13)	1.37	(0.08)
Lithuania	1.55	(0.14)	0.79	(0.14)	1.75	(0.13)	1.04	(0.12)	1.23	(0.05)
Macao-China	1.64	(0.14)	1.10	(0.13)	1.66	(0.14)	0.65	(0.12)	1.17	(0.05)
Montenegro	1.38	(0.14)	0.73	(0.14)	2.23	(0.11)	0.67	(0.15)	1.27	(0.05)
Romania	1.42	(0.11)	0.77	(0.17)	1.45	(0.15)	0.76	(0.18)	1.29	(0.08)
Russian Federation	1.05	(0.15)	0.87	(0.10)	1.95	(0.10)	0.85	(0.08)	1.30	(0.06)
Serbia	1.07	(0.11)	0.87	(0.15)	1.97	(0.11)	0.76	(0.12)	1.23	(0.05)
Slovenia	1.09	(0.14)	1.02	(0.14)	1.98	(0.12)	0.93	(0.14)	1.31	(0.06)
Chinese Taipei	1.53	(0.09)	0.97	(0.13)	1.68	(0.10)	0.70	(0.10)	1.35	(0.06)
Thailand	1.26	(0.12)	1.41	(0.20)	1.10	(0.12)	1.02	(0.10)	1.56	(0.08)
Tunisia	1.23	(0.13)	0.74	(0.15)	1.41	(0.12)	0.99	(0.10)	1.20	(0.05)
Uruguay	1.01	(0.16)	1.03	(0.12)	1.83	(0.12)	0.91	(0.15)	1.25	(0.06)

Note: Values that are statistically different are indicated in bold.

[Part 2/2]
Table A2.16 Combined model

	Students in private schools		Students in schools which compete with other schools		Students in schools which select based on academic record		Index of school activities to promote the learning of science		Index of the quality of school educational resources	
	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.
OECD										
Australia	w	w	0.96	0.21	c	c	0.94	0.10	1.04	0.08
Austria	c	c	0.79	0.27	2.67	0.36	1.15	0.13	0.96	0.14
Belgium	w	w	0.88	0.41	1.23	0.22	1.09	0.14	0.93	0.12
Canada	c	c	1.05	0.15	c	c	1.19	0.08	0.95	0.08
Czech Republic	c	c	0.90	0.36	1.70	0.42	1.25	0.16	0.97	0.14
Denmark	0.88	0.27	0.81	0.32	c	c	1.21	0.14	1.12	0.13
Finland	c	c	0.85	0.18	c	c	0.97	0.14	0.96	0.12
France	w	w	w	w	w	w	w	w	w	w
Germany	c	c	0.83	0.34	1.45	0.26	1.24	0.14	0.98	0.13
Greece	c	c	0.89	0.22	0.71	0.59	1.06	0.16	1.05	0.10
Hungary	c	c	0.91	0.32	1.85	0.36	1.18	0.18	1.22	0.15
Iceland	c	c	0.80	0.22	c	c	0.69	0.15	1.17	0.14
Ireland	0.92	(0.22)	0.80	(0.29)	c	c	0.94	(0.11)	0.97	(0.11)
Italy	c	c	1.28	(0.20)	c	c	0.88	(0.10)	1.09	(0.09)
Japan	0.35	(0.22)	0.88	(0.40)	1.45	(0.35)	1.13	(0.12)	1.12	(0.08)
Korea	1.02	(0.19)	1.05	(0.31)	1.30	(0.21)	0.96	(0.13)	1.17	(0.13)
Luxembourg	0.65	(0.37)	1.14	(0.23)	1.24	(0.36)	1.04	(0.14)	1.09	(0.15)
Mexico	c	c	0.70	(0.28)	1.25	(0.17)	0.93	(0.08)	1.00	(0.09)
Netherlands	1.20	(0.29)	0.62	(0.52)	0.97	(0.29)	1.16	(0.18)	1.29	(0.14)
New Zealand	c	c	0.64	(0.32)	c	c	1.12	(0.15)	1.05	(0.10)
Norway	c	c	0.90	(0.18)	c	c	0.96	(0.13)	0.98	(0.16)
Poland	c	c	0.90	(0.17)	c	c	1.45	(0.16)	1.00	(0.10)
Portugal	c	c	0.95	(0.26)	c	c	0.80	(0.19)	0.94	(0.13)
Slovak Republic	c	c	0.47	(0.46)	1.58	(0.31)	1.15	(0.15)	0.85	(0.13)
Spain	0.78	(0.20)	0.92	(0.23)	c	c	1.04	(0.09)	1.04	(0.09)
Sweden	c	c	1.06	(0.19)	c	c	0.89	(0.10)	0.94	(0.11)
Switzerland	c	c	0.77	(0.19)	1.32	(0.27)	1.13	(0.11)	1.24	(0.09)
Turkey	c	c	1.08	(0.25)	1.71	(0.29)	1.04	(0.11)	0.86	(0.11)
United Kingdom	c	c	c	c	c	c	1.05	(0.12)	0.90	(0.08)
United States	c	c	0.89	(0.19)	c	c	0.86	(0.11)	0.97	(0.11)
OECD average	0.62	(0.10)	0.87	(0.05)	1.64	(0.32)	1.04	(0.02)	1.02	(0.02)
Partners										
Argentina	1.04	(0.28)	1.31	(0.29)	c	c	1.01	(0.12)	1.10	(0.09)
Azerbaijan	c	c	m	m	0.83	(0.39)	1.49	(0.19)	0.84	(0.28)
Brazil	c	c	0.82	(0.20)	c	c	1.13	(0.15)	1.06	(0.13)
Bulgaria	m	m	0.77	(0.34)	0.77	(0.37)	1.19	(0.16)	0.94	(0.17)
Chile	1.17	(0.28)	0.64	(0.35)	1.20	(0.29)	1.01	(0.11)	1.16	(0.15)
Colombia	c	c	0.97	(0.30)	1.71	(0.32)	1.18	(0.14)	1.00	(0.13)
Croatia	c	c	0.99	(0.26)	1.19	(0.34)	1.05	(0.09)	1.07	(0.14)
Estonia	c	c	1.07	(0.32)	0.99	(0.26)	1.05	(0.19)	0.97	(0.15)
Hong Kong-China	0.89	(0.52)	c	c	1.18	(0.34)	1.01	(0.18)	0.99	(0.11)
Indonesia	0.84	(0.28)	c	c	1.33	(0.23)	1.27	(0.13)	1.01	(0.10)
Israel	1.00	(0.31)	0.92	(0.27)	1.12	(0.23)	0.83	(0.12)	0.96	(0.07)
Jordan	2.13	(0.26)	0.83	(0.22)	1.07	(0.26)	1.19	(0.12)	1.00	(0.12)
Kyrgyzstan	c	c	0.98	(0.25)	1.14	(0.32)	1.04	(0.17)	0.92	(0.11)
Latvia	c	c	c	c	1.16	(0.25)	1.11	(0.30)	0.99	(0.17)
Lithuania	c	c	0.76	(0.21)	c	c	0.77	(0.14)	0.84	(0.13)
Macao-China	1.01	(0.52)	1.59	(0.43)	c	c	0.99	(0.10)	0.75	(0.17)
Montenegro	c	c	2.08	(0.89)	1.25	(0.20)	0.85	(0.12)	1.02	(0.12)
Romania	c	c	0.90	(0.36)	1.64	(0.26)	1.41	(0.23)	0.94	(0.16)
Russian Federation	c	c	0.85	(0.19)	0.71	(0.36)	1.23	(0.17)	1.07	(0.10)
Serbia	c	c	0.64	(0.27)	2.33	(0.47)	1.14	(0.13)	1.19	(0.17)
Slovenia	c	c	1.06	(0.22)	1.16	(0.25)	0.98	(0.15)	1.00	(0.17)
Chinese Taipei	0.31	(0.26)	c	c	1.26	(0.22)	1.19	(0.12)	0.91	(0.08)
Thailand	0.64	(0.51)	1.14	(0.28)	0.86	(0.22)	0.88	(0.21)	1.10	(0.12)
Tunisia	c	c	1.08	(0.19)	0.82	(0.25)	1.16	(0.10)	1.08	(0.14)
Uruguay	c	c	1.06	(0.24)	c	c	0.97	(0.10)	0.90	(0.11)

Note: Values that are statistically different are indicated in bold.

ANNEX A3: CLOSING THE GAP? ENHANCING THE PERFORMANCE OF SOCIO-ECONOMICALLY DISADVANTAGED STUDENTS

Table A3.1a ^[Part 1/3] Approaches to learning among disadvantaged and non-disadvantaged students

	General interest in science						Instrumental motivation to learn science						Participation in science related activities						
	Non-disadvantaged students		Disadvantaged students		Difference		Non-disadvantaged students		Disadvantaged students		Difference		Non-disadvantaged students		Disadvantaged students		Difference		
	Mean	S.E.	Mean	S.E.	Dif.	S.E.	Mean	S.E.	Mean	S.E.	Dif.	S.E.	Mean	S.E.	Mean	S.E.	Dif.	S.E.	
OECD	Australia	-0.12	(0.01)	-0.40	(0.02)	0.28	(0.03)	0.19	(0.02)	-0.06	(0.02)	0.25	(0.03)	-0.20	(0.02)	-0.46	(0.02)	0.26	(0.02)
	Austria	0.12	(0.02)	-0.09	(0.03)	0.21	(0.03)	-0.39	(0.03)	-0.43	(0.05)	0.04	(0.05)	0.08	(0.02)	-0.12	(0.03)	0.19	(0.04)
	Belgium	0.13	(0.02)	-0.18	(0.03)	0.31	(0.04)	-0.17	(0.02)	-0.32	(0.03)	0.15	(0.03)	0.08	(0.02)	-0.12	(0.03)	0.20	(0.03)
	Canada	0.18	(0.01)	-0.04	(0.02)	0.22	(0.02)	0.41	(0.02)	0.14	(0.03)	0.27	(0.03)	-0.07	(0.02)	-0.31	(0.02)	0.24	(0.03)
	Czech Republic	-0.00	(0.02)	-0.09	(0.03)	0.09	(0.03)	-0.24	(0.02)	-0.24	(0.03)	0.00	(0.03)	0.08	(0.02)	0.01	(0.03)	0.07	(0.03)
	Denmark	-0.07	(0.02)	-0.37	(0.04)	0.29	(0.04)	0.09	(0.02)	-0.06	(0.02)	0.15	(0.03)	-0.05	(0.02)	-0.34	(0.03)	0.29	(0.03)
	Finland	-0.16	(0.02)	-0.42	(0.03)	0.26	(0.03)	-0.13	(0.02)	-0.38	(0.03)	0.25	(0.03)	-0.10	(0.02)	-0.27	(0.03)	0.17	(0.03)
	France	0.31	(0.02)	-0.01	(0.03)	0.32	(0.04)	0.03	(0.03)	-0.28	(0.03)	0.31	(0.04)	0.09	(0.02)	-0.20	(0.03)	0.29	(0.03)
	Germany	0.24	(0.02)	0.09	(0.03)	0.16	(0.03)	-0.04	(0.02)	-0.13	(0.03)	0.08	(0.04)	0.21	(0.02)	-0.07	(0.03)	0.28	(0.03)
	Greece	0.30	(0.02)	-0.02	(0.03)	0.31	(0.03)	0.12	(0.02)	0.00	(0.02)	0.12	(0.03)	0.36	(0.02)	0.10	(0.03)	0.26	(0.03)
	Hungary	-0.02	(0.02)	-0.17	(0.02)	0.15	(0.03)	-0.08	(0.03)	-0.06	(0.03)	-0.02	(0.03)	0.38	(0.02)	0.22	(0.03)	0.16	(0.03)
	Iceland	-0.04	(0.02)	-0.35	(0.04)	0.31	(0.04)	0.20	(0.03)	-0.13	(0.03)	0.33	(0.04)	-0.12	(0.02)	-0.39	(0.03)	0.26	(0.04)
	Ireland	-0.01	(0.02)	-0.42	(0.03)	0.41	(0.03)	0.26	(0.02)	-0.09	(0.03)	0.35	(0.04)	-0.33	(0.02)	-0.64	(0.03)	0.31	(0.04)
	Italy	0.24	(0.01)	0.07	(0.02)	0.17	(0.02)	0.17	(0.02)	0.01	(0.02)	0.16	(0.02)	0.33	(0.01)	0.12	(0.02)	0.22	(0.02)
	Japan	-0.03	(0.02)	-0.32	(0.03)	0.29	(0.04)	-0.33	(0.03)	-0.63	(0.03)	0.29	(0.03)	-0.56	(0.02)	-0.75	(0.02)	0.20	(0.03)
	Korea	-0.15	(0.02)	-0.43	(0.03)	0.27	(0.03)	-0.22	(0.03)	-0.34	(0.02)	0.12	(0.04)	-0.07	(0.03)	-0.41	(0.03)	0.34	(0.04)
	Luxembourg	0.22	(0.02)	-0.01	(0.03)	0.23	(0.03)	-0.11	(0.02)	-0.20	(0.03)	0.09	(0.04)	0.19	(0.02)	-0.05	(0.03)	0.24	(0.03)
	Mexico	0.74	(0.01)	0.81	(0.03)	-0.07	(0.03)	0.51	(0.01)	0.60	(0.02)	-0.10	(0.02)	0.73	(0.01)	0.73	(0.03)	-0.00	(0.03)
	Netherlands	-0.27	(0.02)	-0.50	(0.04)	0.23	(0.04)	-0.19	(0.02)	-0.28	(0.03)	0.09	(0.04)	-1.18	(0.02)	-0.44	(0.03)	0.26	(0.03)
	New Zealand	-0.02	(0.02)	-0.24	(0.04)	0.23	(0.04)	0.26	(0.02)	0.02	(0.03)	0.25	(0.04)	-0.17	(0.02)	-0.42	(0.03)	0.25	(0.03)
	Norway	0.08	(0.03)	-0.26	(0.04)	0.34	(0.04)	-0.09	(0.02)	-0.30	(0.03)	0.21	(0.03)	-0.02	(0.02)	-0.29	(0.03)	0.28	(0.04)
	Poland	0.09	(0.02)	-0.01	(0.02)	0.10	(0.02)	0.15	(0.02)	0.18	(0.02)	-0.03	(0.02)	0.68	(0.01)	0.57	(0.02)	0.11	(0.02)
	Portugal	0.22	(0.02)	0.05	(0.03)	0.17	(0.03)	0.57	(0.02)	0.25	(0.03)	0.32	(0.04)	0.51	(0.02)	0.33	(0.03)	0.18	(0.03)
	Slovak Republic	-0.04	(0.02)	-0.26	(0.03)	0.22	(0.04)	-0.18	(0.02)	-0.20	(0.03)	0.03	(0.03)	0.27	(0.02)	0.16	(0.04)	0.10	(0.03)
	Spain	-0.09	(0.01)	-0.36	(0.03)	0.27	(0.03)	0.14	(0.02)	-0.11	(0.02)	0.26	(0.03)	-0.06	(0.02)	-0.31	(0.02)	0.25	(0.03)
	Sweden	-0.02	(0.03)	-0.35	(0.04)	0.33	(0.04)	0.03	(0.02)	-0.22	(0.03)	0.25	(0.04)	-0.31	(0.02)	-0.62	(0.03)	0.32	(0.03)
	Switzerland	0.10	(0.02)	-0.19	(0.02)	0.29	(0.02)	-0.19	(0.02)	-0.38	(0.02)	0.18	(0.02)	0.10	(0.02)	-0.12	(0.02)	0.23	(0.02)
	Turkey	0.26	(0.03)	0.16	(0.03)	0.09	(0.04)	0.34	(0.03)	0.34	(0.03)	0.00	(0.04)	0.63	(0.03)	0.45	(0.04)	0.18	(0.05)
	United Kingdom	0.06	(0.02)	-0.16	(0.03)	0.22	(0.03)	0.24	(0.02)	0.04	(0.03)	0.20	(0.03)	-0.25	(0.02)	-0.56	(0.03)	0.32	(0.03)
	United States	0.07	(0.02)	-0.04	(0.04)	0.10	(0.04)	0.33	(0.02)	0.19	(0.02)	0.14	(0.03)	-0.05	(0.02)	-0.15	(0.03)	0.10	(0.03)
	OECD average	0.08	(0.00)	-0.15	(0.01)	0.23	(0.01)	0.06	(0.00)	-0.10	(0.01)	0.16	(0.01)	0.7	(0.00)	-0.15	(0.01)	0.22	(0.01)
Partners	Argentina	0.20	(0.03)	0.26	(0.04)	-0.06	(0.05)	0.42	(0.02)	0.49	(0.03)	-0.07	(0.04)	0.42	(0.04)	0.45	(0.04)	-0.03	(0.05)
	Azerbaijan	0.67	(0.03)	0.47	(0.04)	0.20	(0.04)	0.55	(0.03)	0.55	(0.03)	-0.01	(0.03)	1.25	(0.02)	1.16	(0.03)	0.09	(0.03)
	Brazil	0.51	(0.02)	0.52	(0.04)	-0.01	(0.04)	0.45	(0.02)	0.55	(0.02)	-0.10	(0.03)	0.55	(0.02)	0.50	(0.03)	0.05	(0.03)
	Bulgaria	0.24	(0.02)	0.07	(0.04)	0.17	(0.05)	0.34	(0.02)	0.39	(0.03)	-0.06	(0.03)	0.84	(0.02)	0.64	(0.03)	0.20	(0.03)
	Chile	0.35	(0.02)	0.37	(0.03)	-0.02	(0.03)	0.54	(0.04)	0.47	(0.04)	0.07	(0.04)	0.51	(0.02)	0.44	(0.03)	0.07	(0.04)
	Colombia	1.09	(0.03)	1.27	(0.03)	-0.18	(0.04)	0.61	(0.02)	0.72	(0.04)	-0.11	(0.04)	1.01	(0.02)	0.96	(0.03)	0.06	(0.03)
	Croatia	0.21	(0.02)	0.10	(0.03)	0.11	(0.03)	0.04	(0.03)	0.06	(0.04)	-0.02	(0.04)	0.40	(0.02)	0.28	(0.02)	0.13	(0.03)
	Estonia	0.25	(0.01)	0.07	(0.03)	0.18	(0.03)	0.08	(0.02)	0.02	(0.02)	0.06	(0.02)	0.43	(0.02)	0.33	(0.03)	0.10	(0.03)
	Hong Kong-China	0.25	(0.02)	0.07	(0.03)	0.18	(0.04)	0.16	(0.02)	0.16	(0.03)	0.00	(0.04)	0.36	(0.02)	0.06	(0.03)	0.29	(0.03)
	Indonesia	0.60	(0.02)	0.47	(0.02)	0.13	(0.03)	0.78	(0.03)	0.73	(0.03)	0.05	(0.04)	0.68	(0.02)	0.35	(0.03)	0.32	(0.03)
	Israel	-0.22	(0.03)	-0.17	(0.05)	-0.05	(0.06)	-0.37	(0.03)	-0.36	(0.04)	-0.02	(0.05)	0.08	(0.03)	0.22	(0.04)	-0.13	(0.05)
	Jordan	0.74	(0.02)	0.55	(0.03)	0.18	(0.04)	0.85	(0.02)	0.72	(0.02)	0.13	(0.02)	1.00	(0.02)	0.90	(0.03)	0.10	(0.04)
	Kyrgyzstan	0.90	(0.02)	0.92	(0.03)	-0.02	(0.03)	0.81	(0.02)	0.92	(0.03)	-0.11	(0.03)	1.31	(0.02)	1.36	(0.03)	-0.05	(0.03)
	Latvia	0.20	(0.02)	0.10	(0.03)	0.10	(0.03)	0.01	(0.02)	0.00	(0.03)	0.01	(0.03)	0.29	(0.02)	0.18	(0.03)	0.11	(0.03)
	Lithuania	0.39	(0.01)	0.27	(0.02)	0.12	(0.02)	0.37	(0.02)	0.37	(0.02)	-0.01	(0.02)	0.28	(0.02)	0.22	(0.03)	0.06	(0.03)
	Macao-China	0.13	(0.02)	0.04	(0.02)	0.09	(0.03)	0.40	(0.02)	0.35	(0.03)	0.05	(0.04)	0.36	(0.02)	0.09	(0.02)	0.27	(0.03)
	Montenegro	0.44	(0.02)	0.36	(0.03)	0.08	(0.04)	0.42	(0.02)	0.50	(0.03)	-0.07	(0.03)	0.79	(0.02)	0.67	(0.02)	0.12	(0.03)
	Romania	0.43	(0.02)	0.29	(0.03)	0.14	(0.03)	0.40	(0.03)	0.40	(0.03)	-0.00	(0.03)	0.70	(0.02)	0.51	(0.03)	0.19	(0.04)
	Russian Federation	0.29	(0.02)	0.26	(0.04)	0.02	(0.03)	0.19	(0.02)	0.26	(0.02)	-0.07	(0.03)	0.59	(0.02)	0.51	(0.05)	0.08	(0.04)
	Serbia	0.27	(0.02)	0.23	(0.03)	0.04	(0.03)	0.08	(0.02)	0.16	(0.03)	-0.08	(0.04)	0.57	(0.02)	0.48	(0.02)	0.09	(0.02)
	Slovenia	0.07	(0.02)	-0.05	(0.02)	0.12	(0.03)	0.08	(0.02)	0.03	(0.02)	0.05	(0.03)	0.47	(0.02)	0.35	(0.02)	0.12	(0.02)
	Chinese Taipei	0.17	(0.02)	-0.08	(0.02)	0.25	(0.02)	0.32	(0.01)	0.18	(0.02)	0.14	(0.02)	0.50	(0.01)	0.21	(0.02)	0.29	(0.02)
	Thailand	0.80	(0.02)	0.77	(0.03)	0.04	(0.04)	0.73	(0.01)	0.68	(0.02)	0.05	(0.02)	1.16	(0.01)	0.99	(0.02)	0.16	(0.02)
	Tunisia	0.79	(0.02)	0.75	(0.03)	0.04	(0.03)	0.84	(0.02)	0.82	(0.03)	0.02	(0.04)	1.14	(0.02)	1.05	(0.02)	0.09	(0.02)
	Uruguay	0.24	(0.02)	0.26	(0.04)	-0.02	(0.05)	0.20	(0.02)	0.17	(0.03)								

[Part 2/3]
Table A3.1a Approaches to learning among disadvantaged and non-disadvantaged students

		Self-efficacy						Self-concept					
		Non-disadvantaged students		Disadvantaged students		Difference		Non-disadvantaged students		Disadvantaged students		Difference	
		Mean	S.E.	Mean	S.E.	Dif.	S.E.	Mean	S.E.	Mean	S.E.	Dif.	S.E.
OECD	Australia	0.28	(0.02)	-0.21	(0.02)	0.49	(0.02)	0.07	(0.02)	-0.25	(0.02)	0.31	(0.02)
	Austria	0.03	(0.02)	-0.40	(0.03)	0.43	(0.03)	0.17	(0.02)	-0.10	(0.04)	0.27	(0.04)
	Belgium	0.04	(0.02)	-0.30	(0.03)	0.34	(0.03)	-0.07	(0.02)	-0.29	(0.03)	0.22	(0.03)
	Canada	0.36	(0.02)	-0.08	(0.02)	0.44	(0.03)	0.37	(0.02)	0.05	(0.02)	0.32	(0.03)
	Czech Republic	0.22	(0.02)	-0.03	(0.03)	0.25	(0.03)	-0.01	(0.02)	-0.09	(0.02)	0.08	(0.03)
	Denmark	0.08	(0.03)	-0.39	(0.04)	0.47	(0.04)	0.01	(0.02)	-0.26	(0.03)	0.27	(0.03)
	Finland	0.14	(0.02)	-0.20	(0.03)	0.34	(0.03)	0.15	(0.02)	-0.11	(0.02)	0.26	(0.03)
	France	0.09	(0.02)	-0.35	(0.02)	0.43	(0.03)	-0.03	(0.02)	-0.27	(0.03)	0.23	(0.04)
	Germany	0.20	(0.02)	-0.22	(0.03)	0.42	(0.03)	0.33	(0.02)	0.10	(0.03)	0.23	(0.03)
	Greece	-0.01	(0.02)	-0.36	(0.03)	0.35	(0.04)	0.13	(0.02)	-0.16	(0.02)	0.29	(0.03)
	Hungary	0.06	(0.02)	-0.28	(0.02)	0.34	(0.03)	-0.19	(0.02)	-0.27	(0.03)	0.08	(0.04)
	Iceland	0.30	(0.02)	-0.18	(0.03)	0.48	(0.04)	0.27	(0.02)	-0.23	(0.03)	0.50	(0.04)
	Ireland	0.16	(0.02)	-0.31	(0.03)	0.47	(0.04)	-0.01	(0.02)	-0.37	(0.03)	0.36	(0.04)
	Italy	-0.12	(0.01)	-0.36	(0.02)	0.24	(0.02)	0.21	(0.02)	0.06	(0.02)	0.16	(0.02)
	Japan	-0.44	(0.02)	-0.72	(0.03)	0.29	(0.03)	-0.83	(0.02)	-0.96	(0.03)	0.13	(0.03)
	Korea	-0.10	(0.02)	-0.45	(0.04)	0.35	(0.05)	-0.61	(0.03)	-0.91	(0.03)	0.30	(0.04)
	Luxembourg	0.02	(0.02)	-0.43	(0.03)	0.45	(0.03)	0.33	(0.02)	0.06	(0.03)	0.26	(0.03)
	Mexico	0.18	(0.01)	-0.08	(0.03)	0.26	(0.03)	0.56	(0.01)	0.46	(0.02)	0.10	(0.02)
	Netherlands	0.12	(0.02)	-0.17	(0.03)	0.29	(0.03)	-0.26	(0.02)	-0.48	(0.04)	0.22	(0.04)
	New Zealand	0.14	(0.02)	-0.32	(0.03)	0.46	(0.03)	0.03	(0.02)	-0.23	(0.02)	0.26	(0.03)
	Norway	0.27	(0.02)	-0.17	(0.03)	0.44	(0.04)	0.14	(0.02)	-0.13	(0.03)	0.28	(0.04)
	Poland	0.39	(0.02)	0.00	(0.02)	0.39	(0.03)	0.13	(0.02)	-0.02	(0.02)	0.15	(0.02)
	Portugal	0.31	(0.02)	-0.01	(0.03)	0.33	(0.03)	0.37	(0.02)	0.18	(0.03)	0.19	(0.03)
	Slovak Republic	0.21	(0.02)	-0.11	(0.04)	0.32	(0.04)	0.21	(0.02)	0.03	(0.03)	0.17	(0.03)
	Spain	0.07	(0.02)	-0.34	(0.03)	0.41	(0.03)	0.09	(0.02)	-0.21	(0.02)	0.30	(0.03)
	Sweden	0.09	(0.03)	-0.38	(0.03)	0.46	(0.04)	0.13	(0.02)	-0.23	(0.03)	0.36	(0.03)
Switzerland	-0.05	(0.02)	-0.48	(0.02)	0.43	(0.02)	0.19	(0.02)	-0.09	(0.02)	0.28	(0.03)	
Turkey	0.11	(0.03)	-0.17	(0.04)	0.28	(0.05)	0.18	(0.04)	0.11	(0.04)	0.07	(0.05)	
United Kingdom	0.35	(0.02)	-0.12	(0.02)	0.48	(0.03)	0.09	(0.02)	-0.13	(0.02)	0.22	(0.03)	
United States	0.38	(0.02)	-0.08	(0.04)	0.46	(0.05)	0.30	(0.02)	0.02	(0.04)	0.28	(0.04)	
OECD average	0.13	(0.00)	-0.26	(0.01)	0.39	(0.01)	0.08	(0.00)	-0.16	(0.01)	0.24	(0.01)	
Partners	Argentina	0.06	(0.02)	-0.27	(0.03)	0.32	(0.04)	0.29	(0.03)	0.20	(0.04)	0.09	(0.05)
	Azerbaijan	-0.34	(0.03)	-0.69	(0.06)	0.36	(0.06)	0.66	(0.03)	0.61	(0.05)	0.05	(0.05)
	Brazil	0.06	(0.02)	-0.28	(0.03)	0.34	(0.04)	0.38	(0.02)	0.33	(0.03)	0.05	(0.03)
	Bulgaria	0.10	(0.03)	-0.34	(0.04)	0.44	(0.05)	0.39	(0.02)	0.32	(0.03)	0.07	(0.04)
	Chile	0.20	(0.02)	-0.22	(0.03)	0.42	(0.04)	0.24	(0.02)	0.05	(0.03)	0.19	(0.03)
	Colombia	0.19	(0.02)	-0.11	(0.03)	0.29	(0.03)	0.78	(0.02)	0.69	(0.04)	0.09	(0.03)
	Croatia	0.26	(0.02)	-0.09	(0.02)	0.35	(0.03)	0.01	(0.02)	-0.10	(0.03)	0.11	(0.03)
	Estonia	0.12	(0.02)	-0.15	(0.02)	0.27	(0.03)	0.18	(0.02)	-0.04	(0.02)	0.22	(0.03)
	Hong Kong-China	0.18	(0.02)	-0.17	(0.03)	0.35	(0.04)	-0.22	(0.02)	-0.32	(0.03)	0.10	(0.03)
	Indonesia	-0.61	(0.02)	-0.88	(0.03)	0.27	(0.03)	0.16	(0.04)	0.16	(0.03)	-0.00	(0.04)
	Israel	0.09	(0.03)	-0.12	(0.04)	0.21	(0.05)	0.30	(0.03)	0.21	(0.04)	0.09	(0.04)
	Jordan	0.30	(0.03)	0.04	(0.03)	0.26	(0.03)	0.82	(0.02)	0.60	(0.03)	0.22	(0.03)
	Kyrgyzstan	-0.08	(0.02)	-0.29	(0.03)	0.21	(0.03)	0.67	(0.02)	0.74	(0.03)	-0.08	(0.03)
	Latvia	0.07	(0.02)	-0.19	(0.03)	0.26	(0.03)	0.06	(0.02)	-0.03	(0.03)	0.09	(0.03)
	Lithuania	0.11	(0.02)	-0.18	(0.03)	0.29	(0.03)	-0.19	(0.02)	-0.34	(0.02)	0.15	(0.03)
	Macao-China	-0.00	(0.02)	-0.32	(0.03)	0.32	(0.03)	-0.08	(0.02)	-0.18	(0.03)	0.11	(0.04)
	Montenegro	0.12	(0.02)	-0.31	(0.03)	0.44	(0.03)	0.52	(0.02)	0.43	(0.03)	0.10	(0.03)
	Romania	-0.24	(0.03)	-0.56	(0.04)	0.32	(0.04)	0.37	(0.02)	0.30	(0.03)	0.06	(0.03)
	Russian Federation	0.10	(0.02)	-0.23	(0.04)	0.33	(0.04)	0.21	(0.02)	0.06	(0.03)	0.15	(0.03)
	Serbia	0.16	(0.02)	-0.17	(0.03)	0.33	(0.03)	0.25	(0.02)	0.23	(0.03)	0.02	(0.03)
Slovenia	0.03	(0.01)	-0.37	(0.02)	0.40	(0.02)	0.23	(0.02)	0.21	(0.02)	0.03	(0.03)	
Chinese Taipei	0.32	(0.02)	-0.10	(0.03)	0.42	(0.03)	-0.34	(0.02)	-0.53	(0.02)	0.19	(0.02)	
Thailand	0.12	(0.02)	-0.05	(0.02)	0.17	(0.03)	0.70	(0.02)	0.67	(0.02)	0.03	(0.03)	
Tunisia	-0.05	(0.02)	-0.23	(0.02)	0.18	(0.03)	0.67	(0.02)	0.58	(0.03)	0.08	(0.03)	
Uruguay	0.23	(0.02)	-0.09	(0.03)	0.32	(0.04)	0.39	(0.02)	0.26	(0.03)	0.13	(0.03)	



[Part 3/3]
Table A3.1a Approaches to learning among disadvantaged and non-disadvantaged students

	School preparation for science careers						Information in science related careers						
	Non-disadvantaged students		Disadvantaged students		Difference		Non-disadvantaged students		Disadvantaged students		Difference		
	Mean	S.E.	Mean	S.E.	Dif.	S.E.	Mean	S.E.	Mean	S.E.	Dif.	S.E.	
OECD	Australia	0.30	(0.02)	-0.04	(0.02)	0.34	(0.02)	0.26	(0.01)	-0.01	(0.02)	0.27	(0.02)
	Austria	-0.21	(0.04)	-0.30	(0.04)	0.10	(0.05)	-0.07	(0.02)	-0.16	(0.03)	0.10	(0.04)
	Belgium	-0.07	(0.02)	-0.24	(0.03)	0.17	(0.03)	-0.22	(0.02)	-0.26	(0.02)	0.04	(0.03)
	Canada	0.41	(0.02)	0.17	(0.02)	0.24	(0.02)	0.36	(0.02)	0.13	(0.02)	0.23	(0.03)
	Czech Republic	-0.17	(0.03)	-0.18	(0.03)	0.01	(0.03)	-0.07	(0.02)	-0.15	(0.03)	0.07	(0.04)
	Denmark	0.00	(0.02)	-0.14	(0.03)	0.14	(0.03)	-0.06	(0.02)	-0.20	(0.03)	0.15	(0.03)
	Finland	0.20	(0.02)	0.09	(0.02)	0.11	(0.03)	0.17	(0.02)	0.06	(0.02)	0.11	(0.03)
	France	0.17	(0.03)	-0.12	(0.03)	0.29	(0.04)	0.07	(0.02)	-0.14	(0.03)	0.21	(0.04)
	Germany	0.14	(0.03)	0.04	(0.03)	0.09	(0.04)	0.08	(0.02)	-0.10	(0.03)	0.19	(0.04)
	Greece	-0.14	(0.02)	-0.09	(0.03)	-0.05	(0.03)	0.42	(0.02)	0.16	(0.03)	0.27	(0.03)
	Hungary	0.04	(0.03)	0.04	(0.03)	0.00	(0.03)	0.01	(0.02)	-0.11	(0.03)	0.11	(0.03)
	Iceland	0.13	(0.02)	-0.09	(0.03)	0.22	(0.04)	0.02	(0.02)	-0.23	(0.03)	0.25	(0.03)
	Ireland	0.26	(0.03)	0.03	(0.03)	0.23	(0.03)	0.08	(0.02)	-0.17	(0.04)	0.26	(0.04)
	Italy	-0.06	(0.02)	-0.16	(0.02)	0.10	(0.03)	0.11	(0.01)	-0.01	(0.02)	0.13	(0.02)
	Japan	-0.46	(0.03)	-0.64	(0.03)	0.18	(0.03)	-0.35	(0.02)	-0.46	(0.02)	0.10	(0.02)
	Korea	-0.27	(0.03)	-0.28	(0.02)	0.01	(0.04)	-0.25	(0.02)	-0.50	(0.02)	0.24	(0.03)
	Luxembourg	-0.11	(0.02)	-0.11	(0.03)	0.00	(0.04)	-0.07	(0.02)	-0.17	(0.03)	0.10	(0.03)
	Mexico	0.47	(0.02)	0.50	(0.02)	-0.03	(0.02)	-0.38	(0.02)	-0.58	(0.05)	0.20	(0.04)
	Netherlands	-0.19	(0.01)	-0.34	(0.02)	0.14	(0.03)	-0.30	(0.02)	-0.44	(0.04)	0.14	(0.04)
	New Zealand	0.30	(0.02)	0.03	(0.02)	0.27	(0.03)	0.19	(0.02)	0.05	(0.03)	0.14	(0.04)
	Norway	-0.25	(0.03)	-0.43	(0.04)	0.17	(0.04)	-0.06	(0.02)	-0.22	(0.03)	0.16	(0.04)
Poland	-0.02	(0.02)	0.13	(0.03)	-0.15	(0.03)	0.36	(0.02)	0.19	(0.02)	0.17	(0.03)	
Portugal	0.26	(0.02)	0.13	(0.02)	0.14	(0.03)	0.48	(0.02)	0.24	(0.03)	0.24	(0.03)	
Slovak Republic	-0.13	(0.03)	-0.16	(0.04)	0.03	(0.04)	-0.02	(0.02)	-0.11	(0.03)	0.09	(0.03)	
Spain	0.11	(0.02)	-0.02	(0.02)	0.14	(0.03)	0.10	(0.02)	-0.17	(0.02)	0.27	(0.03)	
Sweden	-0.03	(0.02)	-0.17	(0.03)	0.14	(0.03)	-0.05	(0.02)	-0.28	(0.03)	0.23	(0.03)	
Switzerland	0.08	(0.02)	-0.09	(0.03)	0.17	(0.03)	0.09	(0.02)	-0.05	(0.02)	0.14	(0.02)	
Turkey	-0.16	(0.03)	-0.09	(0.03)	-0.07	(0.04)	0.40	(0.04)	0.03	(0.05)	0.37	(0.05)	
United Kingdom	0.31	(0.02)	0.02	(0.02)	0.29	(0.03)	0.05	(0.02)	-0.12	(0.03)	0.17	(0.03)	
United States	0.32	(0.02)	0.10	(0.02)	0.22	(0.03)	0.39	(0.02)	0.26	(0.04)	0.14	(0.04)	
OECD average	0.04	(0.00)	-0.08	(0.01)	0.12	(0.01)	0.06	(0.00)	-0.12	(0.01)	0.18	(0.01)	
Partners	Argentina	0.10	(0.03)	0.17	(0.03)	-0.08	(0.05)	-0.40	(0.04)	-0.67	(0.04)	0.27	(0.05)
	Azerbaijan	0.69	(0.02)	0.59	(0.03)	0.10	(0.03)	0.43	(0.02)	0.23	(0.04)	0.19	(0.04)
	Brazil	0.18	(0.02)	0.14	(0.03)	0.04	(0.03)	0.40	(0.02)	0.19	(0.03)	0.21	(0.03)
	Bulgaria	0.39	(0.02)	0.41	(0.03)	-0.02	(0.04)	0.29	(0.02)	0.16	(0.04)	0.13	(0.04)
	Chile	0.27	(0.04)	0.13	(0.04)	0.14	(0.04)	0.35	(0.03)	0.06	(0.04)	0.30	(0.04)
	Colombia	0.48	(0.03)	0.57	(0.04)	-0.09	(0.05)	0.02	(0.02)	-0.12	(0.04)	0.14	(0.04)
	Croatia	0.17	(0.02)	0.20	(0.03)	-0.03	(0.03)	0.09	(0.02)	-0.11	(0.02)	0.21	(0.03)
	Estonia	0.29	(0.02)	0.25	(0.02)	0.05	(0.03)	0.02	(0.02)	-0.08	(0.02)	0.09	(0.03)
	Hong Kong-China	-0.12	(0.02)	-0.15	(0.03)	0.03	(0.03)	0.28	(0.02)	0.12	(0.03)	0.15	(0.04)
	Indonesia	0.35	(0.04)	0.29	(0.02)	0.06	(0.05)	0.44	(0.03)	0.14	(0.03)	0.30	(0.03)
	Israel	-0.10	(0.03)	-0.04	(0.04)	-0.05	(0.05)	0.21	(0.03)	0.17	(0.04)	0.04	(0.05)
	Jordan	0.51	(0.02)	0.48	(0.03)	0.02	(0.03)	0.49	(0.02)	0.34	(0.03)	0.15	(0.03)
	Kyrgyzstan	0.63	(0.02)	0.65	(0.03)	-0.02	(0.03)	0.37	(0.02)	0.16	(0.04)	0.20	(0.04)
	Latvia	0.22	(0.02)	0.22	(0.03)	-0.00	(0.03)	0.08	(0.02)	-0.00	(0.03)	0.08	(0.03)
	Lithuania	0.45	(0.02)	0.39	(0.03)	0.05	(0.03)	0.31	(0.02)	0.07	(0.02)	0.24	(0.02)
	Macao-China	-0.15	(0.02)	-0.20	(0.02)	0.04	(0.02)	-0.03	(0.02)	-0.29	(0.02)	0.26	(0.03)
	Montenegro	0.31	(0.02)	0.39	(0.03)	-0.08	(0.04)	0.04	(0.02)	-0.17	(0.03)	0.20	(0.03)
	Romania	0.43	(0.04)	0.35	(0.03)	0.08	(0.05)	0.13	(0.02)	-0.08	(0.05)	0.20	(0.05)
	Russian Federation	0.31	(0.02)	0.28	(0.02)	0.03	(0.03)	0.43	(0.02)	0.31	(0.03)	0.12	(0.03)
	Serbia	0.12	(0.02)	0.22	(0.03)	-0.10	(0.04)	0.18	(0.02)	0.02	(0.02)	0.16	(0.03)
Slovenia	0.08	(0.02)	0.06	(0.02)	0.02	(0.03)	0.05	(0.02)	-0.03	(0.02)	0.08	(0.03)	
Chinese Taipei	0.27	(0.02)	0.22	(0.01)	0.05	(0.02)	0.14	(0.01)	-0.12	(0.02)	0.26	(0.02)	
Thailand	0.66	(0.02)	0.59	(0.02)	0.06	(0.02)	0.32	(0.02)	0.13	(0.03)	0.19	(0.03)	
Tunisia	0.53	(0.02)	0.59	(0.03)	-0.06	(0.03)	0.45	(0.02)	0.33	(0.04)	0.12	(0.04)	
Uruguay	0.10	(0.02)	0.06	(0.03)	0.05	(0.03)	-0.16	(0.02)	-0.38	(0.03)	0.22	(0.04)	

Note: Values that are statistically different are indicated in bold.



[Part 1/2] **Table A3.1b Approaches to learning, overall performance effect and differential effect for disadvantaged students**

	General interest in science				Instrumental motivation to learn science				Participation in science related activities				Self-efficacy			
	Average association with performance for all students		Differential effect for disadvantaged students		Average association with performance for all students		Differential effect for disadvantaged students		Average association with performance for all students		Differential effect for disadvantaged students		Average association with performance for all students		Differential effect for disadvantaged students	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
OECD	25.3	(0.8)	-1.6	(1.7)	24.9	(0.8)	3.5	(2.0)	25.1	(1.0)	-3.1	(2.1)	37.6	(0.8)	-3.7	(1.8)
Australia	18.3	(1.4)	3.1	(2.7)	10.6	(1.5)	0.2	(2.8)	15.9	(1.6)	-2.7	(3.2)	29.1	(1.4)	1.0	(2.7)
Austria	17.1	(1.2)	-2.6	(1.8)	12.5	(1.3)	-0.8	(2.1)	16.8	(1.0)	-2.1	(1.9)	24.6	(1.0)	-0.6	(1.7)
Belgium	21.6	(1.0)	0.4	(1.7)	18.8	(1.1)	-3.0	(2.0)	20.1	(1.0)	-1.7	(2.4)	33.4	(1.0)	-1.6	(1.9)
Canada	17.1	(1.7)	-4.7	(3.3)	6.8	(2.2)	-5.5	(3.4)	11.5	(2.3)	-7.4	(3.9)	27.2	(1.6)	-3.3	(2.7)
Czech Republic	24.0	(1.3)	-2.8	(2.8)	15.4	(1.5)	-3.9	(3.2)	21.8	(1.4)	-0.2	(2.6)	34.4	(1.4)	-5.2	(2.6)
Denmark	28.5	(1.5)	2.6	(2.9)	26.3	(1.5)	1.7	(3.5)	22.9	(1.5)	2.1	(3.0)	35.9	(1.6)	4.9	(3.1)
Finland	21.3	(1.4)	0.4	(2.6)	15.1	(1.1)	-3.5	(2.8)	14.8	(1.5)	-6.0	(2.9)	21.7	(1.3)	-4.4	(3.3)
France	16.8	(1.8)	-8.9	(2.5)	7.9	(1.2)	-6.1	(2.6)	12.3	(1.4)	-5.4	(2.9)	23.9	(1.6)	-7.4	(2.8)
Germany	16.2	(1.5)	0.8	(2.6)	9.4	(1.5)	-5.4	(2.8)	9.4	(1.4)	0.8	(2.3)	21.7	(1.5)	-2.7	(2.9)
Greece	14.3	(1.7)	-3.9	(3.3)	3.2	(1.7)	-5.8	(3.4)	10.8	(1.4)	-4.7	(3.2)	16.6	(1.7)	-1.4	(3.2)
Hungary	24.9	(1.3)	-4.2	(2.7)	24.2	(1.6)	-3.5	(3.2)	28.8	(1.7)	-4.1	(3.7)	35.4	(1.6)	-3.7	(2.9)
Iceland	24.3	(1.2)	-1.8	(2.2)	19.9	(1.5)	-0.7	(2.6)	20.1	(1.4)	-0.2	(2.8)	33.1	(1.2)	-2.4	(2.8)
Ireland	13.8	(1.2)	-4.2	(2.7)	6.2	(1.4)	-4.6	(1.9)	9.1	(1.1)	-1.6	(1.8)	21.2	(1.4)	-4.8	(2.2)
Italy	27.4	(1.5)	-2.6	(2.5)	19.3	(1.5)	-3.0	(2.5)	19.8	(1.6)	-1.9	(3.0)	25.0	(1.3)	-2.0	(2.4)
Japan	26.2	(1.5)	-1.6	(2.4)	18.3	(1.8)	-2.8	(2.9)	18.4	(1.4)	-3.4	(2.7)	28.9	(1.6)	1.1	(2.9)
Korea	14.4	(1.4)	-4.7	(2.4)	5.6	(1.1)	-4.1	(2.3)	9.2	(1.3)	-6.7	(3.0)	18.7	(1.4)	-7.5	(2.5)
Luxembourg	7.2	(1.1)	-1.9	(2.0)	2.0	(1.2)	-2.2	(2.9)	-0.5	(1.2)	-6.7	(2.3)	12.3	(1.2)	-6.6	(2.3)
Mexico	18.8	(1.1)	-1.5	(2.5)	10.7	(1.2)	0.3	(2.8)	11.0	(1.2)	-2.6	(2.1)	18.6	(1.3)	-4.2	(2.6)
Netherlands	24.2	(1.4)	-4.5	(3.1)	24.4	(1.4)	-0.9	(3.2)	22.4	(1.6)	-10.0	(3.6)	44.5	(1.5)	-5.5	(3.3)
New Zealand	24.4	(1.3)	-6.1	(2.3)	20.1	(1.4)	-2.9	(3.3)	20.7	(1.5)	-3.1	(3.3)	29.1	(1.7)	-3.5	(3.3)
Norway	14.9	(1.5)	0.9	(3.2)	3.7	(1.3)	-0.9	(3.1)	3.6	(1.5)	-6.3	(3.3)	33.2	(1.4)	-1.5	(2.8)
Poland	17.1	(1.3)	-7.6	(2.6)	14.0	(1.2)	-7.5	(2.7)	12.5	(1.2)	-6.1	(2.4)	18.7	(1.4)	-3.4	(2.6)
Portugal	15.4	(1.8)	-3.5	(3.8)	6.4	(1.8)	-2.5	(3.7)	10.6	(2.6)	-9.3	(4.8)	22.9	(1.3)	-1.2	(3.1)
Slovak Republic	17.1	(1.0)	1.2	(1.9)	11.9	(0.9)	-5.5	(2.1)	13.2	(1.0)	-2.4	(2.1)	22.7	(0.9)	1.4	(2.0)
Spain	24.6	(1.3)	-3.4	(3.2)	23.8	(1.6)	-1.0	(3.1)	23.2	(1.5)	-2.7	(3.7)	33.3	(1.6)	-3.5	(2.6)
Sweden	24.3	(1.1)	-1.3	(2.6)	13.0	(1.1)	-3.9	(2.1)	15.4	(1.2)	-9.2	(2.5)	30.7	(1.2)	-6.4	(2.8)
Switzerland	13.8	(1.3)	-1.0	(2.7)	11.0	(1.3)	-1.1	(3.0)	12.8	(1.5)	-2.7	(3.3)	17.5	(1.4)	-5.9	(2.3)
Turkey	24.3	(1.3)	-10.5	(2.6)	22.0	(1.4)	-9.8	(2.7)	23.5	(1.5)	-7.7	(2.5)	45.6	(1.1)	-1.5	(2.3)
United Kingdom	14.2	(1.4)	-2.0	(2.1)	15.1	(1.7)	-0.7	(3.1)	14.6	(1.7)	-2.3	(3.1)	28.0	(1.2)	-7.9	(2.8)
United States	19.7	(0.2)	-2.6	(0.5)	14.1	(0.3)	-2.9	(0.5)	15.7	(0.3)	-4.0	(0.5)	27.7	(0.3)	-3.1	(0.5)
OECD average																
Partners																
Argentina	5.9	(1.5)	3.5	(3.9)	3.4	(2.2)	-2.6	(4.1)	1.2	(1.8)	2.6	(4.0)	13.9	(2.0)	4.9	(4.9)
Azerbaijan	7.1	(1.2)	-2.8	(2.1)	0.4	(1.4)	-1.0	(2.6)	-0.4	(1.6)	-0.0	(2.8)	5.7	(1.1)	-2.9	(2.0)
Brazil	2.9	(1.0)	-2.0	(2.4)	1.8	(1.3)	-3.7	(2.6)	-3.1	(1.2)	-5.4	(2.3)	13.2	(1.2)	-8.9	(2.2)
Bulgaria	7.9	(1.7)	-1.1	(3.6)	-1.6	(2.0)	-5.4	(4.0)	-1.3	(1.9)	-4.4	(4.1)	16.6	(1.5)	-5.8	(3.4)
Chile	8.0	(1.4)	-3.8	(2.9)	4.3	(1.3)	-2.8	(3.1)	6.9	(1.3)	-2.0	(3.1)	14.5	(1.7)	-3.7	(3.1)
Colombia	-1.1	(1.6)	3.1	(3.2)	1.3	(2.2)	-0.3	(4.0)	-3.7	(2.1)	2.4	(4.0)	11.9	(1.6)	2.1	(3.8)
Croatia	17.6	(1.6)	4.1	(3.0)	5.6	(1.5)	-1.2	(2.7)	13.2	(1.2)	-3.5	(3.1)	30.7	(1.3)	-1.2	(2.5)
Estonia	12.2	(2.3)	4.0	(3.6)	3.5	(2.1)	-2.7	(3.2)	4.9	(2.1)	1.2	(3.8)	33.2	(1.6)	1.2	(3.1)
Hong Kong-China	25.4	(1.4)	-0.8	(2.9)	22.2	(1.5)	5.1	(3.2)	18.4	(1.2)	-4.1	(3.1)	27.0	(1.4)	3.6	(2.9)
Indonesia	11.1	(2.2)	1.9	(3.1)	0.5	(2.9)	1.7	(2.3)	-2.4	(2.1)	1.9	(3.1)	5.2	(1.6)	-1.9	(2.3)
Israel	17.5	(1.8)	0.6	(2.7)	-22.9	(1.7)	4.0	(3.4)	10.0	(1.9)	1.0	(3.3)	17.2	(2.2)	-0.7	(3.7)
Jordan	13.5	(1.5)	-1.6	(2.4)	18.1	(1.8)	-6.2	(3.8)	-0.9	(1.6)	-0.2	(2.4)	11.6	(1.2)	-1.9	(2.4)
Kyrgyzstan	-1.9	(1.7)	4.8	(3.0)	-5.0	(1.8)	8.0	(3.4)	-20.0	(2.2)	4.7	(3.5)	4.9	(1.5)	0.1	(2.4)
Latvia	6.7	(2.6)	0.1	(5.1)	0.9	(1.9)	-7.1	(4.1)	2.2	(2.1)	-3.6	(3.9)	26.9	(1.7)	1.9	(3.2)
Lithuania	19.4	(1.7)	0.7	(3.4)	8.6	(1.6)	0.6	(3.3)	3.6	(1.6)	-2.2	(3.2)	26.1	(1.7)	-2.1	(3.6)
Macao-China	19.5	(1.4)	-0.5	(3.0)	11.6	(2.0)	-3.6	(3.7)	10.9	(1.3)	-1.7	(2.5)	20.8	(1.1)	-2.7	(2.9)
Montenegro	12.6	(1.2)	2.9	(2.8)	-2.9	(1.2)	2.3	(3.0)	-1.8	(1.6)	-1.3	(3.4)	22.8	(1.1)	4.0	(2.6)
Romania	8.4	(1.7)	-0.9	(3.3)	4.8	(2.2)	-3.2	(4.7)	3.6	(2.1)	-2.5	(5.3)	12.8	(1.6)	-4.9	(3.1)
Russian Federation	12.4	(2.2)	6.5	(3.6)	-4.6	(1.8)	1.5	(3.5)	6.8	(2.1)	0.6	(3.2)	24.2	(1.5)	-4.3	(3.3)
Serbia	7.1	(1.3)	-1.1	(2.8)	-3.0	(1.6)	-1.9	(3.0)	2.3	(1.8)	-3.7	(3.1)	18.2	(1.5)	-0.9	(3.1)
Slovenia	15.7	(1.6)	1.0	(2.9)	7.7	(1.4)	-2.1	(2.7)	10.6	(1.3)	-2.8	(2.7)	22.6	(1.7)	-1.7	(3.5)
Chinese Taipei	20.8	(0.9)	2.6	(1.9)	11.7	(1.1)	2.3	(2.4)	9.6	(1.2)	0.3	(2.6)	23.6	(1.1)	3.0	(1.9)
Thailand	16.4	(1.3)	-3.3	(2.9)	18.3	(1.7)	-6.6	(3.9)	15.6	(1.6)	-0.9	(4.5)	11.4	(1.6)	-1.8	(3.3)
Tunisia	9.4	(1.4)	-6.6	(2.7)	11.6	(1.4)	-4.3	(3.0)	0.7	(1.6)	-5.4	(3.5)	9.6	(1.4)	0.3	(3.0)
Uruguay	5.2	(1.3)	-1.3	(2.7)	0.9	(1.5)	-3.0	(2.5)	3.8	(1.4)	-0.1	(2.9)	17.9	(1.7)	-4.3	(2.8)

Note: Values that are statistically different are indicated in bold.



[Part 2/2] **Approaches to learning, overall performance effect and differential effect for disadvantaged students**

	Self-concept				School preparation for science careers				Information in science related careers			
	Average association with performance for all students		Differential effect for disadvantaged students		Average association with performance for all students		Differential effect for disadvantaged students		Average association with performance for all students		Differential effect for disadvantaged students	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
OECD												
Australia	38.4	(1.0)	-3.7	(2.1)	26.8	(1.0)	-1.2	(2.0)	11.2	(0.9)	-2.5	(1.9)
Austria	19.2	(1.3)	-0.9	(2.2)	6.3	(1.4)	1.3	(2.4)	2.5	(1.3)	-1.9	(2.6)
Belgium	20.0	(1.3)	-2.5	(2.3)	8.7	(1.2)	-2.2	(1.8)	0.3	(1.0)	1.8	(2.3)
Canada	30.2	(1.0)	-4.5	(2.0)	18.6	(1.3)	-3.5	(2.0)	3.1	(1.0)	-2.1	(2.1)
Czech Republic	14.1	(2.1)	3.3	(3.7)	5.3	(2.0)	-3.5	(3.2)	1.4	(1.5)	-5.6	(3.1)
Denmark	29.4	(1.3)	-5.4	(3.2)	16.2	(1.8)	1.8	(3.3)	5.7	(1.6)	-3.1	(3.3)
Finland	37.1	(1.5)	4.3	(3.0)	11.7	(1.7)	5.0	(2.9)	2.2	(1.6)	-1.0	(3.6)
France	21.7	(1.4)	-6.1	(2.7)	14.3	(1.2)	-3.8	(2.3)	1.6	(1.2)	-6.8	(2.5)
Germany	18.3	(1.2)	-4.4	(2.5)	4.9	(1.3)	-0.9	(2.3)	2.4	(1.2)	1.0	(2.7)
Greece	12.4	(1.4)	-5.9	(2.5)	-1.0	(1.6)	4.4	(2.8)	0.3	(1.2)	-1.4	(2.5)
Hungary	7.9	(1.7)	-12.9	(3.3)	-0.6	(1.4)	-1.8	(3.0)	-1.8	(1.5)	-7.4	(3.2)
Iceland	37.8	(1.7)	-4.8	(2.9)	19.9	(1.8)	0.5	(3.3)	17.2	(1.7)	-3.4	(3.9)
Ireland	30.2	(1.4)	-4.0	(3.1)	14.2	(1.2)	-0.3	(2.8)	1.4	(1.5)	-0.5	(2.5)
Italy	10.8	(1.2)	-7.3	(2.3)	-1.4	(1.1)	-3.8	(2.0)	-3.6	(1.2)	-1.9	(2.2)
Japan	23.1	(1.5)	-3.6	(2.9)	8.6	(1.8)	-7.1	(3.0)	-0.2	(1.5)	-3.4	(2.7)
Korea	27.3	(1.4)	-3.2	(3.2)	0.4	(1.7)	-4.5	(3.0)	4.8	(1.6)	-3.9	(3.4)
Luxembourg	18.0	(1.0)	-8.5	(2.2)	0.5	(1.0)	-0.6	(2.3)	-1.9	(1.2)	-4.4	(2.6)
Mexico	4.5	(1.3)	-4.7	(2.3)	-1.6	(1.0)	-2.2	(2.3)	-2.9	(0.8)	-2.7	(1.6)
Netherlands	19.6	(1.6)	-0.0	(2.9)	14.1	(1.5)	4.0	(2.5)	7.4	(1.3)	-2.9	(2.3)
New Zealand	36.8	(1.5)	-16.3	(4.0)	25.9	(1.5)	-5.3	(3.4)	5.8	(1.4)	-3.9	(3.5)
Norway	33.5	(1.6)	-3.8	(3.2)	10.4	(1.7)	2.9	(3.4)	-1.5	(1.5)	2.4	(2.8)
Poland	18.2	(1.5)	-0.9	(3.0)	-3.5	(1.5)	-3.1	(3.1)	-3.3	(1.2)	-0.7	(2.6)
Portugal	20.1	(1.4)	-8.0	(3.0)	5.9	(1.4)	-6.5	(2.5)	-1.2	(1.3)	-2.5	(2.4)
Slovak Republic	16.5	(1.4)	-1.3	(3.5)	0.7	(1.9)	-8.0	(3.7)	-3.7	(1.4)	-3.3	(3.1)
Spain	19.1	(0.9)	-2.8	(2.0)	7.0	(1.0)	0.4	(2.1)	2.8	(0.9)	-0.3	(1.7)
Sweden	34.7	(1.4)	-4.5	(2.6)	15.0	(1.5)	0.4	(2.7)	3.1	(1.4)	4.4	(3.1)
Switzerland	24.7	(1.3)	-6.0	(2.2)	16.5	(1.2)	-3.6	(2.3)	6.2	(1.4)	-2.4	(2.3)
Turkey	7.3	(1.2)	-2.9	(3.0)	-2.2	(1.3)	-0.1	(2.3)	10.5	(1.4)	-4.8	(2.5)
United Kingdom	35.9	(1.6)	-8.7	(2.7)	25.2	(1.3)	-5.2	(2.9)	1.1	(1.3)	-6.0	(2.8)
United States	23.9	(1.5)	-6.3	(2.7)	16.6	(1.7)	-1.8	(3.3)	-0.4	(1.7)	-1.0	(2.8)
OECD average	23.0	(0.3)	-4.5	(0.5)	9.4	(0.3)	-1.6	(0.5)	2.4	(0.2)	-2.3	(0.5)
Partners												
Argentina	7.9	(2.1)	-1.2	(4.8)	-1.4	(1.7)	3.0	(3.5)	-2.9	(1.2)	4.2	(4.5)
Azerbaijan	2.4	(1.5)	-2.5	(2.5)	2.6	(1.2)	2.8	(2.1)	-1.0	(1.2)	-1.6	(2.5)
Brazil	5.1	(1.5)	-8.5	(2.5)	-5.1	(1.4)	-2.9	(2.5)	-5.7	(1.2)	-4.5	(2.2)
Bulgaria	8.0	(1.8)	-4.1	(3.6)	1.6	(1.6)	-3.1	(3.2)	-5.5	(1.5)	-5.7	(3.5)
Chile	12.6	(1.3)	-7.0	(2.9)	-2.5	(1.4)	-8.2	(2.7)	-2.6	(1.1)	1.7	(2.4)
Colombia	6.8	(2.3)	0.3	(4.4)	-6.2	(1.7)	-0.3	(3.4)	-3.3	(1.9)	0.6	(3.2)
Croatia	13.0	(1.8)	-0.2	(3.7)	1.0	(1.4)	-2.3	(2.7)	4.4	(1.3)	0.3	(3.2)
Estonia	23.7	(1.7)	0.9	(3.0)	0.7	(1.6)	-1.9	(3.1)	-10.9	(1.5)	-0.5	(2.7)
Hong Kong-China	22.6	(1.5)	0.6	(3.8)	10.8	(1.4)	4.2	(4.7)	-1.1	(1.7)	0.2	(3.9)
Indonesia	-14.5	(2.8)	4.4	(2.3)	0.0	(1.8)	4.3	(2.7)	-9.2	(1.9)	2.0	(2.0)
Israel	26.7	(1.9)	-6.2	(3.6)	6.5	(1.6)	0.6	(3.2)	5.2	(1.5)	-2.3	(2.8)
Jordan	16.9	(1.8)	-8.6	(3.0)	0.1	(1.5)	6.8	(2.7)	-0.5	(1.5)	-1.8	(2.8)
Kyrgyzstan	-12.4	(1.7)	4.1	(4.0)	-1.5	(1.7)	3.3	(3.1)	-1.6	(1.4)	-0.5	(2.8)
Latvia	14.4	(2.1)	-4.6	(4.6)	1.4	(1.5)	-0.9	(3.9)	-9.3	(1.6)	-3.9	(3.5)
Lithuania	20.3	(1.6)	-6.6	(3.8)	7.6	(1.5)	-1.0	(3.1)	0.6	(1.6)	2.2	(3.8)
Macao-China	12.5	(1.6)	-3.2	(3.5)	-1.8	(1.2)	-2.7	(3.1)	-2.1	(1.4)	-2.7	(2.7)
Montenegro	4.3	(1.6)	-4.8	(3.0)	-5.7	(1.4)	-3.3	(3.1)	-8.2	(1.2)	-2.4	(2.7)
Romania	1.6	(2.4)	-5.5	(3.8)	0.9	(1.4)	1.8	(4.5)	-8.7	(1.8)	-4.2	(3.4)
Russian Federation	15.2	(2.0)	-8.3	(4.3)	1.3	(1.6)	0.9	(3.3)	-3.6	(1.3)	-1.8	(3.4)
Serbia	7.1	(1.3)	-6.8	(2.8)	-7.0	(1.4)	-1.3	(2.5)	-4.6	(1.3)	-3.9	(2.6)
Slovenia	12.3	(1.3)	-7.0	(2.8)	6.0	(1.2)	-2.1	(3.1)	-2.3	(1.5)	-1.2	(2.4)
Chinese Taipei	8.1	(1.4)	-1.5	(2.7)	1.1	(1.1)	2.2	(2.5)	6.5	(1.2)	3.3	(2.4)
Thailand	-0.3	(1.6)	-0.1	(2.8)	6.8	(1.1)	0.3	(2.9)	-3.8	(1.4)	-0.1	(2.8)
Tunisia	9.9	(1.4)	-4.2	(2.5)	1.0	(1.2)	1.8	(2.4)	-0.4	(1.3)	0.3	(2.2)
Uruguay	13.1	(1.7)	-4.4	(2.9)	7.4	(1.6)	-4.1	(3.5)	-3.0	(1.5)	2.3	(2.5)

Note: Values that are statistically different are indicated in bold.



Table A3.2a Number of science courses and learning hours among disadvantaged and non-disadvantaged students

	Share of students who attended general science compulsory courses						The number of compulsory courses in general science, physics, biology and chemistry*						The number of science regular hours					
	Non-disadvantaged students		Disadvantaged students		Difference		Non-disadvantaged students		Disadvantaged students		Difference		Non-disadvantaged students		Disadvantaged students		Difference	
	%	S.E.	%	S.E.	Dif.	S.E.	Mean	S.E.	Mean	S.E.	Dif.	S.E.	Mean	S.E.	Mean	S.E.	Dif.	S.E.
OECD																		
Australia	88.1	(0.7)	78.0	(0.9)	10.1	(0.9)	3.40	(0.08)	2.59	(0.06)	0.81	(0.07)	3.36	(0.03)	2.82	(0.04)	0.54	(0.04)
Austria	a	a	a	a	a	a	3.43	(0.06)	3.22	(0.07)	0.21	(0.07)	2.58	(0.07)	2.03	(0.06)	0.55	(0.08)
Belgium	63.5	(1.1)	57.0	(2.0)	6.5	(1.9)	3.88	(0.07)	2.77	(0.08)	1.11	(0.09)	2.83	(0.04)	1.97	(0.06)	0.86	(0.06)
Canada	93.2	(0.4)	87.0	(0.7)	6.2	(0.8)	3.43	(0.04)	3.02	(0.05)	0.41	(0.06)	3.99	(0.04)	3.36	(0.04)	0.63	(0.05)
Czech Republic	62.4	(1.0)	61.8	(1.6)	0.7	(1.7)	6.04	(0.09)	5.87	(0.09)	0.17	(0.08)	2.98	(0.07)	2.38	(0.06)	0.60	(0.07)
Denmark	17.7	(0.9)	13.7	(0.9)	4.0	(1.2)	5.31	(0.04)	4.96	(0.07)	0.35	(0.06)	3.28	(0.04)	3.00	(0.05)	0.28	(0.05)
Finland	88.8	(0.9)	86.4	(1.2)	2.4	(1.3)	7.10	(0.05)	6.85	(0.07)	0.25	(0.07)	3.20	(0.04)	2.87	(0.06)	0.33	(0.06)
France	a	a	a	a	a	a	5.47	(0.04)	5.02	(0.06)	0.46	(0.07)	3.10	(0.06)	2.10	(0.05)	1.00	(0.07)
Germany	75.5	(1.1)	64.0	(1.5)	11.5	(1.6)	6.02	(0.05)	5.48	(0.07)	0.53	(0.07)	3.19	(0.04)	2.49	(0.07)	0.70	(0.07)
Greece	a	a	a	a	a	a	4.19	(0.04)	3.62	(0.06)	0.56	(0.07)	3.36	(0.05)	2.58	(0.06)	0.78	(0.07)
Hungary	a	a	a	a	a	a	4.66	(0.06)	4.81	(0.06)	-0.15	(0.07)	2.62	(0.05)	2.16	(0.05)	0.46	(0.07)
Iceland	92.1	(0.5)	91.2	(0.8)	0.9	(0.9)	6.02	(0.04)	5.84	(0.08)	0.17	(0.08)	3.05	(0.03)	2.74	(0.04)	0.32	(0.05)
Ireland	66.3	(2.6)	61.6	(2.7)	4.7	(2.4)	0.86	(0.04)	0.77	(0.03)	0.09	(0.03)	2.64	(0.04)	2.28	(0.07)	0.36	(0.07)
Italy	70.4	(1.5)	79.9	(0.9)	-9.5	(1.5)	3.63	(0.08)	3.96	(0.06)	-0.33	(0.08)	2.88	(0.06)	2.65	(0.05)	0.23	(0.06)
Japan	100.0	v	100.0	v	v	v	3.44	(0.05)	3.11	(0.06)	0.33	(0.06)	2.80	(0.06)	2.45	(0.05)	0.35	(0.05)
Korea	96.8	(0.4)	94.8	(0.7)	2.0	(0.7)	1.84	(0.01)	1.79	(0.02)	0.04	(0.02)	3.67	(0.06)	3.28	(0.07)	0.39	(0.07)
Luxembourg	a	a	a	a	a	a	3.77	(0.03)	3.75	(0.05)	0.02	(0.06)	2.44	(0.03)	1.99	(0.05)	0.44	(0.06)
Mexico	39.9	(0.8)	36.3	(1.5)	3.6	(1.7)	2.68	(0.05)	2.40	(0.07)	0.28	(0.09)	2.97	(0.04)	2.95	(0.07)	0.03	(0.09)
Netherlands	75.5	(1.1)	66.8	(1.8)	8.7	(2.1)	4.71	(0.07)	4.35	(0.10)	0.37	(0.11)	2.27	(0.04)	1.82	(0.06)	0.44	(0.07)
New Zealand	94.6	(0.6)	90.6	(0.9)	4.0	(1.1)	3.62	(0.08)	3.21	(0.09)	0.41	(0.09)	4.18	(0.04)	3.55	(0.07)	0.63	(0.08)
Norway	100.0	v	100.0	v	v	v	2.00	v	2.00	v	v	v	2.69	(0.03)	2.51	(0.05)	0.18	(0.05)
Poland	a	a	a	a	a	a	6.00	v	6.00	v	v	v	2.77	(0.04)	2.51	(0.05)	0.26	(0.05)
Portugal	96.4	(0.4)	93.6	(1.0)	2.9	(0.9)	3.98	(0.05)	3.83	(0.08)	0.15	(0.09)	3.25	(0.05)	2.56	(0.06)	0.69	(0.07)
Slovak Republic	a	a	a	a	a	a	5.03	(0.05)	4.58	(0.06)	0.45	(0.06)	2.60	(0.08)	1.85	(0.06)	0.75	(0.07)
Spain	87.8	(0.7)	89.1	(0.8)	-1.3	(1.0)	5.25	(0.05)	4.92	(0.06)	0.34	(0.06)	3.17	(0.04)	2.65	(0.04)	0.52	(0.05)
Sweden	61.7	(1.5)	53.2	(1.7)	8.5	(2.0)	4.90	(0.09)	4.13	(0.12)	0.77	(0.13)	2.85	(0.03)	2.69	(0.03)	0.15	(0.04)
Switzerland	85.4	(0.7)	78.5	(1.4)	6.8	(1.3)	4.92	(0.06)	4.14	(0.07)	0.78	(0.08)	2.51	(0.05)	1.92	(0.04)	0.60	(0.05)
Turkey	77.6	(1.1)	71.1	(1.6)	6.5	(1.9)	4.20	(0.06)	3.85	(0.09)	0.35	(0.10)	2.85	(0.10)	2.33	(0.09)	0.52	(0.12)
United Kingdom	74.4	(0.9)	64.9	(1.3)	9.5	(1.5)	3.32	(0.05)	2.87	(0.06)	0.45	(0.06)	4.31	(0.03)	3.80	(0.05)	0.51	(0.04)
United States	83.4	(0.8)	76.0	(2.0)	7.4	(2.2)	3.07	(0.05)	2.79	(0.04)	0.28	(0.07)	3.66	(0.04)	2.81	(0.10)	0.85	(0.10)
OECD average	77.9	(0.2)	73.7	(0.3)	4.6	(0.3)	4.21	(0.01)	3.88	(0.01)	0.34	(0.01)	3.07	0.01	2.57	(0.01)	0.50	(0.01)
Partners																		
Argentina	21.8	(1.3)	20.3	(1.2)	1.5	(1.6)	1.29	(0.08)	1.25	(0.07)	0.04	(0.08)	2.35	(0.07)	1.92	(0.06)	0.43	(0.09)
Azerbaijan	a	a	a	a	a	a	3.69	(0.07)	3.35	(0.11)	0.34	(0.12)	2.81	(0.06)	2.56	(0.06)	0.24	(0.07)
Brazil	12.4	(0.8)	9.8	(1.2)	2.6	(1.3)	0.82	(0.05)	0.45	(0.04)	0.37	(0.05)	2.32	(0.03)	1.90	(0.04)	0.42	(0.05)
Bulgaria	a	a	a	a	a	a	4.70	(0.06)	4.72	(0.06)	-0.02	(0.07)	2.74	(0.08)	2.05	(0.08)	0.69	(0.09)
Chile	62.1	(1.0)	53.3	(1.5)	8.8	(1.5)	5.08	(0.09)	3.87	(0.11)	1.21	(0.10)	2.50	(0.05)	1.78	(0.05)	0.72	(0.05)
Colombia	17.4	(1.1)	17.3	(1.6)	0.0	(1.6)	1.07	(0.06)	0.84	(0.07)	0.24	(0.08)	3.46	(0.10)	3.29	(0.12)	0.17	(0.09)
Croatia	a	a	a	a	a	a	4.62	(0.06)	3.81	(0.08)	0.81	(0.06)	2.16	(0.05)	1.66	(0.05)	0.50	(0.05)
Estonia	52.5	(1.0)	46.1	(1.5)	6.4	(1.7)	5.42	(0.08)	4.69	(0.09)	0.73	(0.11)	3.23	(0.04)	2.99	(0.06)	0.24	(0.07)
Hong Kong-China	59.9	(1.9)	57.5	(1.8)	2.5	(2.1)	3.89	(0.07)	3.09	(0.09)	0.80	(0.09)	3.03	(0.06)	2.58	(0.08)	0.45	(0.09)
Indonesia	91.4	(0.8)	88.3	(0.8)	3.1	(1.2)	5.55	(0.08)	5.04	(0.08)	0.51	(0.11)	3.24	(0.08)	2.84	(0.07)	0.40	(0.08)
Israel	74.0	(1.1)	61.5	(1.7)	12.5	(2.0)	3.96	(0.08)	3.08	(0.08)	0.88	(0.10)	2.51	(0.06)	2.02	(0.06)	0.48	(0.07)
Jordan	59.1	(2.0)	50.1	(2.1)	9.0	(2.1)	5.18	(0.08)	4.16	(0.12)	1.03	(0.11)	3.27	(0.06)	2.72	(0.08)	0.55	(0.09)
Kyrgyzstan	70.3	(1.2)	64.3	(1.4)	6.0	(1.7)	4.71	(0.07)	4.26	(0.10)	0.45	(0.10)	2.09	(0.05)	1.81	(0.11)	0.28	(0.11)
Latvia	79.7	(0.8)	75.9	(1.4)	3.8	(1.5)	6.75	(0.05)	6.28	(0.09)	0.47	(0.09)	2.91	(0.06)	2.54	(0.08)	0.37	(0.08)
Lithuania	a	a	a	a	a	a	4.90	(0.05)	4.32	(0.07)	0.59	(0.08)	2.75	(0.04)	2.43	(0.05)	0.32	(0.05)
Macao-China	46.8	(1.1)	35.9	(1.2)	11.0	(1.8)	3.46	(0.06)	2.78	(0.08)	0.68	(0.11)	3.58	(0.03)	3.38	(0.06)	0.19	(0.07)
Montenegro	84.3	(0.7)	78.9	(1.1)	5.4	(1.4)	6.24	(0.04)	5.73	(0.07)	0.51	(0.08)	2.89	(0.05)	2.35	(0.06)	0.53	(0.08)
Romania	38.2	(1.3)	42.5	(1.9)	-4.3	(2.3)	3.04	(0.10)	3.19	(0.19)	-0.15	(0.18)	2.34	(0.07)	1.86	(0.08)	0.48	(0.08)
Russian Federation	3.7	(1.1)	2.6	(0.8)	1.1	(0.7)	5.99	(0.02)	5.91	(0.03)	0.08	(0.03)	3.60	(0.06)	3.26	(0.09)	0.34	(0.07)
Serbia	a	a	a	a	a	a	4.85	(0.04)	4.81	(0.06)	0.03	(0.07)	2.92	(0.06)	2.38	(0.06)	0.54	(0.07)
Slovenia	64.9	(0.8)	70.1	(1.6)	-5.3	(1.6)	6.40	(0.02)	5.90	(0.05)	0.50	(0.06)	2.95	(0.03)	2.21	(0.05)	0.73	(0.06)
Chinese Taipei	46.5	(1.2)	37.2	(1.5)	9.3	(1.9)	4.48	(0.07)	3.82	(0.08)	0.67	(0.06)	3.00	(0.05)	2.43	(0.07)	0.58	(0.07)
Thailand	93.0	(0.5)	88.1	(1.3)	4.9	(1.4)	4.55	(0.08)	4.15	(0.10)	0.40	(0.12)	3.73	(0.04)	3.52	(0.04)	0.21	(0.05)
Tunisia	74.6	(1.2)	68.3	(1.4)	6.3	(2.0)	3.83	(0.06)	3.40	(0.09)	0.43	(0.10)	2.63	(0.05)	2.30	(0.06)	0.33	(0.07)
Uruguay	49.4	(1.2)	39.3	(1.4)	10.2	(1.9)	4.03	(0.08)	2.65	(0.09)	1.38	(0.10)	2.49	(0.05)	1.98	(0.06)	0.51	(0.07)

Note: * the number of additional courses was calculated treating missing values as zeroes.

a - The category does not apply in the country concerned. Data are therefore missing.

v - There is no variation in this indicator in this country.



Table A3.2b Courses and hours, overall performance effect and differential effect for disadvantaged students

	Students who attended general science compulsory courses this or last year				Number of attended compulsory courses in general science, physics, biology and chemistry*				Number of hours students report spending in regular lessons at school learning science				
	Average association with performance for all students		Differential effect for disadvantaged students		Average association with performance for all students		Differential effect for disadvantaged students		Average association with performance for all students		Differential effect for disadvantaged students		
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	
OECD													
Australia	65.6	(2.9)	4.8	(5.6)	6.5	(0.4)	1.7	(0.9)	14.4	(0.5)	0.1	(1.0)	
Austria	a	a	a	a	7.0	(1.2)	-1.8	(2.0)	11.4	(0.9)	2.6	(1.4)	
Belgium	5.7	(2.9)	9.2	(4.7)	8.3	(0.6)	3.8	(0.8)	11.3	(0.6)	1.6	(1.1)	
Canada	58.4	(3.4)	-10.8	(6.8)	1.1	(0.4)	3.3	(0.9)	9.3	(0.5)	-0.3	(0.8)	
Czech Republic	-1.2	(3.4)	-0.5	(6.4)	6.7	(1.2)	0.8	(1.6)	14.3	(0.8)	-1.1	(1.7)	
Denmark	5.1	(4.2)	-8.7	(7.4)	9.4	(1.0)	-0.0	(1.5)	11.8	(1.2)	0.0	(2.2)	
Finland	24.7	(4.7)	18.1	(8.3)	7.4	(0.9)	4.0	(1.7)	14.1	(0.8)	0.8	(1.6)	
France	a	a	a	a	12.9	(1.1)	0.4	(1.8)	14.4	(0.9)	-1.3	(1.7)	
Germany	20.5	(2.8)	-1.9	(4.7)	5.4	(0.6)	-1.1	(1.0)	9.4	(0.6)	-1.4	(1.4)	
Greece	a	a	a	a	10.4	(0.8)	-2.7	(1.3)	15.1	(0.9)	-3.0	(1.6)	
Hungary	a	a	a	a	5.8	(1.3)	-1.1	(2.0)	9.4	(1.0)	-1.0	(1.7)	
Iceland	65.7	(6.7)	-20.4	(13.3)	8.2	(0.7)	-2.3	(1.4)	10.3	(1.2)	0.5	(2.3)	
Ireland	14.3	(3.4)	10.6	(6.2)	13.5	(2.2)	8.4	(4.3)	10.5	(1.0)	0.8	(1.9)	
Italy	-1.6	(3.0)	10.0	(4.6)	3.0	(0.8)	2.0	(1.1)	9.6	(0.7)	1.3	(1.1)	
Japan	v	v	v	v	8.8	(1.9)	2.5	(2.7)	9.6	(1.5)	1.5	(2.7)	
Korea	57.8	(8.6)	22.6	(17.4)	32.2	(4.0)	3.2	(7.3)	9.1	(1.3)	3.4	(2.0)	
Luxembourg	a	a	a	a	3.1	(0.5)	1.8	(1.1)	7.5	(0.7)	2.0	(1.7)	
Mexico	7.6	(1.9)	-8.0	(3.9)	3.2	(0.4)	-0.6	(0.9)	2.2	(0.4)	-1.5	(0.9)	
Netherlands	21.6	(2.8)	13.2	(5.7)	8.1	(0.8)	2.3	(1.3)	11.4	(0.7)	2.7	(1.5)	
New Zealand	61.5	(7.4)	28.9	(11.0)	2.6	(0.6)	2.8	(1.1)	18.4	(0.9)	-0.8	(1.7)	
Norway	v	v	v	v	v	v	v	v	10.4	(1.3)	0.9	(3.3)	
Poland	a	a	a	a	v	v	v	v	12.4	(0.8)	0.3	(1.6)	
Portugal	24.4	(5.9)	-5.4	(9.5)	1.5	(0.5)	0.2	(1.1)	6.8	(0.5)	-2.6	(1.2)	
Slovak Republic	a	a	a	a	13.7	(1.1)	-1.3	(1.8)	14.5	(0.9)	1.9	(1.4)	
Spain	-10.3	(3.2)	11.6	(6.8)	2.9	(0.5)	2.4	(0.9)	11.0	(0.6)	-0.3	(1.2)	
Sweden	31.0	(3.3)	5.2	(5.8)	5.7	(0.5)	0.4	(0.8)	12.0	(1.4)	4.6	(2.7)	
Switzerland	34.1	(3.0)	5.0	(4.8)	8.8	(0.5)	0.1	(0.9)	13.4	(0.7)	-1.6	(1.3)	
Turkey	13.5	(3.5)	2.3	(6.1)	5.6	(0.6)	-0.4	(1.3)	9.3	(0.6)	-1.9	(1.1)	
United Kingdom	35.2	(3.4)	15.9	(7.2)	8.5	(0.7)	2.3	(1.5)	21.6	(1.0)	-2.3	(1.6)	
United States	15.4	(5.4)	26.6	(8.1)	-0.5	(1.1)	4.1	(1.8)	12.9	(0.9)	-0.6	(1.7)	
OECD average	26.2	(1.0)	6.1	(1.7)	7.5	(0.2)	1.2	(0.4)	11.6	(0.2)	0.2	(0.3)	
Partners													
Argentina	-13.1	(4.5)	8.8	(10.5)	-1.6	(0.9)	0.7	(1.8)	9.9	(1.0)	-3.2	(2.3)	
Azerbaijan	a	a	a	a	5.3	(0.6)	0.9	(1.3)	5.6	(0.7)	-1.3	(1.1)	
Brazil	-8.5	(4.2)	-16.5	(10.4)	1.4	(0.8)	-3.3	(1.9)	11.1	(0.9)	-1.6	(1.6)	
Bulgaria	a	a	a	a	8.9	(1.0)	1.1	(1.9)	10.5	(0.9)	-0.8	(1.9)	
Chile	15.2	(2.5)	-0.3	(5.4)	5.3	(0.4)	-0.6	(0.6)	8.9	(0.7)	0.2	(1.5)	
Colombia	-2.3	(4.3)	-3.1	(8.8)	-0.2	(1.1)	-0.8	(1.6)	5.7	(0.9)	-1.7	(1.9)	
Croatia	a	a	a	a	16.7	(0.9)	-2.0	(1.5)	8.9	(0.9)	0.4	(1.2)	
Estonia	6.1	(2.8)	-0.3	(6.5)	6.0	(0.7)	-1.2	(1.2)	13.3	(0.8)	-2.8	(1.7)	
Hong Kong-China	6.4	(3.9)	12.5	(6.4)	9.5	(0.8)	-1.4	(1.3)	10.6	(0.6)	0.4	(1.1)	
Indonesia	9.3	(2.6)	-1.2	(6.2)	2.6	(0.4)	-0.0	(0.8)	8.5	(1.0)	-3.2	(1.3)	
Israel	26.4	(4.0)	-20.2	(7.7)	8.9	(0.8)	-4.0	(1.6)	14.8	(1.0)	-2.5	(1.9)	
Jordan	4.4	(3.4)	7.0	(5.2)	6.3	(0.5)	-1.5	(0.9)	9.6	(0.6)	-4.5	(1.5)	
Kyrgyzstan	10.6	(3.0)	-8.1	(4.6)	5.6	(0.6)	-2.4	(1.0)	7.6	(0.7)	-3.7	(1.2)	
Latvia	22.2	(3.7)	1.2	(7.5)	12.3	(0.8)	-1.6	(1.6)	11.0	(0.6)	1.9	(1.9)	
Lithuania	a	a	a	a	12.0	(0.5)	-0.7	(1.0)	12.0	(0.7)	-0.5	(1.5)	
Macao-China	21.4	(2.9)	3.9	(4.8)	5.7	(0.4)	-0.6	(0.8)	9.2	(0.5)	-2.9	(1.2)	
Montenegro	24.2	(3.0)	0.2	(5.9)	9.9	(0.5)	-0.6	(1.0)	9.6	(0.6)	-2.3	(1.3)	
Romania	-1.6	(3.2)	-1.9	(4.7)	3.0	(0.6)	1.4	(1.0)	8.9	(0.8)	-2.8	(2.1)	
Russian Federation	4.4	(6.9)	12.0	(14.8)	3.4	(2.2)	1.3	(3.4)	10.1	(0.8)	0.9	(1.2)	
Serbia	a	a	a	a	4.5	(0.7)	0.7	(1.4)	10.6	(0.8)	-2.1	(1.6)	
Slovenia	-21.6	(2.9)	0.3	(7.1)	5.6	(0.7)	3.5	(1.6)	10.4	(0.7)	-0.4	(1.3)	
Chinese Taipei	16.4	(3.1)	9.2	(5.5)	4.7	(0.6)	0.2	(0.9)	13.8	(0.7)	2.0	(1.4)	
Thailand	29.3	(3.2)	-5.1	(6.0)	1.9	(0.5)	-0.5	(1.0)	15.7	(1.0)	-2.2	(1.7)	
Tunisia	5.3	(2.6)	-8.6	(5.1)	2.3	(0.5)	-1.8	(1.0)	5.6	(0.7)	-1.1	(1.3)	
Uruguay	19.1	(2.5)	-12.1	(6.6)	5.7	(0.4)	-1.8	(1.0)	7.9	(0.7)	-1.0	(1.5)	

Note: * the number of additional courses was calculated treating missing values as zeroes.

a - The category does not apply in the country concerned. Data are therefore missing.

v - There is no variation in this indicator in this country.

Part 1/2] Learning environment at school among disadvantaged and non-disadvantaged students
Table A3.3a

	Share of students in private schools						Share of students in schools which compete for students						Share of students in schools which select students based on academic record					
	Non-disadvantaged students		Disadvantaged students		Difference		Non-disadvantaged students		Disadvantaged students		Difference		Non-disadvantaged students		Disadvantaged students		Difference	
	%	S.E.	%	S.E.	Dif.	S.E.	%	S.E.	%	S.E.	Dif.	S.E.	%	S.E.	%	S.E.	Dif.	S.E.
OECD																		
Australia	w	w	w	w	w	w	94.7	(1.0)	91.5	(1.7)	3.3	(1.2)	9.6	(1.9)	9.0	(2.0)	0.6	(1.8)
Austria	10.0	(2.1)	8.1	(3.0)	1.9	(2.2)	69.0	(3.5)	54.8	(4.3)	14.2	(3.3)	71.9	(2.4)	52.1	(2.5)	19.8	(2.8)
Belgium	w	w	w	w	w	w	90.6	(2.1)	90.7	(2.4)	-0.1	(2.0)	25.6	(2.7)	25.9	(3.1)	-0.2	(2.5)
Canada	9.5	(0.8)	3.2	(0.5)	6.3	(0.8)	78.2	(2.4)	74.0	(2.5)	4.2	(1.6)	12.7	(1.4)	6.4	(1.0)	6.4	(1.1)
Czech Republic	7.2	(2.9)	5.4	(2.6)	1.8	(1.8)	87.4	(2.4)	82.9	(3.1)	4.5	(2.0)	45.6	(3.4)	35.4	(3.8)	10.2	(3.0)
Denmark	26.0	(3.3)	20.5	(3.2)	5.5	(2.4)	76.6	(3.5)	79.2	(3.3)	-2.6	(2.1)	4.2	(1.7)	3.5	(1.5)	0.7	(1.1)
Finland	3.5	(1.4)	1.9	(1.0)	1.6	(1.0)	59.3	(4.0)	49.5	(3.4)	9.8	(2.0)	5.0	(2.3)	2.8	(1.3)	2.3	(1.6)
France	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w	w
Germany	7.0	(2.2)	3.5	(1.2)	3.5	(1.5)	85.1	(2.5)	78.1	(3.5)	7.0	(2.5)	42.7	(4.0)	30.7	(4.0)	12.0	(2.9)
Greece	7.6	(1.8)	0.3	(0.2)	7.4	(1.7)	62.6	(3.7)	54.0	(3.9)	8.7	(3.4)	6.4	(2.5)	0.7	(0.5)	5.7	(2.3)
Hungary	19.9	(4.2)	8.8	(2.5)	11.1	(3.8)	77.0	(3.9)	73.1	(4.2)	3.9	(3.6)	71.9	(4.0)	49.8	(4.7)	22.2	(4.2)
Iceland	1.4	(0.1)	0.5	(0.2)	1.0	(0.3)	28.3	(0.5)	26.6	(0.9)	1.7	(1.4)	0.8	(0.1)	1.8	(0.3)	-1.1	(0.4)
Ireland	66.9	(1.4)	48.6	(2.2)	18.3	(2.5)	84.7	(2.7)	81.1	(3.0)	3.6	(1.8)	2.5	(1.2)	2.7	(1.4)	-0.2	(0.8)
Italy	4.2	(0.8)	3.2	(0.9)	1.0	(0.8)	81.3	(2.5)	79.8	(2.7)	1.5	(1.5)	6.6	(1.5)	7.9	(2.6)	-1.3	(2.0)
Japan	34.5	(1.1)	24.2	(2.7)	10.4	(2.5)	90.2	(2.3)	88.3	(3.1)	1.9	(2.7)	86.1	(2.7)	86.9	(3.0)	-0.7	(2.6)
Korea	44.4	(3.8)	50.2	(5.1)	-5.7	(3.8)	81.7	(3.4)	89.7	(2.5)	-8.0	(2.3)	56.4	(4.2)	64.3	(4.8)	-7.8	(3.9)
Luxembourg	13.9	(0.4)	15.6	(0.8)	-1.7	(1.2)	68.1	(0.5)	64.2	(0.9)	3.9	(1.3)	39.0	(0.6)	46.9	(1.1)	-7.9	(1.7)
Mexico	20.9	(2.7)	3.1	(1.3)	17.8	(2.4)	88.0	(1.4)	76.8	(4.0)	11.2	(3.6)	43.1	(2.6)	28.0	(4.2)	15.1	(3.4)
Netherlands	67.2	(4.1)	68.9	(5.5)	-1.7	(3.5)	90.9	(2.0)	87.0	(2.8)	3.9	(1.9)	66.5	(3.8)	63.0	(4.8)	3.6	(2.9)
New Zealand	8.0	(0.5)	1.5	(0.4)	6.5	(0.6)	88.8	(2.2)	90.1	(2.4)	-1.4	(2.0)	10.4	(2.1)	7.3	(2.3)	3.2	(1.4)
Norway	2.4	(1.2)	1.1	(0.5)	1.4	(0.9)	37.2	(3.8)	28.3	(3.8)	8.9	(2.7)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
Poland	2.2	(0.2)	0.3	(0.1)	1.9	(0.2)	71.5	(3.3)	51.4	(4.6)	20.1	(3.3)	15.8	(3.0)	8.7	(1.8)	7.1	(2.3)
Portugal	11.2	(1.4)	8.0	(1.3)	3.2	(0.9)	76.8	(3.8)	64.8	(4.8)	12.0	(3.3)	6.8	(2.2)	6.6	(2.6)	0.2	(2.3)
Slovak Republic	9.0	(2.1)	5.1	(1.8)	4.0	(1.6)	94.2	(1.6)	86.0	(3.7)	8.2	(2.9)	49.0	(2.4)	41.4	(3.8)	7.6	(3.0)
Spain	43.4	(1.2)	19.6	(1.5)	23.8	(2.0)	82.3	(2.2)	74.8	(3.0)	7.5	(2.4)	4.0	(1.4)	1.0	(0.6)	3.0	(1.7)
Sweden	10.3	(0.8)	4.7	(1.1)	5.6	(0.9)	66.9	(3.6)	55.0	(4.1)	11.9	(1.7)	2.5	(1.0)	0.6	(0.3)	1.9	(1.0)
Switzerland	6.3	(0.7)	2.6	(0.7)	3.7	(0.7)	44.2	(2.9)	36.3	(3.0)	7.9	(2.6)	52.6	(2.7)	48.2	(2.9)	4.2	(2.3)
Turkey	3.2	(2.0)	0.6	(0.6)	2.5	(1.8)	73.7	(3.8)	57.7	(4.9)	16.0	(3.4)	33.8	(4.0)	19.6	(3.0)	14.2	(3.0)
United Kingdom	10.5	(0.8)	2.0	(0.9)	8.4	(0.8)	91.6	(1.6)	93.6	(1.3)	-2.0	(0.9)	13.5	(1.8)	2.6	(0.5)	10.9	(1.6)
United States	10.4	(1.3)	2.7	(0.9)	7.7	(1.2)	75.4	(3.2)	71.4	(3.9)	3.9	(3.4)	9.1	(2.1)	5.7	(1.9)	3.4	(1.9)
OECD average	17.1	(0.4)	11.6	(0.4)	5.4	(0.4)	75.7	(0.5)	70.0	(0.6)	5.7	(0.5)	27.4	(0.5)	22.7	(0.5)	4.6	(0.4)
Partners																		
Argentina	44.1	(4.5)	14.8	(2.6)	29.3	(4.2)	86.7	(2.6)	68.3	(5.1)	18.4	(3.4)	9.0	(2.7)	3.4	(1.7)	5.6	(2.6)
Azerbaijan	1.4	(0.6)	0.0	(0.6)	1.4	(0.6)	m	m	m	m	m	m	17.9	(3.3)	15.9	(3.8)	2.0	(3.5)
Brazil	20.0	(1.6)	0.7	(0.2)	19.2	(1.5)	73.3	(2.5)	55.2	(3.2)	18.2	(3.0)	8.8	(1.8)	6.5	(2.4)	2.3	(2.6)
Bulgaria	m	m	m	m	m	m	88.5	(3.0)	77.8	(4.7)	10.7	(3.9)	89.9	(2.3)	72.0	(4.0)	18.0	(3.0)
Chile	65.4	(2.0)	38.5	(4.4)	27.0	(4.3)	85.9	(2.7)	70.9	(5.8)	15.0	(4.8)	38.0	(3.9)	21.9	(4.8)	16.1	(4.5)
Colombia	25.2	(3.2)	7.1	(2.3)	18.1	(2.8)	79.0	(4.3)	69.5	(7.2)	9.5	(4.9)	23.7	(3.9)	11.8	(2.7)	11.9	(3.0)
Croatia	2.0	(1.4)	0.2	(0.1)	1.8	(1.3)	78.1	(3.5)	74.8	(4.0)	3.4	(2.5)	93.1	(1.7)	85.5	(2.9)	7.6	(2.3)
Estonia	2.5	(1.2)	0.9	(0.5)	1.6	(0.9)	80.5	(2.5)	74.9	(3.3)	5.6	(2.2)	49.9	(3.5)	33.1	(3.6)	16.8	(2.4)
Hong Kong-China	91.7	(0.6)	94.2	(1.1)	-2.5	(1.6)	98.4	(1.1)	99.4	(0.6)	-1.0	(0.9)	84.1	(3.4)	80.4	(3.5)	3.6	(2.6)
Indonesia	37.2	(3.7)	45.3	(3.9)	-8.1	(3.2)	95.9	(1.5)	92.6	(2.0)	3.3	(1.8)	68.3	(4.6)	52.0	(4.8)	16.3	(3.9)
Israel	32.5	(4.0)	26.8	(4.0)	5.7	(3.1)	82.0	(3.5)	84.3	(3.6)	-2.3	(3.3)	38.0	(4.9)	31.0	(4.8)	7.0	(3.9)
Jordan	24.5	(2.2)	11.1	(1.0)	13.5	(2.3)	58.4	(4.1)	50.6	(4.3)	7.8	(2.7)	29.5	(3.8)	22.0	(3.7)	7.6	(3.5)
Kyrgyzstan	2.2	(1.1)	0.1	(0.1)	2.1	(1.0)	65.7	(2.9)	63.3	(3.5)	2.4	(2.5)	22.9	(3.3)	22.3	(3.8)	0.7	(2.7)
Latvia	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	96.3	(1.6)	95.1	(2.0)	1.2	(1.7)	21.2	(2.8)	10.3	(1.9)	10.9	(1.7)
Lithuania	1.1	(1.1)	0.0	(0.0)	1.1	(1.1)	76.1	(3.1)	65.7	(3.7)	10.4	(3.3)	14.5	(3.0)	4.3	(1.2)	10.1	(2.4)
Macao-China	97.9	(0.2)	92.9	(0.3)	5.0	(0.5)	88.4	(0.3)	91.3	(0.5)	-3.0	(0.8)	66.0	(0.5)	67.2	(1.0)	-1.3	(1.5)
Montenegro	0.3	(0.0)	0.0	(0.0)	0.3	(0.0)	99.1	(0.1)	97.2	(0.4)	1.9	(0.5)	69.7	(0.6)	61.1	(1.1)	8.5	(1.7)
Romania	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	57.9	(6.0)	48.5	(5.4)	9.4	(4.4)	64.9	(4.1)	55.0	(5.5)	9.9	(4.1)
Russian Federation	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	67.8	(4.4)	68.4	(4.7)	-0.5	(3.0)	11.7	(2.6)	9.2	(1.7)	2.5	(2.2)
Serbia	0.6	(0.6)	0.7	(0.7)	-0.1	(0.1)	73.4	(3.7)	71.8	(4.3)	1.7	(3.2)	93.4	(1.8)	87.2	(3.2)	6.1	(2.2)
Slovenia	3.2	(0.1)	0.6	(0.2)	2.6	(0.3)	57.3	(0.5)	42.5	(1.3)	14.9	(1.4)	43.8	(0.6)	26.8	(1.2)	17.0	(1.7)
Chinese Taipei	35.0	(1.9)	35.5	(4.4)	-0.5	(3.7)	94.2	(2.0)	92.7	(2.7)	1.5	(1.9)	57.9	(2.9)	42.4	(4.4)	15.5	(3.5)
Thailand	19.4	(0.9)	10.7	(2.0)	8.7	(2.5)	88.8	(2.9)	87.3	(3.4)	1.5	(2.4)	46.7	(4.3)	37.1	(5.0)	9.6	(4.6)
Tunisia	2.9	(1.2)	1.1	(0.5)	1.8	(0.9)	53.8	(5.4)	45.9	(5.7)	7.9	(4.5)	22.6	(3.8)	25.6	(4.8)	-3.1	(4.2)
Uruguay	21.9	(1.1)	1.3	(0.3)	20.6	(1.1)	54.9	(2.6)	34.3	(3.9)	20.5	(2.7)	9.4	(1.9)	8.3	(2.1)	1.1	(2.3)

Note:

m - Data are not available. These data were collected but subsequently removed from the publication for technical reasons.
w - Data have been withdrawn at the request of the country concerned.



[Part 2/2] **Learning environment at school among disadvantaged and non-disadvantaged students**
Table A3.3a

	Index of school activities to promote the learning of science						Index of the quality of school educational resources					
	Non-disadvantaged students		Disadvantaged students		Difference		Non-disadvantaged students		Disadvantaged students		Difference	
	Mean	S.E.	Mean	S.E.	Dif.	S.E.	Mean	S.E.	Mean	S.E.	Dif.	S.E.
OECD												
Australia	0.44	(0.04)	0.34	(0.04)	0.10	(0.03)	0.51	(0.05)	0.20	(0.06)	0.32	(0.05)
Austria	-0.25	(0.08)	-0.65	(0.07)	0.41	(0.06)	0.38	(0.09)	0.33	(0.10)	0.05	(0.08)
Belgium	-0.17	(0.05)	-0.33	(0.07)	0.15	(0.04)	-0.04	(0.06)	-0.02	(0.07)	-0.02	(0.05)
Canada	0.44	(0.04)	0.36	(0.04)	0.09	(0.03)	0.11	(0.06)	0.03	(0.05)	0.08	(0.04)
Czech Republic	0.53	(0.07)	0.31	(0.07)	0.21	(0.05)	-0.04	(0.07)	-0.14	(0.07)	0.10	(0.05)
Denmark	-0.81	(0.07)	-0.86	(0.07)	0.05	(0.04)	-0.06	(0.06)	-0.14	(0.07)	0.08	(0.05)
Finland	-0.58	(0.05)	-0.64	(0.07)	0.06	(0.04)	-0.23	(0.07)	-0.23	(0.05)	0.00	(0.05)
France	w	w	w	w	w	w	w	w	w	w	w	w
Germany	0.02	(0.05)	-0.34	(0.06)	0.36	(0.05)	0.12	(0.08)	0.07	(0.08)	0.05	(0.06)
Greece	-0.34	(0.07)	-0.58	(0.07)	0.24	(0.06)	0.04	(0.09)	-0.15	(0.07)	0.18	(0.07)
Hungary	0.70	(0.06)	0.46	(0.07)	0.24	(0.06)	0.22	(0.07)	0.15	(0.08)	0.08	(0.07)
Iceland	-0.69	(0.01)	-0.74	(0.02)	0.05	(0.02)	0.24	(0.01)	0.12	(0.02)	0.12	(0.03)
Ireland	0.16	(0.08)	0.04	(0.08)	0.12	(0.06)	-0.32	(0.08)	-0.32	(0.08)	-0.00	(0.06)
Italy	0.08	(0.04)	-0.14	(0.05)	0.23	(0.04)	0.23	(0.05)	0.09	(0.06)	0.14	(0.04)
Japan	-1.07	(0.08)	-1.31	(0.08)	0.24	(0.06)	0.50	(0.07)	0.34	(0.08)	0.17	(0.06)
Korea	0.63	(0.07)	0.37	(0.09)	0.27	(0.06)	-0.19	(0.07)	-0.19	(0.09)	-0.00	(0.07)
Luxembourg	0.27	(0.01)	-0.08	(0.02)	0.35	(0.03)	0.25	(0.01)	0.28	(0.02)	-0.03	(0.03)
Mexico	0.12	(0.04)	-0.32	(0.06)	0.45	(0.06)	-0.66	(0.06)	-1.25	(0.06)	0.58	(0.06)
Netherlands	-0.41	(0.08)	-0.70	(0.09)	0.29	(0.05)	0.27	(0.07)	0.24	(0.08)	0.02	(0.06)
New Zealand	0.54	(0.06)	0.44	(0.07)	0.10	(0.06)	0.37	(0.06)	0.19	(0.08)	0.17	(0.06)
Norway	-0.48	(0.05)	-0.53	(0.06)	0.06	(0.05)	-0.42	(0.05)	-0.46	(0.05)	0.03	(0.03)
Poland	0.64	(0.05)	0.46	(0.05)	0.18	(0.04)	-0.07	(0.07)	-0.13	(0.07)	0.06	(0.05)
Portugal	0.65	(0.06)	0.68	(0.09)	-0.03	(0.07)	-0.38	(0.06)	-0.39	(0.07)	0.01	(0.05)
Slovak Republic	0.76	(0.06)	0.58	(0.06)	0.18	(0.05)	-0.57	(0.05)	-0.50	(0.07)	-0.07	(0.06)
Spain	0.23	(0.07)	0.13	(0.07)	0.10	(0.05)	0.04	(0.06)	-0.13	(0.07)	0.16	(0.05)
Sweden	-0.47	(0.07)	-0.52	(0.09)	0.05	(0.05)	0.09	(0.07)	-0.04	(0.07)	0.13	(0.05)
Switzerland	-0.19	(0.04)	-0.37	(0.04)	0.17	(0.03)	0.70	(0.07)	0.62	(0.07)	0.08	(0.05)
Turkey	-0.03	(0.09)	-0.41	(0.10)	0.38	(0.09)	-0.80	(0.10)	-0.91	(0.07)	0.11	(0.06)
United Kingdom	0.44	(0.06)	0.36	(0.07)	0.07	(0.05)	0.34	(0.09)	0.12	(0.08)	0.22	(0.07)
United States	0.49	(0.08)	0.44	(0.11)	0.05	(0.09)	0.32	(0.08)	0.22	(0.11)	0.10	(0.09)
OECD average	0.06	(0.01)	-0.12	(0.01)	0.18	(0.01)	0.03	(0.01)	-0.07	(0.01)	0.10	(0.01)
Partners												
Argentina	0.13	(0.08)	0.07	(0.08)	0.06	(0.09)	-0.38	(0.10)	-0.87	(0.09)	0.49	(0.10)
Azerbaijan	0.34	(0.08)	0.13	(0.08)	0.21	(0.07)	-1.32	(0.05)	-1.47	(0.07)	0.16	(0.06)
Brazil	0.29	(0.04)	0.15	(0.05)	0.14	(0.05)	-0.71	(0.07)	-1.49	(0.06)	0.78	(0.07)
Bulgaria	0.15	(0.07)	-0.24	(0.08)	0.39	(0.08)	-0.55	(0.06)	-0.64	(0.07)	0.09	(0.06)
Chile	-0.12	(0.11)	-0.57	(0.18)	0.45	(0.15)	-0.47	(0.08)	-0.95	(0.14)	0.48	(0.12)
Colombia	0.89	(0.06)	0.69	(0.11)	0.20	(0.08)	-1.03	(0.08)	-1.46	(0.09)	0.43	(0.07)
Croatia	0.21	(0.08)	0.03	(0.10)	0.19	(0.07)	-0.54	(0.06)	-0.59	(0.07)	0.05	(0.06)
Estonia	0.92	(0.04)	0.85	(0.05)	0.07	(0.03)	-0.27	(0.05)	-0.31	(0.05)	0.04	(0.04)
Hong Kong-China	0.93	(0.06)	0.89	(0.07)	0.04	(0.05)	0.37	(0.08)	0.30	(0.09)	0.07	(0.06)
Indonesia	0.08	(0.10)	-0.28	(0.11)	0.36	(0.10)	-1.46	(0.10)	-1.95	(0.11)	0.49	(0.12)
Israel	0.19	(0.10)	0.24	(0.09)	-0.05	(0.08)	0.11	(0.09)	-0.02	(0.11)	0.13	(0.07)
Jordan	0.91	(0.08)	0.81	(0.07)	0.10	(0.05)	-0.63	(0.08)	-0.95	(0.09)	0.33	(0.07)
Kyrgyzstan	0.79	(0.05)	0.69	(0.07)	0.09	(0.04)	-2.23	(0.07)	-2.48	(0.07)	0.25	(0.06)
Latvia	0.20	(0.03)	0.18	(0.04)	0.02	(0.04)	-0.53	(0.05)	-0.54	(0.06)	0.00	(0.04)
Lithuania	1.24	(0.04)	1.09	(0.05)	0.15	(0.03)	-0.37	(0.05)	-0.42	(0.05)	0.05	(0.04)
Macao-China	0.44	(0.01)	0.47	(0.01)	-0.03	(0.02)	0.05	(0.01)	0.09	(0.01)	-0.04	(0.02)
Montenegro	0.36	(0.01)	0.31	(0.02)	0.05	(0.04)	-1.28	(0.01)	-1.22	(0.02)	-0.06	(0.03)
Romania	0.86	(0.09)	0.60	(0.09)	0.25	(0.06)	-0.67	(0.07)	-0.90	(0.09)	0.24	(0.08)
Russian Federation	1.22	(0.05)	1.14	(0.05)	0.08	(0.04)	-1.13	(0.05)	-1.28	(0.05)	0.15	(0.06)
Serbia	0.40	(0.08)	0.13	(0.09)	0.27	(0.07)	-0.70	(0.06)	-0.67	(0.05)	-0.03	(0.05)
Slovenia	1.21	(0.01)	1.03	(0.02)	0.17	(0.02)	0.22	(0.01)	0.21	(0.03)	0.02	(0.03)
Chinese Taipei	0.87	(0.05)	0.56	(0.09)	0.30	(0.07)	0.71	(0.10)	0.36	(0.20)	0.35	(0.16)
Thailand	1.36	(0.06)	1.30	(0.06)	0.06	(0.06)	-0.46	(0.07)	-1.09	(0.08)	0.63	(0.08)
Tunisia	0.40	(0.08)	0.29	(0.12)	0.11	(0.11)	-0.67	(0.06)	-0.73	(0.07)	0.06	(0.06)
Uruguay	0.00	(0.05)	-0.04	(0.07)	0.04	(0.06)	-0.51	(0.07)	-1.13	(0.09)	0.62	(0.08)

Note:

m - Data are not available. These data were collected but subsequently removed from the publication for technical reasons.

w - Data have been withdrawn at the request of the country concerned.

[Part 1/2] **Learning environment at school, overall performance effect and differential effect for disadvantaged students**
Table A3.3b

	Students in private schools				Students in schools which compete for students				Students in schools which select based on academic record			
	Average association with performance for all students		Differential effect for disadvantaged students		Average association with performance for all students		Differential effect for disadvantaged students		Average association with performance for all students		Differential effect for disadvantaged students	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
OECD												
Australia	w	w	w	w	-3.8	(6.3)	-2.4	(7.2)	13.1	(9.6)	c	c
Austria	-0.0	(10.5)	c	c	10.3	(6.9)	0.9	(6.4)	46.3	(7.2)	11.3	(7.0)
Belgium	1.8	(4.3)	w	w	1.1	(7.1)	-21.0	(8.5)	11.6	(4.5)	1.9	(5.1)
Canada	17.7	(4.8)	c	c	2.2	(3.6)	5.5	(5.5)	11.5	(8.9)	c	c
Czech Republic	-38.5	(9.4)	c	c	-3.8	(8.4)	-11.8	(8.2)	31.7	(9.7)	-6.9	(6.7)
Denmark	-0.9	(6.8)	-4.5	(7.8)	-8.1	(4.2)	-7.4	(8.0)	0.5	(8.2)	c	c
Finland	c	c	c	c	-1.4	(3.5)	-7.7	(5.1)	6.6	(13.3)	c	c
France	w	w	w	w	w	w	w	w	w	w	w	w
Germany	-8.2	(15.7)	c	c	4.7	(5.5)	-1.3	(8.1)	12.0	(5.9)	1.6	(6.6)
Greece	-7.8	(13.7)	c	c	-4.8	(6.1)	3.0	(6.7)	-8.7	(10.9)	c	c
Hungary	-14.8	(9.8)	c	c	0.6	(6.3)	10.4	(7.7)	23.0	(7.1)	9.8	(6.9)
Iceland	c	c	c	c	4.2	(3.7)	-17.6	(7.4)	c	c	c	c
Ireland	4.9	(4.7)	-8.4	(6.8)	-6.7	(5.3)	-21.8	(6.2)	c	c	c	c
Italy	-34.2	(13.2)	c	c	9.7	(7.2)	9.9	(7.3)	-3.6	(14.0)	c	c
Japan	-57.3	(6.6)	-3.4	(8.0)	-30.1	(9.8)	8.5	(15.5)	19.5	(11.5)	-12.3	(10.6)
Korea	-1.5	(6.1)	-5.6	(8.2)	15.7	(5.7)	-17.2	(10.1)	17.2	(5.4)	-1.9	(7.3)
Luxembourg	-10.0	(3.4)	9.9	(5.9)	-2.3	(2.5)	14.0	(4.7)	8.6	(2.5)	5.1	(5.2)
Mexico	-31.5	(5.5)	c	c	-4.1	(4.8)	-1.6	(7.1)	15.2	(3.3)	-7.4	(6.0)
Netherlands	4.6	(5.7)	-1.2	(6.4)	-2.3	(12.7)	9.8	(7.4)	9.9	(7.1)	-7.5	(5.6)
New Zealand	8.6	(6.0)	c	c	-2.3	(5.6)	2.4	(10.4)	8.9	(6.1)	c	c
Norway	c	c	c	c	-1.6	(4.8)	4.9	(7.7)	0.0	0.0	c	c
Poland	c	c	c	c	3.2	(4.4)	-3.3	(5.4)	10.7	(6.1)	c	c
Portugal	7.1	(6.2)	c	c	1.6	(4.2)	-9.1	(5.6)	-19.7	(7.4)	c	c
Slovak Republic	-22.1	(9.2)	c	c	-6.9	(11.2)	17.6	(16.6)	7.8	(7.5)	0.6	(10.0)
Spain	-6.8	(3.5)	-1.2	(5.1)	-0.5	(3.3)	-11.7	(6.3)	c	c	c	c
Sweden	12.4	(7.2)	c	c	4.6	(4.5)	-5.1	(9.2)	c	c	c	c
Switzerland	-50.3	(16.7)	c	c	4.6	(4.9)	-4.9	(5.6)	18.5	(4.7)	-17.8	(5.2)
Turkey	c	c	c	c	2.4	(6.0)	2.3	(6.5)	20.8	(6.8)	-4.5	(5.8)
United Kingdom	10.3	(12.5)	c	c	-10.0	(6.5)	c	c	43.4	(12.0)	c	c
United States	1.5	(8.7)	c	c	0.2	(5.9)	-7.6	(8.1)	-3.5	(9.5)	c	c
OECD average	-9.3	(1.9)	-2.1	(2.6)	-0.8	(1.2)	-2.3	(1.5)	12.0	(1.7)	-2.1	(1.9)
Partners												
Argentina	5.2	(7.5)	-2.2	(10.1)	14.9	(9.6)	-7.6	(11.1)	6.7	(8.1)	c	c
Azerbaijan	c	c	c	c	m	m	m	m	3.9	(6.3)	-5.0	(7.3)
Brazil	-10.8	(8.3)	c	c	-8.4	(4.0)	5.1	(5.7)	9.8	(9.3)	c	c
Bulgaria	m	m	m	m	-4.2	(9.8)	-9.4	(11.6)	-0.6	(8.3)	-17.3	(9.6)
Chile	-1.4	(5.5)	14.3	(7.4)	-2.9	(5.8)	-5.8	(7.7)	14.7	(5.4)	2.7	(8.8)
Colombia	0.3	(12.8)	c	c	5.8	(7.4)	-8.3	(8.1)	9.5	(6.6)	10.9	(8.2)
Croatia	c	c	c	c	-5.2	(7.0)	7.8	(7.0)	23.5	(9.5)	-21.0	(9.1)
Estonia	c	c	c	c	-2.5	(5.8)	-0.5	(8.6)	2.8	(4.0)	-3.2	(7.8)
Hong Kong-China	-13.0	(6.3)	19.8	(13.4)	c	c	c	c	10.2	(9.6)	3.5	(9.3)
Indonesia	-15.0	(7.1)	5.6	(6.8)	17.2	(6.1)	c	c	13.8	(5.0)	-3.8	(5.4)
Israel	6.5	(8.8)	-21.8	(8.2)	-2.3	(12.3)	-4.7	(13.2)	6.0	(9.4)	-1.9	(10.1)
Jordan	27.7	(7.2)	2.3	(7.6)	-3.4	(5.1)	2.2	(7.1)	-2.3	(5.5)	-4.9	(7.6)
Kyrgyzstan	c	c	c	c	2.8	(5.6)	5.1	(6.3)	-2.4	(6.8)	8.1	(7.9)
Latvia	c	c	c	c	1.7	(13.5)	c	c	-0.1	(6.4)	14.3	(8.0)
Lithuania	c	c	c	c	-6.7	(5.2)	4.0	(5.8)	23.5	(7.7)	c	c
Macao-China	25.7	(5.1)	-8.2	(11.6)	30.6	(3.3)	c	c	20.3	(2.2)	-7.0	(5.1)
Montenegro	c	c	c	c	c	c	c	c	-1.1	(2.3)	5.7	(5.3)
Romania	c	c	c	c	-9.2	(7.5)	3.3	(7.7)	24.1	(7.5)	-18.5	(7.8)
Russian Federation	c	c	c	c	-1.1	(4.8)	-8.9	(6.3)	-10.2	(9.2)	-11.2	(9.5)
Serbia	c	c	c	c	-18.2	(6.7)	-2.7	(8.3)	33.9	(10.9)	7.8	(10.5)
Slovenia	c	c	c	c	0.0	(2.2)	-16.5	(5.0)	22.4	(2.8)	-0.2	(5.2)
Chinese Taipei	-55.8	(4.6)	6.0	(6.3)	-12.9	(11.5)	c	c	25.8	(7.5)	12.2	(6.5)
Thailand	-19.7	(6.1)	3.1	(10.4)	-3.5	(5.8)	8.5	(8.9)	-2.1	(4.2)	-5.7	(5.7)
Tunisia	c	c	c	c	-2.9	(4.7)	9.4	(6.0)	4.4	(6.1)	-14.0	(8.5)
Uruguay	-21.2	(7.8)	c	c	1.7	(5.5)	7.7	(6.4)	9.6	(5.4)	c	c

Note:

m - Data are not available. These data were collected but subsequently removed from the publication for technical reasons.

w - Data have been withdrawn at the request of the country concerned.

c - There are too few observations to provide reliable estimates (i.e. there are fewer than 30 students or less than 3% of students for this cell or too few schools for valid inferences).



Table A3.3b ^[Part 2/2] Learning environment at school, overall performance effect and differential effect for disadvantaged students

	Index of school activities to promote the learning of science				Index of the quality of school educational resources			
	Average association with performance for all students		Differential effect for disadvantaged students		Average association with performance for all students		Differential effect for disadvantaged students	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
OECD								
Australia	2.9	(2.8)	-6.4	(3.7)	1.3	(1.8)	-0.1	(2.3)
Austria	14.4	(3.4)	4.1	(3.5)	-2.9	(2.8)	-7.3	(2.7)
Belgium	2.8	(2.6)	-2.7	(3.0)	-0.3	(2.8)	1.3	(3.1)
Canada	3.2	(1.8)	1.3	(3.0)	-0.3	(1.5)	-1.8	(2.2)
Czech Republic	11.9	(4.1)	2.5	(3.3)	-2.1	(4.3)	-10.6	(4.1)
Denmark	6.8	(2.7)	-1.0	(3.8)	-0.9	(2.6)	8.1	(4.1)
Finland	-4.4	(2.6)	-1.2	(4.2)	-2.9	(2.4)	-1.4	(3.4)
France	w	w	w	w	w	w	w	w
Germany	9.8	(2.5)	-1.3	(2.8)	3.3	(1.8)	-2.9	(3.2)
Greece	10.0	(3.4)	2.9	(3.9)	6.3	(3.5)	2.3	(4.8)
Hungary	7.4	(3.8)	-1.9	(4.7)	1.9	(3.0)	-4.6	(4.2)
Iceland	-8.0	(2.4)	-5.8	(4.7)	3.0	(1.6)	7.8	(3.6)
Ireland	1.2	(2.1)	0.6	(3.4)	0.5	(2.8)	-1.3	(3.1)
Italy	-1.6	(2.6)	-2.5	(3.0)	3.4	(2.9)	-1.3	(2.2)
Japan	11.2	(3.7)	-8.4	(4.1)	2.6	(3.1)	1.1	(4.0)
Korea	6.2	(3.4)	0.5	(3.4)	6.8	(3.5)	3.7	(5.0)
Luxembourg	-0.4	(1.1)	-3.2	(2.8)	1.0	(1.2)	1.3	(2.6)
Mexico	2.4	(1.8)	-4.7	(2.6)	-0.7	(1.5)	0.2	(2.7)
Netherlands	8.1	(4.1)	5.2	(3.2)	5.2	(3.0)	5.8	(2.7)
New Zealand	1.3	(3.5)	-1.4	(4.8)	3.7	(2.7)	-1.9	(4.0)
Norway	-2.5	(3.1)	-7.5	(4.0)	-4.7	(3.3)	-2.0	(5.9)
Poland	7.7	(3.9)	1.2	(5.1)	-0.8	(2.0)	1.4	(3.1)
Portugal	0.7	(1.8)	-1.9	(2.6)	1.7	(1.8)	-1.5	(2.5)
Slovak Republic	7.8	(3.3)	4.2	(4.4)	-0.4	(3.7)	0.8	(3.6)
Spain	1.1	(2.4)	-1.0	(2.6)	1.2	(1.9)	-0.0	(2.7)
Sweden	3.2	(2.4)	-9.8	(4.2)	1.6	(1.9)	-2.1	(3.7)
Switzerland	16.0	(2.9)	-7.5	(3.1)	6.8	(2.2)	-1.2	(2.4)
Turkey	5.4	(2.9)	0.9	(3.6)	-1.9	(3.1)	0.4	(3.2)
United Kingdom	-0.8	(2.4)	0.9	(3.7)	-1.1	(2.4)	-1.4	(3.4)
United States	-6.6	(2.5)	-0.4	(3.2)	1.3	(2.2)	-3.8	(3.5)
OECD average	4.0	(0.5)	-1.5	(0.7)	1.1	(0.5)	-0.4	(0.6)
Partners								
Argentina	3.5	(3.0)	-2.2	(2.8)	5.9	(2.2)	-6.0	(3.2)
Azerbaijan	7.9	(2.7)	2.0	(3.4)	0.6	(3.9)	-2.1	(5.1)
Brazil	4.0	(2.6)	-1.5	(3.6)	6.2	(1.9)	-1.7	(3.0)
Bulgaria	6.4	(4.5)	-0.8	(4.6)	-2.9	(4.6)	0.3	(6.3)
Chile	2.8	(2.2)	-3.1	(3.1)	1.8	(2.5)	1.4	(3.9)
Colombia	2.1	(3.6)	1.2	(4.6)	-0.4	(3.0)	0.4	(3.5)
Croatia	8.0	(2.2)	-1.1	(2.8)	-0.4	(5.6)	0.2	(6.0)
Estonia	1.1	(4.3)	8.0	(6.1)	-1.6	(4.0)	-3.9	(4.5)
Hong Kong-China	1.4	(6.0)	-5.3	(4.9)	1.7	(3.5)	2.3	(3.0)
Indonesia	10.4	(3.7)	-3.7	(2.8)	2.9	(2.4)	-3.1	(2.2)
Israel	6.7	(3.6)	-7.0	(4.2)	2.1	(2.9)	-10.7	(3.3)
Jordan	2.3	(3.3)	3.4	(3.2)	-3.0	(2.8)	3.3	(3.6)
Kyrgyzstan	4.2	(3.7)	2.1	(4.9)	-4.7	(2.9)	1.1	(4.1)
Latvia	3.6	(4.9)	-6.2	(8.7)	-1.7	(3.5)	1.5	(4.9)
Lithuania	0.1	(4.0)	-7.8	(4.6)	4.8	(3.2)	-5.0	(4.2)
Macao-China	8.8	(1.5)	0.2	(3.3)	2.2	(1.3)	-12.3	(3.4)
Montenegro	-8.7	(1.2)	-0.6	(2.5)	4.9	(0.9)	-0.9	(2.5)
Romania	10.3	(5.0)	2.1	(5.3)	2.2	(3.5)	0.8	(4.4)
Russian Federation	9.8	(4.2)	5.9	(4.5)	-1.2	(2.5)	-3.0	(4.0)
Serbia	6.7	(3.5)	0.9	(4.1)	6.3	(4.3)	5.7	(5.6)
Slovenia	5.1	(1.5)	0.2	(3.1)	-0.3	(1.5)	-6.3	(3.3)
Chinese Taipei	13.5	(5.1)	-2.2	(3.5)	-4.1	(2.1)	-1.4	(2.2)
Thailand	8.2	(3.4)	-8.9	(4.8)	0.9	(1.7)	1.5	(2.9)
Tunisia	3.3	(2.0)	-5.3	(2.8)	-1.9	(2.7)	2.3	(4.1)
Uruguay	1.9	(1.6)	-1.8	(2.6)	-1.8	(2.1)	-1.7	(2.5)

Note:

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w - Data have been withdrawn at the request of the country concerned.

c - There are too few observations to provide reliable estimates (i.e. there are fewer than 30 students or less than 3% of students for this cell or too few schools for valid inferences).

ANNEX A4: CONCLUSIONS AND POLICY IMPLICATIONS

Table A4.1 Missing data analysis and agreement analysis for parental occupation by country and ESCS tertile

		Highest Parental Occupation Status (HISEI versus PQHISEI)											
		Percent of students with no useable data				Percent of students that accurately indicate their parents' highest occupation status				Average disagreement between student and parent report ¹			
		Low ESCS	Mid ESCS	High ESCS	Overall	Low ESCS	Mid ESCS	High ESCS	Overall	Low ESCS	Mid ESCS	High ESCS	Overall
OECD	Denmark	52.3	38.0	32.3	40.9	46.5	45.8	54.7	49.4	7.8	7.3	5.5	6.7
	Germany	31.6	21.6	16.3	23.2	48.2	42.9	45.9	45.6	6.0	6.5	6.7	6.4
	Iceland	38.3	38.7	35.3	37.4	42.5	42.0	52.5	45.8	7.1	8.0	5.7	6.9
	Italy	19.5	16.4	15.9	17.3	49.2	42.1	47.4	46.2	4.7	5.7	5.7	5.4
	Korea	5.6	3.8	2.7	4.0	33.5	29.8	35.8	33.1	8.0	9.0	7.9	8.3
	Luxembourg	34.2	27.4	26.2	29.3	48.6	38.8	38.4	41.7	5.5	6.4	6.9	6.3
	New Zealand	45.5	31.8	23.5	33.6	45.1	44.5	60.7	50.9	7.5	7.2	5.4	6.6
	Poland	6.4	4.3	3.1	4.6	56.6	47.4	44.6	49.5	4.3	5.5	6.0	5.3
	Portugal	16.9	16.3	16.2	16.5	55.1	48.7	50.5	51.4	3.5	5.7	6.5	5.2
	Turkey	15.6	14.1	10.9	13.5	76.6	77.7	77.4	77.3	3.1	3.3	3.1	3.2
Partners	Bulgaria	11.4	8.6	10.7	10.3	99.0	99.4	99.7	99.4	0.1	0.1	0.0	0.1
	Colombia	17.5	15.5	10.7	14.6	60.4	54.6	50.7	55.1	4.9	6.2	6.7	6.0
	Croatia	12.6	8.8	8.2	9.9	68.2	68.5	69.3	68.7	3.3	3.6	3.9	3.6
	Hong Kong-China	13.6	8.2	6.4	9.4	62.7	55.4	50.7	56.1	3.6	4.6	5.2	4.5
	Macao-China	8.64	6.28	4.58	6.51	46.18	44.32	42.99	44.48	5.11	5.68	6.88	5.90

¹ Occupation status values range from 16 to 90.

Table A4.2 Missing data analysis and agreement analysis for parental education by country and ESCS tertile

		Highest Parental Education (HISCED versus PQISCED)											
		Percent of students with no useable data				Percent of students that accurately indicate their parents' highest education				Average disagreement between student and parent report ¹			
		Low ESCS	Mid ESCS	High ESCS	Overall	Low ESCS	Mid ESCS	High ESCS	Overall	Low ESCS	Mid ESCS	High ESCS	Overall
OECD	Denmark	51.90	37.49	30.44	39.95	45.56	52.89	66.44	56.17	0.69	0.60	0.39	0.54
	Germany	29.90	21.56	15.18	22.22	45.81	42.05	67.64	52.49	0.74	0.84	0.49	0.68
	Iceland	38.25	37.85	34.58	36.89	59.72	47.56	71.86	59.94	0.49	0.67	0.35	0.50
	Italy	26.05	17.15	15.27	19.49	63.52	69.65	75.16	69.71	0.38	0.35	0.35	0.36
	Korea	4.10	2.19	1.72	2.67	68.40	70.12	85.06	74.59	0.37	0.38	0.18	0.31
	Luxembourg	39.19	32.38	26.98	32.85	62.80	49.61	52.70	54.71	0.45	0.64	0.61	0.57
	New Zealand	48.41	34.39	24.42	35.74	55.67	53.95	68.30	60.04	0.59	0.61	0.39	0.52
	Poland	1.89	1.83	1.52	1.75	84.92	81.34	86.85	84.39	0.16	0.22	0.24	0.21
	Portugal	19.01	16.17	14.27	16.49	83.06	57.48	72.13	70.79	0.20	0.48	0.39	0.36
	Turkey	13.80	10.63	3.40	9.28	92.60	83.23	81.54	85.60	0.09	0.19	0.22	0.17
Partners	Bulgaria	7.20	5.57	10.12	7.65	74.59	72.22	85.21	77.27	0.28	0.39	0.24	0.30
	Colombia	18.31	12.37	6.93	12.54	81.68	58.00	65.35	67.98	0.25	0.55	0.47	0.43
	Croatia	9.17	6.13	5.48	6.93	61.01	62.48	67.70	63.77	0.47	0.43	0.41	0.43
	Hong Kong-China	5.26	3.68	4.18	4.38	97.69	84.90	62.24	81.54	0.03	0.17	0.47	0.22
	Macao-China	5.61	3.37	2.79	3.93	87.95	71.37	58.65	72.57	0.13	0.32	0.52	0.32

¹ Parental education is measured by ISCED level.



[Part 1/2]
Table A4.3 Difference in means test results on matched sample for selected variables

	General interest in science						Science self-concept						Percentage of students who spend no time in school in regular lessons in science					
	Resilient students		Disadvantaged low achievers (DLA)		Difference		Resilient		Disadvantaged low achievers (DLA)		Difference		Resilient		Disadvantaged low achievers (DLA)		Difference	
	Mean	S.E.	Mean	S.E.	Diff.	S.E.	Mean	S.E.	Mean	S.E.	Diff.	S.E.	Percent	S.E.	Percent	S.E.	Diff.	S.E.
	OECD	0.11	(0.04)	-0.70	(0.05)	0.80	(0.06)	0.34	(0.03)	-0.57	(0.04)	0.91	(0.06)	9.68	(1.34)	23.12	(1.92)	-13.44
Australia	0.24	(0.06)	-0.25	(0.07)	0.49	(0.08)	0.30	(0.07)	-0.20	(0.08)	0.50	(0.11)	7.63	(1.66)	26.32	(2.50)	-18.70	(2.83)
Austria	0.27	(0.05)	-0.47	(0.06)	0.74	(0.08)	0.07	(0.06)	-0.47	(0.06)	0.54	(0.08)	5.28	(1.15)	40.99	(2.84)	-35.71	(2.94)
Belgium	0.31	(0.05)	-0.34	(0.05)	0.64	(0.07)	0.67	(0.05)	-0.29	(0.05)	0.96	(0.07)	6.46	(1.39)	19.95	(2.08)	-13.49	(2.23)
Canada	0.11	(0.05)	-0.20	(0.08)	0.31	(0.09)	0.06	(0.06)	-0.18	(0.07)	0.23	(0.09)	7.92	(2.13)	18.01	(2.98)	-10.09	(3.83)
Czech Republic	0.12	(0.06)	-0.68	(0.08)	0.80	(0.11)	0.23	(0.07)	-0.46	(0.07)	0.69	(0.10)	1.11	(0.87)	10.54	(2.47)	-9.43	(2.53)
Denmark	0.04	(0.05)	-0.68	(0.07)	0.72	(0.09)	0.38	(0.05)	-0.41	(0.05)	0.79	(0.07)	0.99	(0.68)	8.87	(1.84)	-7.88	(2.00)
Finland	0.52	(0.06)	-0.17	(0.07)	0.69	(0.08)	0.11	(0.07)	-0.40	(0.08)	0.51	(0.11)	1.40	(1.19)	19.37	(3.19)	-17.97	(3.55)
France	0.42	(0.05)	0.01	(0.07)	0.41	(0.08)	0.48	(0.06)	-0.03	(0.07)	0.51	(0.09)	5.34	(2.16)	23.01	(3.50)	-17.68	(4.05)
Germany	0.32	(0.06)	-0.16	(0.07)	0.48	(0.10)	0.04	(0.06)	-0.18	(0.05)	0.22	(0.08)	1.25	(1.11)	20.14	(2.65)	-18.88	(2.90)
Greece	0.05	(0.06)	-0.20	(0.07)	0.25	(0.09)	-0.26	(0.06)	-0.05	(0.09)	-0.21	(0.10)	6.94	(2.43)	9.76	(2.40)	-2.82	(3.10)
Hungary	0.18	(0.06)	-0.77	(0.09)	0.95	(0.11)	0.48	(0.06)	-0.75	(0.07)	1.22	(0.09)	0.51	(0.49)	4.39	(1.25)	-3.89	(1.31)
Iceland	0.11	(0.06)	-0.69	(0.09)	0.80	(0.11)	0.20	(0.07)	-0.61	(0.08)	0.82	(0.11)	8.35	(1.90)	31.50	(4.34)	-23.15	(4.36)
Ireland	0.29	(0.03)	-0.01	(0.04)	0.30	(0.05)	0.24	(0.03)	0.05	(0.04)	0.19	(0.05)	5.84	(1.68)	13.67	(1.35)	-7.83	(2.08)
Italy	0.15	(0.05)	-0.62	(0.06)	0.77	(0.08)	-0.63	(0.06)	-1.12	(0.06)	0.50	(0.08)	2.47	(1.19)	6.15	(1.97)	-3.68	(2.21)
Japan	0.06	(0.04)	-0.78	(0.06)	0.84	(0.08)	-0.49	(0.05)	-1.13	(0.05)	0.64	(0.07)	1.43	(0.82)	8.48	(2.55)	-7.06	(2.14)
Korea	0.33	(0.09)	-0.12	(0.09)	0.45	(0.12)	0.49	(0.08)	-0.08	(0.07)	0.57	(0.10)	4.45	(1.60)	19.90	(2.69)	-15.45	(3.18)
Luxembourg	0.99	(0.04)	0.65	(0.07)	0.34	(0.08)	0.51	(0.04)	0.46	(0.04)	0.05	(0.06)	19.21	(1.93)	9.29	(1.80)	9.92	(2.60)
Mexico	-0.13	(0.06)	-0.64	(0.08)	0.51	(0.10)	-0.14	(0.05)	-0.58	(0.06)	0.44	(0.08)	8.07	(1.84)	41.00	(3.67)	-32.93	(3.81)
Netherlands	0.15	(0.07)	-0.37	(0.08)	0.52	(0.10)	0.18	(0.05)	-0.31	(0.06)	0.49	(0.08)	4.08	(1.33)	17.43	(2.77)	-13.35	(3.03)
New Zealand	0.24	(0.07)	-0.46	(0.09)	0.70	(0.12)	0.37	(0.07)	-0.34	(0.06)	0.71	(0.09)	0.92	(0.77)	4.97	(1.48)	-4.05	(1.56)
Norway	0.21	(0.04)	-0.15	(0.05)	0.36	(0.06)	0.26	(0.05)	-0.07	(0.05)	0.34	(0.07)	0.80	(0.54)	5.68	(1.32)	-4.88	(1.45)
Poland	0.38	(0.05)	-0.02	(0.06)	0.40	(0.08)	0.48	(0.06)	0.06	(0.06)	0.42	(0.08)	13.09	(3.10)	7.94	(1.87)	5.14	(3.67)
Portugal	0.06	(0.05)	-0.30	(0.06)	0.36	(0.07)	0.27	(0.06)	-0.04	(0.05)	0.31	(0.07)	5.51	(1.69)	21.07	(2.79)	-15.56	(3.35)
Slovak Republic	0.02	(0.05)	-0.65	(0.05)	0.67	(0.07)	0.27	(0.05)	-0.42	(0.04)	0.69	(0.06)	7.24	(1.35)	13.77	(1.50)	-6.53	(1.87)
Spain	0.04	(0.10)	-0.66	(0.09)	0.70	(0.11)	0.38	(0.07)	-0.55	(0.07)	0.93	(0.09)	1.12	(0.63)	9.35	(1.98)	-8.24	(2.16)
Sweden	0.24	(0.05)	-0.46	(0.05)	0.70	(0.07)	0.29	(0.05)	-0.37	(0.05)	0.67	(0.07)	7.49	(2.14)	28.50	(2.32)	-21.01	(2.99)
Switzerland	0.49	(0.06)	0.05	(0.08)	0.43	(0.09)	0.29	(0.06)	0.03	(0.09)	0.26	(0.11)	18.48	(2.65)	28.09	(3.41)	-9.61	(4.31)
Turkey	0.11	(0.06)	-0.28	(0.06)	0.39	(0.08)	0.28	(0.05)	-0.27	(0.04)	0.55	(0.06)	1.07	(0.61)	7.97	(1.36)	-6.90	(1.48)
United Kingdom	0.27	(0.05)	-0.10	(0.13)	0.36	(0.15)	0.58	(0.07)	-0.04	(0.12)	0.62	(0.14)	5.37	(1.41)	17.10	(3.47)	-11.73	(3.56)
United States	0.22	(0.02)	-0.33	(0.01)	0.55	(0.02)	0.22	(0.01)	-0.30	(0.01)	0.52	(0.02)	5.49	(0.30)	(17.12)	(0.68)	-11.62	(0.76)
OECD average	0.22	(0.02)	-0.33	(0.01)	0.55	(0.02)	0.22	(0.01)	-0.30	(0.01)	0.52	(0.02)	5.49	(0.30)	(17.12)	(0.68)	-11.62	(0.76)
Partners	0.34	(0.07)	0.19	(0.07)	0.15	(0.10)	0.25	(0.08)	0.13	(0.07)	0.12	(0.10)	11.93	(3.28)	25.30	(3.92)	-13.37	(4.89)
Argentina	0.62	(0.07)	0.37	(0.07)	0.24	(0.10)	0.62	(0.08)	0.56	(0.08)	0.06	(0.11)	6.21	(2.34)	12.94	(2.45)	-6.73	(3.69)
Azerbaijan	0.51	(0.07)	0.59	(0.08)	-0.08	(0.10)	0.29	(0.06)	0.32	(0.06)	-0.03	(0.08)	3.18	(1.63)	15.46	(2.66)	-12.28	(3.25)
Brazil	0.30	(0.09)	-0.13	(0.09)	0.43	(0.13)	0.36	(0.07)	0.31	(0.08)	0.06	(0.10)	8.54	(2.88)	24.96	(3.70)	-16.42	(4.81)
Bulgaria	0.48	(0.09)	0.27	(0.07)	0.21	(0.11)	0.27	(0.06)	-0.03	(0.08)	0.30	(0.09)	11.75	(2.04)	28.19	(3.20)	-16.45	(3.63)
Chile	1.26	(0.09)	1.24	(0.08)	0.02	(0.11)	0.74	(0.06)	0.73	(0.07)	0.00	(0.10)	3.17	(1.94)	5.90	(1.73)	-2.72	(2.84)
Colombia	0.37	(0.04)	-0.16	(0.05)	0.54	(0.07)	0.05	(0.05)	-0.22	(0.07)	0.27	(0.08)	14.99	(2.32)	45.65	(3.38)	-30.66	(4.00)
Croatia	0.25	(0.07)	-0.02	(0.05)	0.28	(0.08)	0.35	(0.06)	-0.18	(0.05)	0.54	(0.07)	1.02	(0.65)	6.12	(1.33)	-5.09	(1.37)
Estonia	0.46	(0.04)	-0.21	(0.07)	0.67	(0.08)	-0.05	(0.05)	-0.52	(0.10)	0.47	(0.11)	21.91	(2.40)	36.53	(3.34)	-14.62	(4.27)
Hong Kong-China	0.61	(0.06)	0.37	(0.05)	0.23	(0.08)	-0.06	(0.08)	0.31	(0.06)	-0.37	(0.10)	4.86	(1.98)	5.44	(1.50)	-0.58	(2.11)
Indonesia	0.21	(0.10)	-0.37	(0.11)	0.57	(0.15)	0.65	(0.10)	-0.09	(0.11)	0.73	(0.16)	17.42	(3.17)	39.08	(4.82)	-21.67	(5.60)
Israel	0.85	(0.07)	0.38	(0.07)	0.47	(0.09)	0.80	(0.05)	0.56	(0.05)	0.24	(0.07)	6.94	(1.75)	21.18	(2.72)	-14.24	(3.01)
Jordan	0.90	(0.06)	0.99	(0.07)	-0.09	(0.10)	0.58	(0.06)	0.92	(0.06)	-0.35	(0.08)	18.63	(2.61)	24.92	(3.76)	-6.29	(4.37)
Kyrgyzstan	0.15	(0.05)	0.15	(0.06)	0.01	(0.08)	0.06	(0.06)	-0.06	(0.05)	0.12	(0.08)	1.87	(1.36)	15.15	(3.02)	-13.28	(3.48)
Latvia	0.48	(0.05)	0.20	(0.05)	0.28	(0.08)	-0.12	(0.05)	-0.40	(0.05)	0.27	(0.07)	2.26	(1.12)	10.25	(2.80)	-7.99	(2.98)
Lithuania	0.32	(0.05)	-0.12	(0.06)	0.43	(0.08)	0.00	(0.08)	-0.26	(0.06)	0.26	(0.10)	10.83	(1.58)	11.87	(2.26)	-1.05	(2.89)
Macao-China	0.61	(0.06)	0.18	(0.08)	0.43	(0.10)	0.44	(0.06)	0.47	(0.07)	-0.03	(0.10)	5.84	(1.79)	21.56	(2.81)	-15.72	(3.30)
Montenegro	0.52	(0.08)	0.19	(0.10)	0.33	(0.13)	0.27	(0.07)	0.34	(0.05)	-0.07	(0.09)	10.29	(4.08)	36.13	(3.30)	-25.84	(5.41)
Romania	0.37	(0.05)	0.19	(0.08)	0.18	(0.09)	0.18	(0.05)	0.05	(0.05)	-0.13	(0.06)	3.13	(1.32)	14.18	(2.96)	-11.05	(3.36)
Russian Federation	0.38	(0.05)	0.11	(0.09)	0.27	(0.09)	0.31	(0.06)	0.20	(0.06)	0.11	(0.09)	6.00	(1.62)	26.90	(3.03)	-20.90	(3.52)
Serbia	0.22	(0.06)	-0.22	(0.07)	0.44	(0.10)	0.31	(0.06)	0.29	(0.07)	0.02	(0.11)	4.10	(1.69)	20.10	(3.59)	-15.99	(4.11)
Slovenia	0.37	(0.04)	-0.42	(0.06)	0.80	(0.07)	-0.26	(0.05)	-0.55	(0.04)	0.29	(0.06)	5.22	(1.85)	24.70	(2.50)	-19.48	(3.21)
Slovenia Chinese Taipei	1.02	(0.04)	0.62	(0.05)	0.40	(0.06)	0.66	(0.05)	0.69	(0.06)	-0.02	(0.07)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Thailand	0.94	(0.07)	0.63	(0.05)	0.31	(0.08)	0.59	(0.05)	0.59	(0.06)	0.00	(0.07)	3.35	(1.24)	18.27	(2.95)	-14.92	(2.96)
Tunisia	0.39	(0.07)	0.04	(0.10)	0.35	(0.12)	0.47	(0.07)	0.19	(0.09)	0.28	(0.12)	11.41	(3.40)	26.75	(3.28)	-15.34	(4.45)
Uruguay																		

[Part 2/2]
Table A4.3 Difference in means test results on matched sample for selected variables

	Percentage of students who spend less than 2 hours or 2 to up to 4 hours in school learning science in regular lessons						Percentage of students who spend 4 up to 6 hours or 6 hours or more in school learning science in regular lessons						
	Resilient		Disadvantaged low achievers (DLA)		Difference		Resilient		Disadvantaged low achievers (DLA)		Difference		
	Percent	S.E.	Percent	S.E.	Diff.	S.E.	Percent	S.E.	Percent	S.E.	Diff.	S.E.	
OECD													
Australia	44.63	(2.11)	53.58	(2.15)	-8.94	(2.83)	45.20	(2.03)	18.92	(1.87)	26.28	(2.58)	
Austria	55.22	(3.53)	62.17	(3.11)	-6.95	(4.52)	33.10	(3.45)	5.38	(1.36)	27.72	(3.86)	
Belgium	63.89	(2.58)	43.63	(2.49)	20.27	(3.35)	30.25	(2.54)	4.61	(1.06)	25.64	(2.70)	
Canada	29.37	(2.15)	41.95	(2.57)	-12.58	(3.23)	60.63	(2.47)	32.87	(2.32)	27.76	(2.96)	
Czech Republic	46.55	(3.79)	66.59	(3.58)	-20.04	(5.17)	44.20	(3.86)	6.17	(1.71)	38.03	(4.07)	
Denmark	66.93	(3.81)	68.04	(4.24)	-1.11	(5.23)	30.71	(3.68)	17.74	(3.00)	12.97	(4.10)	
Finland	63.39	(3.30)	73.29	(2.87)	-9.91	(3.87)	35.35	(3.08)	14.76	(2.37)	20.59	(3.31)	
France	61.34	(3.93)	68.87	(3.19)	-7.53	(5.28)	36.36	(3.74)	4.27	(1.37)	32.09	(4.08)	
Germany	45.15	(3.94)	56.64	(3.54)	-11.50	(5.58)	48.03	(3.59)	10.91	(2.12)	37.12	(4.28)	
Greece	57.95	(3.74)	62.24	(3.68)	-4.29	(5.27)	40.27	(3.47)	13.47	(2.87)	26.80	(4.35)	
Hungary	62.52	(3.61)	78.49	(3.30)	-15.97	(4.96)	27.65	(3.52)	7.05	(1.68)	20.60	(3.76)	
Iceland	79.01	(2.70)	78.44	(2.56)	0.57	(3.70)	20.41	(2.68)	16.09	(2.16)	4.31	(3.45)	
Ireland	72.77	(3.11)	50.89	(3.83)	21.88	(5.08)	18.36	(2.66)	14.77	(2.51)	3.59	(3.73)	
Italy	55.11	(2.51)	68.30	(2.27)	-13.19	(3.18)	37.77	(2.54)	12.97	(1.82)	24.80	(3.13)	
Japan	82.48	(2.56)	87.51	(2.39)	-5.02	(3.46)	14.86	(2.26)	4.73	(0.96)	10.13	(2.44)	
Korea	57.38	(4.00)	66.84	(3.13)	-9.46	(4.76)	40.67	(3.93)	20.21	(2.17)	20.47	(4.32)	
Luxembourg	67.11	(3.90)	66.53	(3.06)	0.58	(5.00)	24.67	(3.47)	9.14	(1.63)	15.54	(3.77)	
Mexico	39.98	(2.40)	49.49	(3.07)	-9.51	(3.69)	39.05	(2.54)	33.78	(3.40)	5.27	(4.35)	
Netherlands	59.18	(3.41)	48.56	(3.81)	10.61	(5.03)	26.77	(2.74)	3.50	(1.23)	23.27	(2.93)	
New Zealand	16.83	(2.67)	37.59	(2.95)	-20.76	(4.07)	78.94	(2.78)	41.45	(3.21)	37.49	(4.46)	
Norway	93.22	(2.00)	87.07	(2.06)	6.15	(2.76)	5.86	(1.72)	3.97	(1.40)	1.89	(2.01)	
Poland	65.83	(3.03)	82.70	(2.25)	-16.87	(3.67)	31.95	(3.14)	10.46	(1.90)	21.49	(3.62)	
Portugal	36.76	(3.35)	76.55	(3.00)	-39.79	(4.62)	48.62	(3.63)	11.98	(2.02)	36.64	(4.24)	
Slovak Republic	59.92	(3.52)	68.71	(3.11)	-8.78	(4.90)	34.09	(3.37)	6.14	(1.50)	27.94	(3.57)	
Spain	54.89	(2.23)	66.02	(2.25)	-11.13	(3.04)	36.72	(2.23)	12.15	(1.68)	24.57	(2.69)	
Sweden	85.28	(2.28)	79.16	(3.58)	6.11	(4.55)	12.43	(2.19)	8.14	(1.96)	4.29	(3.00)	
Switzerland	62.68	(3.33)	63.63	(2.47)	-0.96	(3.75)	28.34	(3.12)	4.66	(0.95)	23.68	(3.36)	
Turkey	34.53	(3.32)	54.14	(3.66)	-19.61	(5.41)	46.74	(3.87)	15.00	(3.02)	31.74	(4.77)	
United Kingdom	25.95	(3.53)	50.81	(2.91)	-24.86	(4.48)	72.12	(3.69)	38.32	(3.05)	33.80	(4.65)	
United States	33.10	(2.99)	55.80	(3.50)	-22.70	(4.57)	60.16	(3.22)	20.83	(2.79)	39.33	(4.02)	
OECD average	56.13	(0.67)	(63.64)	(0.70)	-7.51	(1.07)	37.00	(0.65)	(14.05)	(0.52)	22.95	(0.80)	
Partners													
Argentina	66.26	(4.32)	53.80	(4.34)	12.46	(6.11)	19.41	(3.73)	5.16	(1.46)	14.25	(4.23)	
Azerbaijan	61.03	(3.04)	56.29	(3.80)	4.75	(5.31)	24.80	(2.98)	14.38	(2.87)	10.42	(4.14)	
Brazil	82.00	(2.99)	70.50	(3.57)	11.50	(4.71)	11.94	(2.69)	3.09	(1.29)	8.85	(3.04)	
Bulgaria	61.59	(4.65)	58.54	(4.21)	3.05	(5.80)	28.05	(4.62)	9.18	(2.63)	18.87	(5.01)	
Chile	63.23	(4.06)	59.57	(3.95)	3.66	(5.65)	23.37	(3.90)	5.84	(1.87)	17.52	(4.55)	
Colombia	49.93	(5.17)	56.70	(5.79)	-6.77	(8.09)	46.12	(5.24)	29.13	(6.53)	16.99	(8.71)	
Croatia	71.65	(2.68)	46.19	(3.17)	25.46	(4.36)	10.27	(1.74)	4.53	(1.00)	5.75	(1.91)	
Estonia	53.66	(3.36)	72.31	(2.79)	-18.65	(4.51)	44.61	(3.35)	18.55	(2.95)	26.06	(4.28)	
Hong Kong-China	17.36	(2.14)	43.75	(3.04)	-26.40	(4.11)	60.26	(2.72)	17.03	(2.24)	43.24	(3.57)	
Indonesia	63.92	(3.30)	80.09	(3.17)	-16.17	(4.76)	30.28	(3.50)	12.13	(2.40)	18.15	(4.14)	
Israel	49.15	(3.89)	38.02	(4.22)	11.13	(6.06)	29.41	(3.66)	8.07	(1.75)	21.34	(4.07)	
Jordan	44.66	(4.15)	53.60	(3.14)	-8.93	(5.21)	45.67	(4.24)	18.55	(2.70)	27.12	(5.02)	
Kyrgyzstan	60.08	(3.70)	46.75	(4.19)	13.32	(4.89)	15.78	(2.78)	11.53	(4.74)	4.25	(4.87)	
Latvia	64.89	(4.77)	71.32	(3.21)	-6.43	(5.76)	32.31	(4.42)	11.47	(2.87)	20.83	(4.89)	
Lithuania	67.44	(2.80)	73.43	(3.46)	-5.99	(3.84)	29.65	(2.74)	12.21	(2.57)	17.44	(3.30)	
Macao-China	28.15	(2.58)	64.45	(3.08)	-36.30	(3.71)	60.70	(3.08)	22.59	(2.97)	38.11	(3.90)	
Montenegro	58.71	(3.34)	54.79	(3.53)	3.92	(5.06)	33.90	(3.30)	15.19	(2.24)	18.71	(4.22)	
Romania	63.73	(5.97)	52.42	(4.15)	11.31	(7.18)	25.76	(5.02)	9.61	(2.66)	16.14	(5.32)	
Russian Federation	37.25	(3.14)	58.42	(3.84)	-21.17	(4.83)	58.21	(3.86)	24.83	(2.94)	33.38	(4.80)	
Serbia	60.57	(3.42)	55.55	(3.47)	5.03	(4.96)	31.88	(3.44)	11.23	(1.78)	20.65	(3.96)	
Slovenia	54.16	(4.16)	66.96	(3.70)	-12.80	(5.80)	38.83	(3.64)	7.69	(1.90)	31.14	(4.01)	
Chinese Taipei	62.28	(3.53)	58.17	(2.25)	4.11	(4.31)	32.45	(3.31)	10.48	(1.73)	21.97	(3.78)	
Thailand	50.77	(3.24)	82.10	(2.74)	-31.33	(4.43)	49.06	(3.21)	17.48	(2.81)	31.58	(4.44)	
Tunisia	66.63	(2.86)	65.26	(3.36)	1.37	(4.25)	28.22	(2.60)	7.93	(1.53)	20.29	(2.93)	
Uruguay	65.56	(3.92)	50.61	(3.37)	14.95	(5.14)	21.07	(2.97)	9.02	(1.81)	12.05	(3.45)	



[Part 1/3]
Table A4.4 Difference in means test results on alternative definition for selected variables

	General interest in science						Science self-concept					
	Resilient students		Disadvantaged low achievers (DLA)		Difference		Resilient		Disadvantaged low achievers (DLA)		Difference	
	Mean	S.E.	Mean	S.E.	Diff.	S.E.	Mean	S.E.	Mean	S.E.	Diff.	S.E.
OECD												
Australia	-0.04	(0.03)	-0.69	(0.04)	0.65	(0.05)	0.16	(0.03)	-0.55	(0.03)	0.72	(0.04)
Austria	0.17	(0.04)	-0.27	(0.04)	0.44	(0.06)	0.16	(0.06)	-0.26	(0.06)	0.42	(0.08)
Belgium	0.15	(0.04)	-0.38	(0.05)	0.52	(0.06)	-0.06	(0.04)	-0.45	(0.05)	0.39	(0.06)
Canada	0.22	(0.03)	-0.27	(0.03)	0.49	(0.04)	0.48	(0.04)	-0.30	(0.03)	0.79	(0.06)
Czech Republic	0.06	(0.04)	-0.20	(0.05)	0.26	(0.07)	0.02	(0.04)	-0.16	(0.05)	0.18	(0.07)
Denmark	-0.03	(0.06)	-0.58	(0.06)	0.54	(0.08)	0.04	(0.06)	-0.45	(0.05)	0.49	(0.07)
Finland	-0.09	(0.04)	-0.70	(0.05)	0.61	(0.07)	0.25	(0.04)	-0.41	(0.04)	0.65	(0.05)
France	0.42	(0.06)	-0.23	(0.04)	0.66	(0.08)	-0.05	(0.05)	-0.36	(0.04)	0.31	(0.06)
Germany	0.34	(0.05)	-0.06	(0.05)	0.40	(0.07)	0.38	(0.04)	-0.05	(0.04)	0.43	(0.06)
Greece	0.24	(0.04)	-0.20	(0.04)	0.44	(0.06)	-0.05	(0.04)	-0.20	(0.04)	0.15	(0.06)
Hungary	-0.05	(0.05)	-0.23	(0.04)	0.19	(0.07)	-0.31	(0.05)	-0.20	(0.05)	-0.12	(0.07)
Iceland	0.05	(0.05)	-0.71	(0.06)	0.75	(0.08)	0.24	(0.05)	-0.64	(0.05)	0.89	(0.07)
Ireland	-0.03	(0.05)	-0.74	(0.05)	0.71	(0.07)	-0.01	(0.06)	-0.65	(0.05)	0.64	(0.08)
Italy	0.24	(0.03)	-0.05	(0.03)	0.29	(0.04)	0.16	(0.03)	0.00	(0.03)	0.16	(0.04)
Japan	0.05	(0.04)	-0.64	(0.05)	0.69	(0.06)	-0.72	(0.04)	-1.14	(0.04)	0.42	(0.06)
Korea	-0.06	(0.04)	-0.73	(0.04)	0.67	(0.05)	-0.61	(0.05)	-1.12	(0.04)	0.52	(0.05)
Luxembourg	0.24	(0.06)	-0.14	(0.04)	0.38	(0.07)	0.35	(0.06)	-0.07	(0.04)	0.42	(0.07)
Mexico	0.92	(0.03)	0.73	(0.05)	0.19	(0.06)	0.44	(0.03)	0.49	(0.03)	-0.05	(0.05)
Netherlands	-0.26	(0.05)	-0.65	(0.06)	0.39	(0.08)	-0.25	(0.05)	-0.62	(0.06)	0.38	(0.08)
New Zealand	0.04	(0.05)	-0.42	(0.06)	0.46	(0.07)	0.04	(0.04)	-0.37	(0.04)	0.40	(0.06)
Norway	0.14	(0.05)	-0.57	(0.07)	0.70	(0.08)	0.21	(0.04)	-0.37	(0.04)	0.58	(0.06)
Poland	0.13	(0.03)	-0.10	(0.03)	0.23	(0.04)	0.12	(0.03)	-0.09	(0.04)	0.21	(0.05)
Portugal	0.28	(0.04)	-0.07	(0.04)	0.36	(0.06)	0.38	(0.04)	0.09	(0.05)	0.29	(0.07)
Slovak Republic	-0.01	(0.04)	-0.40	(0.06)	0.39	(0.07)	0.20	(0.04)	-0.07	(0.04)	0.27	(0.05)
Spain	-0.08	(0.03)	-0.59	(0.04)	0.51	(0.05)	0.10	(0.04)	-0.41	(0.03)	0.51	(0.05)
Sweden	-0.02	(0.06)	-0.61	(0.06)	0.59	(0.08)	0.21	(0.05)	-0.52	(0.04)	0.73	(0.06)
Switzerland	0.11	(0.03)	-0.39	(0.04)	0.50	(0.05)	0.19	(0.04)	-0.29	(0.03)	0.47	(0.05)
Turkey	0.39	(0.05)	-0.04	(0.06)	0.43	(0.08)	0.20	(0.06)	0.04	(0.06)	0.17	(0.08)
United Kingdom	0.04	(0.05)	-0.33	(0.04)	0.37	(0.06)	0.12	(0.04)	-0.28	(0.03)	0.40	(0.05)
United States	0.16	(0.05)	-0.11	(0.09)	0.27	(0.10)	0.31	(0.06)	-0.09	(0.07)	0.40	(0.09)
OECD average	0.12	(0.01)	-0.34	(0.01)	0.46	(0.01)	0.08	(0.01)	-0.31	(0.01)	0.39	(0.01)
Partners												
Argentina	0.31	(0.05)	0.24	(0.06)	0.06	(0.08)	0.18	(0.05)	0.23	(0.07)	-0.05	(0.07)
Azerbaijan	0.57	(0.05)	0.34	(0.07)	0.23	(0.08)	0.63	(0.06)	0.57	(0.06)	0.06	(0.07)
Brazil	0.50	(0.05)	0.53	(0.06)	-0.03	(0.08)	0.28	(0.04)	0.37	(0.04)	-0.09	(0.06)
Bulgaria	0.21	(0.06)	0.01	(0.07)	0.20	(0.09)	0.34	(0.05)	0.29	(0.05)	0.06	(0.07)
Chile	0.44	(0.06)	0.37	(0.05)	0.07	(0.07)	0.18	(0.05)	-0.02	(0.04)	0.20	(0.06)
Colombia	1.25	(0.05)	1.27	(0.06)	-0.02	(0.09)	0.68	(0.06)	0.71	(0.06)	-0.03	(0.07)
Croatia	0.31	(0.03)	-0.07	(0.04)	0.38	(0.06)	0.02	(0.04)	-0.20	(0.05)	0.22	(0.07)
Estonia	0.19	(0.05)	-0.03	(0.04)	0.23	(0.05)	0.20	(0.05)	-0.18	(0.03)	0.38	(0.06)
Hong Kong-China	0.37	(0.03)	-0.19	(0.06)	0.56	(0.06)	-0.18	(0.05)	-0.44	(0.07)	0.26	(0.09)
Indonesia	0.57	(0.04)	0.37	(0.03)	0.19	(0.05)	-0.00	(0.05)	0.30	(0.05)	-0.30	(0.07)
Israel	0.10	(0.08)	-0.36	(0.08)	0.46	(0.11)	0.47	(0.07)	0.04	(0.06)	0.43	(0.10)
Jordan	0.78	(0.05)	0.38	(0.06)	0.40	(0.07)	0.72	(0.04)	0.52	(0.04)	0.20	(0.06)
Kyrgyzstan	0.89	(0.04)	0.95	(0.05)	-0.05	(0.06)	0.63	(0.04)	0.87	(0.04)	-0.24	(0.06)
Latvia	0.13	(0.04)	0.07	(0.05)	0.06	(0.06)	0.04	(0.05)	-0.08	(0.05)	0.12	(0.06)
Lithuania	0.40	(0.04)	0.18	(0.03)	0.22	(0.06)	-0.25	(0.04)	-0.39	(0.03)	0.14	(0.04)
Macao-China	0.23	(0.03)	-0.15	(0.05)	0.38	(0.06)	-0.08	(0.07)	-0.21	(0.04)	0.13	(0.08)
Montenegro	0.53	(0.05)	0.21	(0.06)	0.32	(0.08)	0.38	(0.05)	0.49	(0.05)	-0.11	(0.07)
Romania	0.42	(0.05)	0.22	(0.06)	0.19	(0.08)	0.24	(0.06)	0.37	(0.04)	-0.13	(0.08)
Russian Federation	0.33	(0.04)	0.19	(0.05)	0.14	(0.06)	0.12	(0.04)	0.05	(0.04)	0.07	(0.04)
Serbia	0.34	(0.04)	0.15	(0.05)	0.19	(0.06)	0.25	(0.04)	0.24	(0.04)	0.01	(0.05)
Slovenia	0.17	(0.04)	-0.23	(0.04)	0.40	(0.06)	0.23	(0.04)	0.22	(0.04)	0.02	(0.06)
Chinese Taipei	0.28	(0.03)	-0.36	(0.04)	0.64	(0.04)	-0.39	(0.03)	-0.59	(0.04)	0.20	(0.05)
Thailand	0.93	(0.04)	0.63	(0.04)	0.31	(0.05)	0.63	(0.04)	0.70	(0.03)	-0.06	(0.05)
Tunisia	0.86	(0.05)	0.66	(0.05)	0.21	(0.06)	0.59	(0.04)	0.58	(0.04)	0.01	(0.06)
Uruguay	0.32	(0.05)	0.24	(0.07)	0.08	(0.08)	0.38	(0.05)	0.22	(0.05)	0.16	(0.07)

[Part 2/3]
Table A4.4 Difference in means test results on alternative definition for selected variables

	Percentage of students who spend no time in school in regular lessons in science						Percentage of students who spend less than 2 hours or 2 to up to 4 hours in school learning science in regular lessons						
	Resilient		Disadvantaged low achievers (DLA)		Difference		Resilient		Disadvantaged low achievers (DLA)		Difference		
	Percent	S.E.	Percent	S.E.	Diff.	S.E.	Percent	S.E.	Percent	S.E.	Diff.	S.E.	
OECD													
Australia	12.15	(1.22)	24.08	(1.39)	-11.93	(1.67)	46.08	(1.85)	51.99	(1.29)	-5.91	(2.06)	
Austria	12.35	(1.67)	28.06	(1.94)	-15.72	(2.47)	57.18	(2.49)	59.80	(2.33)	-2.62	(3.09)	
Belgium	7.81	(1.41)	37.45	(2.34)	-29.64	(2.71)	65.12	(2.24)	43.51	(2.24)	21.62	(3.38)	
Canada	7.76	(0.91)	18.51	(1.21)	-10.75	(1.27)	30.01	(1.57)	42.27	(1.39)	-12.26	(1.85)	
Czech Republic	9.47	(2.00)	15.85	(2.05)	-6.38	(2.72)	54.71	(3.28)	63.85	(2.83)	-9.14	(4.30)	
Denmark	1.81	(0.74)	7.93	(1.52)	-6.12	(1.56)	67.79	(2.74)	69.13	(2.18)	-1.35	(3.27)	
Finland	1.51	(0.66)	7.80	(1.25)	-6.29	(1.46)	66.56	(2.72)	74.74	(2.14)	-8.17	(2.92)	
France	2.91	(1.04)	18.94	(1.82)	-16.03	(1.78)	67.48	(2.78)	69.90	(1.99)	-2.42	(3.28)	
Germany	6.29	(1.41)	20.18	(2.32)	-13.89	(2.58)	51.22	(2.61)	56.95	(2.13)	-5.72	(3.62)	
Greece	3.95	(1.10)	20.96	(1.50)	-17.01	(1.87)	59.98	(2.59)	62.33	(2.05)	-2.35	(3.27)	
Hungary	7.25	(1.84)	10.07	(1.36)	-2.82	(2.21)	67.92	(2.87)	80.07	(1.99)	-12.15	(3.24)	
Iceland	1.20	(0.58)	7.09	(1.03)	-5.89	(1.17)	79.80	(2.07)	76.15	(1.70)	3.65	(2.76)	
Ireland	11.26	(1.63)	29.63	(2.74)	-18.38	(2.95)	71.79	(2.09)	54.47	(2.36)	17.33	(3.27)	
Italy	6.56	(1.18)	15.16	(1.10)	-8.60	(1.50)	58.73	(2.11)	68.52	(1.76)	-9.79	(2.59)	
Japan	3.08	(1.24)	5.88	(1.68)	-2.81	(1.66)	84.09	(2.06)	88.24	(2.04)	-4.15	(2.50)	
Korea	1.78	(0.87)	7.26	(2.18)	-5.48	(1.56)	61.51	(3.19)	69.62	(2.52)	-8.11	(3.75)	
Luxembourg	7.17	(1.27)	18.61	(1.49)	-11.45	(1.95)	66.54	(2.85)	67.86	(1.67)	-1.33	(3.47)	
Mexico	17.55	(1.40)	9.57	(1.31)	7.98	(1.99)	42.56	(2.12)	50.46	(2.18)	-7.90	(2.90)	
Netherlands	11.38	(1.57)	38.45	(2.41)	-27.07	(2.72)	59.31	(2.64)	49.39	(2.84)	9.92	(3.86)	
New Zealand	4.69	(1.17)	18.10	(2.51)	-13.41	(2.69)	18.74	(1.72)	39.68	(2.08)	-20.94	(2.56)	
Norway	1.36	(0.54)	5.25	(1.06)	-3.89	(1.14)	92.58	(1.28)	83.09	(1.88)	9.49	(2.25)	
Poland	1.11	(0.47)	4.62	(0.81)	-3.51	(0.98)	69.54	(2.35)	83.42	(1.47)	-13.87	(2.63)	
Portugal	13.34	(2.10)	9.18	(1.22)	4.16	(2.58)	44.34	(3.05)	74.55	(2.05)	-30.21	(4.03)	
Slovak Republic	7.78	(1.39)	22.63	(1.96)	-14.85	(2.32)	63.70	(3.07)	63.68	(2.17)	0.02	(3.55)	
Spain	8.69	(1.34)	12.73	(1.19)	-4.04	(1.90)	60.29	(1.71)	68.36	(1.88)	-8.07	(2.54)	
Sweden	1.03	(0.45)	8.02	(1.33)	-7.00	(1.42)	87.30	(1.85)	79.02	(2.00)	8.28	(2.98)	
Switzerland	10.04	(1.24)	25.69	(1.22)	-15.65	(1.60)	66.25	(2.06)	65.08	(1.38)	1.17	(2.54)	
Turkey	22.98	(2.53)	30.38	(2.49)	-7.39	(3.82)	40.54	(2.98)	53.93	(2.61)	-13.38	(4.36)	
United Kingdom	1.09	(0.45)	7.45	(1.00)	-6.36	(1.03)	29.90	(2.62)	51.79	(1.98)	-21.89	(2.86)	
United States	7.43	(1.25)	14.46	(1.60)	-7.04	(1.99)	36.80	(2.40)	57.15	(2.27)	-20.35	(3.44)	
OECD average	7.01	(0.25)	16.62	(0.36)	-9.61	(0.43)	59.14	(0.45)	63.82	(0.47)	-4.68	(0.69)	
Partners													
Argentina	13.21	(2.14)	21.76	(2.40)	-8.55	(3.13)	68.90	(3.10)	59.07	(2.76)	9.83	(4.14)	
Azerbaijan	6.96	(1.68)	13.82	(2.10)	-6.86	(2.81)	61.68	(2.52)	56.58	(3.04)	5.10	(3.56)	
Brazil	6.15	(1.12)	15.88	(1.81)	-9.73	(2.30)	81.42	(1.98)	70.43	(2.11)	11.00	(2.98)	
Bulgaria	11.11	(1.87)	25.82	(2.29)	-14.71	(2.86)	60.10	(2.70)	53.36	(2.91)	6.74	(3.66)	
Chile	12.75	(1.60)	25.36	(1.92)	-12.61	(2.38)	66.62	(2.14)	63.27	(2.15)	3.35	(2.92)	
Colombia	3.86	(1.38)	5.35	(1.00)	-1.49	(1.56)	50.51	(3.99)	56.93	(3.47)	-6.42	(4.89)	
Croatia	18.14	(2.07)	45.00	(2.29)	-26.86	(2.98)	68.63	(2.05)	47.42	(2.08)	21.21	(3.02)	
Estonia	1.51	(0.54)	5.69	(1.20)	-4.17	(1.29)	59.33	(2.81)	74.31	(1.68)	-14.97	(3.24)	
Hong Kong-China	26.41	(2.28)	38.64	(2.53)	-12.23	(3.11)	21.53	(2.05)	42.75	(2.18)	-21.22	(2.81)	
Indonesia	5.04	(1.59)	4.53	(0.95)	0.50	(1.41)	67.26	(2.63)	80.40	(2.08)	-13.14	(3.39)	
Israel	19.15	(2.25)	34.64	(2.80)	-15.49	(3.39)	50.98	(3.05)	43.72	(2.51)	7.26	(3.61)	
Jordan	7.86	(1.40)	19.16	(1.86)	-11.30	(2.17)	48.21	(2.87)	51.79	(2.22)	-3.58	(3.43)	
Kyrgyzstan	21.57	(2.02)	27.16	(2.53)	-5.59	(3.15)	56.89	(2.78)	45.57	(2.60)	11.32	(3.02)	
Latvia	3.68	(1.18)	13.42	(2.17)	-9.74	(2.43)	67.26	(3.95)	75.36	(2.59)	-8.10	(5.00)	
Lithuania	2.48	(0.93)	9.44	(1.54)	-6.96	(1.75)	69.71	(2.12)	76.76	(1.52)	-7.05	(2.33)	
Macao-China	10.45	(1.42)	12.21	(1.64)	-1.76	(2.50)	33.12	(2.10)	61.08	(2.16)	-27.95	(2.83)	
Montenegro	7.84	(1.54)	19.97	(1.79)	-12.13	(2.66)	60.96	(2.46)	57.26	(2.45)	3.70	(3.77)	
Romania	13.46	(3.16)	30.68	(2.49)	-17.22	(4.34)	63.68	(4.81)	57.50	(2.54)	6.18	(5.81)	
Russian Federation	4.47	(1.04)	12.93	(1.74)	-8.46	(1.90)	39.06	(2.58)	56.56	(2.64)	-17.50	(3.62)	
Serbia	7.52	(1.29)	23.61	(1.84)	-16.09	(2.36)	62.60	(2.36)	59.09	(1.94)	3.51	(3.10)	
Slovenia	6.65	(1.64)	17.08	(1.47)	-10.42	(2.18)	59.32	(2.94)	68.51	(1.82)	-9.18	(3.37)	
Chinese Taipei	6.45	(1.57)	24.70	(1.77)	-18.24	(2.34)	62.34	(2.17)	57.63	(1.64)	4.71	(2.48)	
Thailand	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	59.32	(2.43)	82.94	(2.10)	-23.63	(3.05)	
Tunisia	5.18	(1.33)	17.73	(2.15)	-12.55	(2.67)	69.48	(2.17)	65.08	(2.44)	4.41	(3.23)	
Uruguay	13.27	(2.74)	25.77	(2.46)	-12.49	(3.12)	65.76	(2.95)	51.06	(2.43)	14.71	(3.62)	



[Part 3/3]
Table A4.4 Difference in means test results on alternative definition for selected variables

	Percentage of students who spend 4 up to 6 hours or 6 hours or more in school learning science in regular lessons					
	Resilient		Disadvantaged low achievers (DLA)		Difference	
	Percent	S.E.	Percent	S.E.	Diff.	S.E.
OECD						
Australia	41.18	(1.75)	19.77	(1.12)	21.41	(1.87)
Austria	26.76	(2.45)	5.25	(0.92)	21.51	(2.50)
Belgium	25.62	(2.07)	7.32	(1.02)	18.30	(2.11)
Canada	58.34	(1.68)	33.75	(1.51)	24.58	(2.17)
Czech Republic	33.36	(2.67)	6.53	(1.03)	26.83	(2.81)
Denmark	28.94	(2.61)	18.47	(1.64)	10.47	(2.85)
Finland	31.29	(2.54)	14.85	(1.75)	16.44	(2.62)
France	28.60	(2.69)	4.49	(0.75)	24.11	(2.68)
Germany	40.00	(2.63)	10.66	(1.27)	29.34	(3.18)
Greece	35.48	(2.51)	12.11	(1.74)	23.37	(3.22)
Hungary	22.52	(2.65)	6.03	(1.09)	16.49	(2.72)
Iceland	18.71	(1.90)	14.87	(1.38)	3.83	(2.45)
Ireland	15.85	(1.81)	12.96	(1.59)	2.89	(2.53)
Italy	33.27	(2.11)	12.14	(1.48)	21.13	(2.48)
Japan	12.46	(1.67)	4.54	(0.78)	7.92	(1.79)
Korea	36.22	(3.10)	19.20	(1.70)	17.03	(3.41)
Luxembourg	22.72	(2.68)	8.19	(0.98)	14.53	(2.75)
Mexico	37.69	(2.37)	31.74	(2.16)	5.95	(3.23)
Netherlands	22.85	(1.89)	4.11	(0.89)	18.74	(2.02)
New Zealand	76.16	(1.94)	38.76	(2.34)	37.39	(3.03)
Norway	5.93	(1.25)	4.94	(1.02)	0.99	(1.49)
Poland	28.01	(2.39)	10.21	(1.18)	17.80	(2.59)
Portugal	40.53	(2.57)	12.11	(1.37)	28.42	(3.02)
Slovak Republic	27.41	(2.44)	6.62	(1.18)	20.80	(2.54)
Spain	29.63	(1.63)	11.33	(1.10)	18.30	(1.94)
Sweden	10.65	(1.79)	9.30	(1.12)	1.35	(2.28)
Switzerland	22.09	(1.88)	5.99	(0.80)	16.10	(2.00)
Turkey	35.74	(2.55)	12.43	(1.80)	23.32	(3.11)
United Kingdom	68.12	(2.70)	37.73	(1.94)	30.39	(2.96)
United States	53.16	(2.76)	22.23	(2.11)	30.93	(3.45)
OECD average	32.21	(0.46)	13.81	(0.32)	18.39	(0.53)
Partners						
Argentina	14.84	(2.07)	5.97	(1.37)	8.87	(2.33)
Azerbaijan	21.74	(2.42)	14.32	(1.81)	7.41	(2.97)
Brazil	9.38	(1.72)	3.90	(1.08)	5.49	(2.10)
Bulgaria	25.43	(2.92)	10.40	(1.75)	15.03	(3.04)
Chile	18.48	(1.95)	6.00	(1.02)	12.48	(2.26)
Colombia	44.22	(3.70)	29.94	(3.64)	14.28	(4.14)
Croatia	10.02	(1.26)	4.57	(0.87)	5.45	(1.39)
Estonia	38.06	(2.75)	17.74	(1.71)	20.33	(3.00)
Hong Kong-China	51.68	(2.45)	16.22	(1.78)	35.46	(2.97)
Indonesia	26.71	(2.63)	12.93	(1.66)	13.78	(3.21)
Israel	24.43	(2.31)	8.78	(1.08)	15.65	(2.51)
Jordan	40.89	(2.94)	20.27	(2.04)	20.62	(3.37)
Kyrgyzstan	15.22	(2.19)	10.45	(2.95)	4.77	(2.91)
Latvia	28.50	(3.40)	9.58	(1.89)	18.92	(3.95)
Lithuania	27.23	(1.94)	11.31	(1.27)	15.92	(2.31)
Macao-China	56.10	(2.30)	25.61	(2.14)	30.49	(2.89)
Montenegro	29.28	(2.60)	15.38	(1.59)	13.89	(3.32)
Romania	22.26	(2.54)	9.68	(1.28)	12.58	(2.72)
Russian Federation	54.72	(2.79)	27.20	(2.49)	27.52	(3.51)
Serbia	28.28	(2.46)	12.04	(1.38)	16.24	(2.81)
Slovenia	31.80	(2.63)	7.43	(1.21)	24.36	(2.50)
Chinese Taipei	30.94	(1.89)	11.23	(1.43)	19.71	(2.12)
Thailand	40.48	(2.42)	16.73	(2.11)	23.75	(3.06)
Tunisia	23.23	(1.75)	9.21	(1.40)	14.03	(2.21)
Uruguay	17.66	(2.11)	10.39	(1.38)	7.27	(2.49)

[Part 1/2]
Table A4.5 Country means of student approaches to learning

	General interest in science		Instrumental motivation to learn science		Participation in science related activities		Self-concept		Self-efficacy	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
OECD										
Australia	-0.22	(0.01)	0.11	(0.02)	-0.29	(0.01)	-0.03	(0.01)	0.12	(0.01)
Austria	0.05	(0.02)	-0.40	(0.03)	0.01	(0.02)	0.09	(0.02)	-0.11	(0.02)
Belgium	0.03	(0.02)	-0.22	(0.02)	0.01	(0.01)	-0.14	(0.02)	-0.07	(0.02)
Canada	0.11	(0.01)	0.32	(0.02)	-0.15	(0.01)	0.27	(0.02)	0.21	(0.01)
Czech Republic	-0.03	(0.02)	-0.24	(0.02)	0.05	(0.02)	-0.03	(0.02)	0.14	(0.02)
Denmark	-0.17	(0.02)	0.04	(0.01)	-0.15	(0.02)	-0.08	(0.02)	-0.08	(0.03)
Finland	-0.24	(0.02)	-0.21	(0.02)	-0.16	(0.01)	0.07	(0.02)	0.03	(0.02)
France	0.20	(0.02)	-0.07	(0.02)	-0.01	(0.02)	-0.11	(0.02)	-0.06	(0.02)
Germany	0.19	(0.02)	-0.07	(0.02)	0.12	(0.02)	0.26	(0.02)	0.07	(0.02)
Greece	0.19	(0.02)	0.08	(0.02)	0.27	(0.02)	0.04	(0.02)	-0.13	(0.02)
Hungary	-0.07	(0.01)	-0.07	(0.02)	0.32	(0.02)	-0.21	(0.02)	-0.06	(0.01)
Iceland	-0.14	(0.02)	0.09	(0.02)	-0.21	(0.02)	0.10	(0.02)	0.14	(0.02)
Ireland	-0.14	(0.02)	0.15	(0.02)	-0.43	(0.02)	-0.13	(0.02)	0.01	(0.02)
Italy	0.18	(0.01)	0.12	(0.01)	0.26	(0.01)	0.16	(0.01)	-0.20	(0.01)
Japan	-0.13	(0.02)	-0.43	(0.03)	-0.62	(0.02)	-0.87	(0.02)	-0.53	(0.02)
Korea	-0.24	(0.02)	-0.26	(0.02)	-0.19	(0.02)	-0.71	(0.02)	-0.22	(0.02)
Luxembourg	0.14	(0.02)	-0.14	(0.02)	0.11	(0.01)	0.24	(0.02)	-0.13	(0.02)
Mexico	0.76	(0.01)	0.54	(0.01)	0.73	(0.02)	0.53	(0.01)	0.09	(0.02)
Netherlands	-0.35	(0.02)	-0.22	(0.02)	-0.26	(0.02)	-0.33	(0.02)	0.03	(0.02)
New Zealand	-0.09	(0.02)	0.18	(0.02)	-0.26	(0.02)	-0.05	(0.02)	-0.01	(0.02)
Norway	-0.03	(0.03)	-0.16	(0.02)	-0.11	(0.02)	0.05	(0.02)	0.12	(0.02)
Poland	0.06	(0.02)	0.16	(0.02)	0.64	(0.01)	0.08	(0.02)	0.26	(0.02)
Portugal	0.16	(0.02)	0.47	(0.02)	0.45	(0.02)	0.31	(0.02)	0.20	(0.02)
Slovak Republic	-0.11	(0.02)	-0.19	(0.02)	0.23	(0.02)	0.15	(0.02)	0.11	(0.02)
Spain	-0.18	(0.01)	0.06	(0.02)	-0.14	(0.02)	-0.01	(0.01)	-0.07	(0.02)
Sweden	-0.13	(0.03)	-0.05	(0.02)	-0.41	(0.02)	0.01	(0.02)	-0.07	(0.03)
Switzerland	0.00	(0.02)	-0.25	(0.02)	0.03	(0.02)	0.10	(0.01)	-0.19	(0.02)
Turkey	0.22	(0.02)	0.34	(0.02)	0.57	(0.02)	0.15	(0.03)	0.02	(0.03)
United Kingdom	-0.01	(0.02)	0.18	(0.02)	-0.35	(0.02)	0.02	(0.01)	0.19	(0.02)
United States	0.03	(0.02)	0.29	(0.02)	-0.09	(0.02)	0.21	(0.02)	0.22	(0.02)
OECD average	0.00	(0.00)	0.01	(0.00)	-0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Partners										
Argentina	0.22	(0.02)	0.44	(0.02)	0.43	(0.03)	0.27	(0.03)	-0.05	(0.02)
Azerbaijan	0.60	(0.03)	0.55	(0.02)	1.22	(0.02)	0.65	(0.03)	-0.46	(0.03)
Brazil	0.51	(0.02)	0.48	(0.01)	0.53	(0.02)	0.36	(0.02)	-0.05	(0.02)
Bulgaria	0.18	(0.02)	0.36	(0.02)	0.78	(0.02)	0.37	(0.02)	-0.04	(0.03)
Chile	0.36	(0.02)	0.52	(0.03)	0.49	(0.02)	0.18	(0.02)	0.06	(0.02)
Colombia	1.15	(0.02)	0.65	(0.02)	1.00	(0.02)	0.75	(0.02)	0.09	(0.02)
Croatia	0.17	(0.02)	0.05	(0.03)	0.36	(0.01)	-0.03	(0.02)	0.14	(0.02)
Estonia	0.19	(0.01)	0.06	(0.01)	0.40	(0.01)	0.11	(0.02)	0.03	(0.02)
Hong Kong-China	0.19	(0.01)	0.16	(0.02)	0.26	(0.02)	-0.25	(0.02)	0.06	(0.02)
Indonesia	0.56	(0.02)	0.76	(0.02)	0.57	(0.02)	0.16	(0.03)	-0.70	(0.02)
Israel	-0.21	(0.03)	-0.37	(0.03)	0.13	(0.02)	0.27	(0.02)	0.02	(0.03)
Jordan	0.67	(0.02)	0.80	(0.02)	0.97	(0.02)	0.74	(0.02)	0.21	(0.02)
Kyrgyzstan	0.91	(0.01)	0.84	(0.02)	1.33	(0.02)	0.69	(0.02)	-0.15	(0.02)
Latvia	0.16	(0.02)	0.01	(0.02)	0.25	(0.02)	0.03	(0.02)	-0.02	(0.02)
Lithuania	0.35	(0.01)	0.37	(0.01)	0.26	(0.02)	-0.24	(0.02)	0.01	(0.02)
Macao-China	0.10	(0.01)	0.39	(0.02)	0.27	(0.01)	-0.11	(0.02)	-0.11	(0.02)
Montenegro	0.42	(0.02)	0.45	(0.02)	0.75	(0.01)	0.49	(0.01)	-0.02	(0.02)
Romania	0.38	(0.02)	0.40	(0.02)	0.64	(0.02)	0.34	(0.02)	-0.35	(0.02)
Russian Federation	0.28	(0.02)	0.21	(0.02)	0.56	(0.03)	0.16	(0.02)	-0.01	(0.03)
Serbia	0.26	(0.02)	0.11	(0.02)	0.54	(0.02)	0.24	(0.02)	0.05	(0.02)
Slovenia	0.03	(0.02)	0.06	(0.02)	0.43	(0.01)	0.22	(0.01)	-0.10	(0.01)
Chinese Taipei	0.09	(0.02)	0.27	(0.01)	0.40	(0.01)	-0.40	(0.02)	0.18	(0.02)
Thailand	0.79	(0.02)	0.72	(0.01)	1.10	(0.01)	0.69	(0.01)	0.06	(0.02)
Tunisia	0.77	(0.02)	0.84	(0.02)	1.11	(0.01)	0.64	(0.02)	-0.11	(0.02)
Uruguay	0.25	(0.02)	0.19	(0.02)	0.15	(0.02)	0.35	(0.02)	0.13	(0.02)



[Part 2/2]
Table A4.5 Country means of student approaches to learning

	Information in science related careers		School preparation for science careers		Share of students who took general science compulsory courses this or last year		The average number of compulsory science courses in general science, physics, biology and chemistry*		Average number of science regular hours	
	Mean	S.E.	Mean	S.E.	% of students	S.E.	Mean	S.E.	Mean	S.E.
OECD										
Australia	0.17	(0.01)	0.19	(0.02)	84.8	(0.7)	3.13	(0.06)	3.18	(0.03)
Austria	-0.10	(0.02)	-0.24	(0.03)	a	a	3.36	(0.06)	2.41	(0.06)
Belgium	-0.23	(0.01)	-0.12	(0.02)	61.4	(1.2)	3.53	(0.06)	2.56	(0.04)
Canada	0.28	(0.01)	0.33	(0.01)	91.1	(0.3)	3.29	(0.03)	3.79	(0.03)
Czech Republic	-0.10	(0.02)	-0.18	(0.03)	62.2	(0.9)	5.99	(0.08)	2.79	(0.06)
Denmark	-0.10	(0.02)	-0.04	(0.02)	16.4	(0.7)	5.19	(0.04)	3.19	(0.04)
Finland	0.13	(0.01)	0.17	(0.01)	88.0	(0.8)	7.01	(0.05)	3.09	(0.04)
France	0.00	(0.02)	0.07	(0.03)	a	a	5.32	(0.03)	2.78	(0.05)
Germany	0.02	(0.02)	0.11	(0.02)	71.8	(1.0)	5.84	(0.05)	2.97	(0.05)
Greece	0.33	(0.02)	-0.13	(0.02)	a	a	4.00	(0.04)	3.10	(0.05)
Hungary	-0.03	(0.01)	0.04	(0.02)	a	a	4.71	(0.05)	2.47	(0.04)
Iceland	-0.06	(0.01)	0.05	(0.02)	91.8	(0.4)	5.96	(0.04)	2.95	(0.02)
Ireland	0.00	(0.02)	0.19	(0.02)	64.7	(2.4)	0.83	(0.03)	2.52	(0.04)
Italy	0.07	(0.01)	-0.09	(0.02)	73.5	(1.1)	3.74	(0.06)	2.81	(0.05)
Japan	-0.39	(0.02)	-0.52	(0.02)	100.0	v	3.33	(0.05)	2.69	(0.05)
Korea	-0.33	(0.02)	-0.27	(0.02)	96.1	(0.4)	1.82	(0.01)	3.54	(0.06)
Luxembourg	-0.10	(0.01)	-0.11	(0.02)	a	a	3.76	(0.02)	2.29	(0.02)
Mexico	-0.44	(0.02)	0.48	(0.02)	38.7	(0.7)	2.59	(0.04)	2.96	(0.03)
Netherlands	-0.35	(0.02)	-0.24	(0.01)	72.7	(0.9)	4.59	(0.07)	2.12	(0.04)
New Zealand	0.14	(0.02)	0.21	(0.02)	93.3	(0.5)	3.48	(0.07)	3.97	(0.04)
Norway	-0.11	(0.02)	-0.31	(0.02)	100.0	v	2.00	v	2.63	(0.03)
Poland	0.31	(0.02)	0.03	(0.02)	a	a	6.00	v	2.68	(0.04)
Portugal	0.40	(0.02)	0.22	(0.01)	95.5	(0.5)	3.93	(0.05)	3.02	(0.04)
Slovak Republic	-0.05	(0.02)	-0.14	(0.03)	a	a	4.88	(0.05)	2.36	(0.07)
Spain	0.01	(0.01)	0.07	(0.01)	88.2	(0.5)	5.14	(0.04)	3.00	(0.04)
Sweden	-0.13	(0.02)	-0.07	(0.02)	58.9	(1.2)	4.64	(0.08)	2.80	(0.03)
Switzerland	0.04	(0.01)	0.02	(0.02)	83.1	(0.8)	4.66	(0.06)	2.32	(0.04)
Turkey	0.27	(0.03)	-0.14	(0.03)	75.5	(0.9)	4.08	(0.05)	2.68	(0.08)
United Kingdom	0.00	(0.02)	0.21	(0.02)	71.2	(0.8)	3.17	(0.04)	4.14	(0.03)
United States	0.35	(0.02)	0.25	(0.02)	80.9	(0.9)	2.98	(0.04)	3.38	(0.05)
OECD average	0.00	(0.00)	0.00	(0.00)	76.52	(0.15)	4.10	(0.01)	2.91	(0.01)
Partners										
Argentina	-0.49	(0.03)	0.12	(0.02)	21.3	(1.1)	1.28	(0.06)	2.21	(0.06)
Azerbaijan	0.36	(0.02)	0.65	(0.02)	a	a	3.58	(0.07)	2.73	(0.05)
Brazil	0.33	(0.02)	0.16	(0.02)	11.6	(0.7)	0.70	(0.04)	2.18	(0.03)
Bulgaria	0.25	(0.02)	0.40	(0.02)	a	a	4.70	(0.05)	2.52	(0.07)
Chile	0.26	(0.02)	0.22	(0.03)	59.2	(1.0)	4.69	(0.10)	2.26	(0.05)
Colombia	-0.02	(0.03)	0.51	(0.03)	17.4	(1.0)	1.00	(0.05)	3.41	(0.10)
Croatia	0.02	(0.01)	0.18	(0.02)	a	a	4.35	(0.06)	1.99	(0.04)
Estonia	-0.01	(0.02)	0.28	(0.02)	50.4	(0.9)	5.18	(0.06)	3.15	(0.04)
Hong Kong-China	0.23	(0.01)	-0.13	(0.02)	59.2	(1.6)	3.64	(0.07)	2.88	(0.05)
Indonesia	0.34	(0.03)	0.33	(0.03)	90.4	(0.6)	5.38	(0.06)	3.11	(0.07)
Israel	0.20	(0.03)	-0.08	(0.03)	70.0	(1.0)	3.68	(0.07)	2.35	(0.05)
Jordan	0.44	(0.02)	0.50	(0.02)	56.1	(1.8)	4.84	(0.09)	3.09	(0.05)
Kyrgyzstan	0.30	(0.02)	0.64	(0.02)	68.3	(1.0)	4.57	(0.07)	2.00	(0.06)
Latvia	0.05	(0.02)	0.22	(0.01)	78.4	(0.8)	6.60	(0.05)	2.78	(0.05)
Lithuania	0.23	(0.01)	0.43	(0.02)	a	a	4.71	(0.04)	2.65	(0.04)
Macao-China	-0.12	(0.01)	-0.17	(0.01)	43.2	(0.8)	3.23	(0.04)	3.51	(0.03)
Montenegro	-0.03	(0.01)	0.34	(0.02)	82.5	(0.6)	6.07	(0.03)	2.71	(0.03)
Romania	0.06	(0.02)	0.40	(0.03)	39.6	(1.1)	3.09	(0.11)	2.18	(0.06)
Russian Federation	0.39	(0.02)	0.30	(0.02)	3.4	(0.9)	5.96	(0.02)	3.49	(0.07)
Serbia	0.13	(0.01)	0.15	(0.02)	a	a	4.83	(0.04)	2.74	(0.05)
Slovenia	0.03	(0.01)	0.07	(0.01)	66.6	(0.8)	6.23	(0.02)	2.71	(0.03)
Chinese Taipei	0.06	(0.01)	0.26	(0.02)	43.4	(1.0)	4.26	(0.07)	2.81	(0.05)
Thailand	0.26	(0.02)	0.63	(0.01)	91.4	(0.5)	4.42	(0.07)	3.66	(0.03)
Tunisia	0.41	(0.02)	0.55	(0.02)	72.5	(0.9)	3.69	(0.05)	2.52	(0.04)
Uruguay	-0.23	(0.02)	0.09	(0.02)	46.2	(0.9)	3.59	(0.07)	2.33	(0.04)

Note: * The number of additional courses was calculated treating missing values as zeroes.

a - The category does not apply in the country concerned. Data are therefore missing.

v - There is no variation in this indicator so the standard errors were not calculated.

Table A4.6 School policies, descriptive statistics

	Share of students in private schools*		Share of students in schools which compete for students with other schools		Share of students in schools who select students based on academic record		Index of science promotion activities		Index of school's educational resources and student performance in science	
	% of students	S.E.	% of students	S.E.	% of students	S.E.	Mean	S.E.	Mean	S.E.
OECD										
Australia	w	w	93.6	(1.1)	9.4	(1.8)	0.41	(0.04)	0.41	(0.05)
Austria	9.3	(2.2)	64.4	(3.5)	65.4	(2.1)	-0.38	(0.07)	0.36	(0.08)
Belgium	w	w	90.7	(2.0)	25.7	(2.6)	-0.22	(0.05)	-0.04	(0.06)
Canada	7.2	(0.6)	76.8	(2.3)	10.6	(1.2)	0.41	(0.04)	0.09	(0.05)
Czech Republic	6.5	(2.7)	85.9	(2.5)	42.2	(3.2)	0.46	(0.06)	-0.08	(0.06)
Denmark	20.0	(2.7)	77.5	(3.3)	4.0	(1.5)	-0.82	(0.07)	-0.09	(0.06)
Finland	3.0	(1.2)	56.0	(3.7)	4.3	(1.9)	-0.60	(0.06)	-0.23	(0.06)
France	w	w	w	w	w	w	w	w	w	w
Germany	5.6	(1.7)	82.8	(2.6)	38.7	(3.8)	-0.10	(0.05)	0.11	(0.07)
Greece	5.2	(1.2)	59.8	(3.4)	4.5	(1.7)	-0.42	(0.06)	-0.03	(0.08)
Hungary	15.7	(3.2)	75.7	(3.6)	64.5	(3.8)	0.62	(0.06)	0.20	(0.07)
Iceland	1.1	(0.1)	27.8	(0.2)	1.1	(0.0)	-0.71	0.00	0.20	0.00
Ireland	60.1	(1.2)	83.5	(2.7)	2.5	(1.2)	0.12	(0.08)	-0.32	(0.07)
Italy	3.8	(0.7)	80.8	(2.5)	7.0	(1.7)	0.01	(0.04)	0.18	(0.05)
Japan	31.1	(1.3)	89.6	(2.2)	86.4	(2.5)	-1.15	(0.07)	0.45	(0.07)
Korea	46.4	(3.9)	84.4	(3.0)	59.1	(4.0)	0.54	(0.07)	-0.19	(0.06)
Luxembourg	14.5	(0.1)	66.8	(0.1)	41.6	(0.1)	0.15	0.00	0.26	0.00
Mexico	14.8	(2.1)	84.3	(2.0)	38.0	(2.8)	-0.03	(0.04)	-0.86	(0.06)
Netherlands	67.7	(4.3)	89.6	(2.1)	65.4	(3.9)	-0.50	(0.08)	0.26	(0.07)
New Zealand	5.8	(0.3)	89.2	(2.1)	9.4	(2.1)	0.51	(0.06)	0.31	(0.06)
Norway	1.9	(0.9)	34.3	(3.6)	0.0	(0.0)	-0.50	(0.05)	-0.44	(0.05)
Poland	1.6	(0.1)	64.9	(3.5)	13.5	(2.5)	0.58	(0.04)	-0.09	(0.07)
Portugal	10.2	(1.3)	72.8	(3.9)	6.7	(2.1)	0.66	(0.06)	-0.38	(0.06)
Slovak Republic	7.7	(1.9)	91.4	(2.1)	46.5	(2.6)	0.70	(0.05)	-0.54	(0.05)
Spain	35.5	(0.9)	79.8	(2.2)	3.0	(0.9)	0.19	(0.06)	-0.02	(0.06)
Sweden	8.4	(0.8)	62.9	(3.7)	1.9	(0.7)	-0.49	(0.07)	0.04	(0.06)
Switzerland	4.9	(0.6)	41.6	(2.7)	51.2	(2.5)	-0.25	(0.04)	0.67	(0.06)
Turkey	2.3	(1.4)	68.4	(3.9)	29.1	(3.5)	-0.16	(0.08)	-0.84	(0.08)
United Kingdom	7.1	(0.7)	92.3	(1.5)	10.0	(1.3)	0.41	(0.06)	0.27	(0.08)
United States	7.7	(1.0)	74.1	(3.1)	8.0	(1.9)	0.47	(0.08)	0.29	(0.08)
OECD average	15.00	(0.31)	73.85	(0.50)	25.85	(0.42)	-0.00	(0.01)	-0.00	(0.01)
Partners										
Argentina	34.3	(3.8)	80.8	(3.4)	7.1	(2.1)	0.11	(0.07)	-0.54	(0.08)
Azerbaijan	0.9	(0.4)	m	m	17.3	(3.1)	0.27	(0.07)	-1.37	(0.05)
Brazil	13.5	(1.2)	67.3	(2.4)	8.0	(1.6)	0.24	(0.04)	-0.97	(0.06)
Bulgaria	m	m	84.9	(3.2)	83.9	(2.7)	0.03	(0.06)	-0.58	(0.05)
Chile	55.3	(2.1)	80.9	(3.3)	32.6	(3.7)	-0.27	(0.12)	-0.63	(0.09)
Colombia	18.9	(2.6)	75.8	(5.0)	19.8	(3.4)	0.82	(0.08)	-1.17	(0.07)
Croatia	1.4	(1.0)	77.0	(3.5)	90.6	(1.9)	0.15	(0.08)	-0.55	(0.06)
Estonia	1.9	(0.9)	78.6	(2.6)	44.4	(3.4)	0.90	(0.04)	-0.28	(0.05)
Hong Kong-China	92.5	(0.2)	98.8	(0.9)	82.8	(3.2)	0.92	(0.06)	0.35	(0.08)
Indonesia	39.9	(3.5)	94.8	(1.4)	62.9	(4.4)	-0.04	(0.09)	-1.63	(0.09)
Israel	29.9	(3.6)	82.8	(3.1)	35.7	(4.5)	0.20	(0.09)	0.07	(0.09)
Jordan	19.9	(1.6)	55.8	(3.9)	27.0	(3.4)	0.88	(0.07)	-0.74	(0.08)
Kyrgyzstan	1.4	(0.7)	64.9	(2.9)	22.7	(3.2)	0.76	(0.05)	-2.32	(0.06)
Latvia	0.0	v	95.9	(1.6)	17.6	(2.4)	0.19	(0.03)	-0.54	(0.04)
Lithuania	0.7	(0.7)	72.7	(2.9)	11.1	(2.3)	1.19	(0.04)	-0.39	(0.05)
Macao-China	96.2	(0.0)	89.4	(0.1)	66.4	(0.1)	0.45	0.00	0.06	0.00
Montenegro	0.2	(0.0)	98.5	(0.1)	66.8	(0.2)	0.34	0.00	-1.26	0.00
Romania	0.0	v	54.8	(5.4)	61.6	(4.2)	0.77	(0.08)	-0.74	(0.07)
Russian Federation	0.0	v	68.0	(4.3)	10.9	(2.1)	1.19	(0.05)	-1.18	(0.04)
Serbia	0.6	(0.7)	72.9	(3.6)	91.4	(2.1)	0.31	(0.07)	-0.69	(0.05)
Slovenia	2.3	(0.0)	52.4	(0.5)	38.2	(0.2)	1.15	0.00	0.22	(0.01)
Chinese Taipei	35.1	(2.4)	93.7	(2.1)	52.8	(3.1)	0.77	(0.06)	0.59	(0.12)
Thailand	16.5	(0.7)	88.3	(2.9)	43.5	(4.0)	1.34	(0.06)	-0.67	(0.07)
Tunisia	2.3	(1.0)	51.1	(5.1)	23.6	(3.6)	0.36	(0.08)	-0.69	(0.05)
Uruguay	14.8	(0.8)	47.9	(2.9)	9.0	(1.7)	-0.01	(0.05)	-0.72	(0.07)

Note: * missing information was coded as zero so this column contains the share of students in private schools among all students tested in PISA.

m - Data are not available. These data were collected but subsequently removed from the publication for technical reasons.

w - Data have been withdrawn at the request of the country concerned.

v - There is no variation in this indicator so the standard errors were not calculated.



[Part 1/2]
Table A4.7 Odds ratios for the background model used in Chapter 3

	ESCS		School average ESCS		Indicator for students with an immigrant background		Indicator for students speaking a different language than the language of the test		Indicator for female students		Indicator for students in 7th grade		Indicator for students in 8th grade		Indicator for students in 9th grade		Indicator for students in 10th grade	
	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.
OECD	1.89	(0.16)	2.43	(0.22)	1.06	(0.15)	0.98	(0.19)	0.85	(0.10)	1.00	(0.00)	0.00	(1.35)	0.44	(0.28)	m	m
Australia	1.12	(0.26)	18.38	(0.40)	0.46	(0.51)	0.32	(0.63)	0.57	(0.19)	0.00	(1.44)	0.13	(1.09)	0.62	(0.20)	m	m
Austria	1.26	(0.21)	16.16	(0.25)	0.52	(0.24)	1.80	(0.18)	0.60	(0.19)	0.00	(1.40)	0.00	(7.58)	0.18	(0.21)	m	m
Belgium	1.61	(0.15)	1.80	(0.16)	0.97	(0.19)	0.69	(0.23)	0.79	(0.11)	0.00	(2.44)	0.00	(6.95)	0.38	(0.18)	m	m
Canada	1.60	(0.35)	12.16	(0.39)	1.17	(0.60)	0.63	(0.66)	0.72	(0.18)	0.00	(1.09)	0.07	(1.42)	0.85	(0.19)	m	m
Czech Republic	1.76	(0.24)	2.20	(0.31)	0.47	(0.45)	0.65	(0.60)	0.63	(0.19)	0.00	(1.29)	0.21	(0.38)	m	m	1.24	(0.77)
Denmark	1.74	(0.18)	1.08	(0.35)	0.13	(1.29)	0.98	(0.81)	0.91	(0.17)	0.00	(0.93)	0.59	(0.25)	m	m	m	m
Finland	0.92	(0.28)	9.87	(0.46)	0.91	(0.32)	0.56	(0.49)	0.53	(0.22)	0.00	(3.13)	0.00	(8.07)	0.20	(0.29)	m	m
France	1.14	(0.31)	16.25	(0.35)	0.64	(0.40)	0.33	(0.48)	0.66	(0.25)	0.00	(0.28)	0.42	(0.40)	m	m	2.67	(0.21)
Germany	1.73	(0.22)	3.01	(0.24)	1.13	(0.36)	0.45	(0.95)	1.09	(0.20)	0.00	(0.33)	0.00	(0.24)	0.35	(0.73)	m	m
Greece	1.58	(0.36)	14.70	(0.28)	1.38	(0.89)	0.00	(0.96)	0.44	(0.27)	0.00	(0.74)	0.00	(8.61)	m	m	1.89	(0.21)
Hungary	1.79	(0.21)	0.83	(0.24)	0.43	(1.19)	0.47	(1.01)	1.04	(0.19)	a	a	a	a	0.00	(0.37)	m	m
Iceland	1.79	(0.23)	2.91	(0.31)	1.63	(0.44)	0.38	(0.65)	0.96	(0.16)	0.00	(1.75)	0.32	(0.99)	m	m	1.81	(0.21)
Ireland	1.66	(0.18)	6.28	(0.16)	1.07	(0.28)	0.83	(0.15)	0.60	(0.12)	0.00	(0.64)	0.12	(1.55)	0.41	(0.17)	m	m
Italy	1.35	(0.26)	15.19	(0.38)	0.94	(1.01)	0.00	(7.44)	0.80	(0.19)	a	a	a	a	a	a	m	m
Japan	1.03	(0.19)	7.44	(0.27)	c	c	c	c	0.84	(0.17)	a	a	a	a	0.00	(1.22)	m	m
Korea	1.16	(0.19)	4.00	(0.25)	0.33	(0.21)	2.71	(0.83)	0.53	(0.20)	0.00	(1.21)	0.53	(0.36)	m	m	3.66	(0.22)
Luxembourg	1.15	(0.17)	1.76	(0.16)	0.09	(0.70)	0.74	(0.52)	0.61	(0.12)	0.15	(1.43)	0.12	(0.61)	0.31	(0.22)	m	m
Mexico	1.05	(0.28)	46.68	(0.48)	0.33	(0.46)	1.26	(0.55)	0.67	(0.21)	0.00	(1.21)	0.07	(0.81)	0.35	(0.26)	m	m
Netherlands	1.61	(0.18)	3.13	(0.20)	0.97	(0.32)	0.91	(0.38)	0.96	(0.18)	a	a	a	a	0.00	(1.44)	0.36	(0.49)
New Zealand	1.71	(0.24)	1.66	(0.31)	1.01	(0.38)	0.57	(0.49)	1.06	(0.16)	a	a	a	a	0.03	(6.68)	m	m
Norway	2.14	(0.21)	0.85	(0.26)	0.00	(1.18)	1.13	(1.05)	0.71	(0.12)	0.00	(1.20)	0.00	(6.16)	m	m	191.78	(7.46)
Poland	1.45	(0.24)	1.32	(0.21)	0.00	(9.10)	0.06	(7.32)	0.51	(0.17)	0.00	(8.20)	0.02	(0.70)	0.15	(0.24)	m	m
Portugal	1.95	(0.35)	5.98	(0.34)	0.00	(0.54)	0.81	(0.27)	0.80	(0.19)	0.00	(0.54)	0.00	(0.41)	0.73	(0.20)	m	m
Slovak Republic	1.53	(0.24)	1.58	(0.21)	0.41	(0.42)	0.73	(0.19)	0.61	(0.17)	0.00	(1.07)	0.02	(0.59)	0.13	(0.22)	m	m
Spain	1.69	(0.21)	1.79	(0.29)	0.38	(0.46)	0.70	(0.45)	0.80	(0.19)	a	a	0.01	(6.03)	m	m	1.15	(0.82)
Sweden	1.27	(0.21)	5.99	(0.25)	0.35	(0.26)	0.66	(0.30)	0.82	(0.16)	0.10	(1.12)	0.28	(0.22)	m	m	1.38	(0.21)
Switzerland	1.54	(0.28)	5.46	(0.28)	0.05	(6.53)	1.12	(0.48)	1.13	(0.21)	6.61	(0.76)	2.10	(0.67)	1.95	(0.20)	m	m
Turkey	2.64	(0.23)	1.74	(0.29)	0.94	(0.36)	0.59	(0.43)	0.70	(0.15)	a	a	a	a	a	a	0.78	(0.32)
United Kingdom	1.93	(0.19)	1.58	(0.24)	1.08	(0.28)	0.51	(0.31)	0.64	(0.16)	0.00	(1.47)	0.00	(1.49)	0.37	(0.36)	m	m
United States	1.52	(0.04)	4.02	(0.05)	0.18	(0.39)	0.50	(0.64)	0.73	(0.03)	0.00	(0.34)	0.01	(0.61)	0.15	(0.23)	1.31	(0.25)
OECD average																		
Partners	1.39	(0.21)	3.71	(0.28)	1.58	(0.49)	0.00	(7.43)	0.83	(0.23)	0.00	(0.82)	0.18	(0.44)	0.31	(0.34)	m	m
Argentina	1.29	(0.26)	0.84	(0.32)	0.66	(0.84)	2.27	(0.39)	1.30	(0.16)	0.56	(1.00)	1.17	(0.37)	m	m	1.39	(0.19)
Azerbaijan	1.63	(0.24)	1.42	(0.31)	0.36	(0.65)	0.42	(2.42)	0.55	(0.18)	0.11	(0.52)	0.28	(0.26)	m	m	2.09	(0.19)
Brazil	2.11	(0.32)	6.92	(0.39)	0.00	(6.05)	0.56	(0.36)	0.95	(0.24)	0.00	(1.35)	0.03	(7.33)	m	m	1.35	(0.23)
Bulgaria	1.07	(0.33)	3.14	(0.34)	0.00	(1.59)	1.20	(1.51)	0.50	(0.20)	0.00	(1.56)	0.00	(8.52)	0.23	(0.32)	m	m
Chile	1.44	(0.32)	1.09	(0.36)	0.00	(1.54)	0.00	(1.63)	0.50	(0.24)	0.15	(0.54)	0.21	(0.41)	0.60	(0.31)	m	m
Colombia	1.32	(0.23)	8.17	(0.29)	0.78	(0.23)	0.41	(0.80)	0.72	(0.19)	a	a	0.00	(1.37)	m	m	1.46	(0.18)
Croatia	1.51	(0.27)	1.36	(0.43)	0.30	(0.30)	1.16	(0.57)	0.87	(0.17)	0.19	(1.06)	0.43	(0.21)	m	m	2.83	(0.61)
Estonia	1.22	(0.20)	7.10	(0.39)	1.50	(0.16)	0.59	(0.33)	0.59	(0.18)	0.03	(1.02)	0.21	(0.34)	0.49	(0.23)	m	m
Hong Kong-China	0.95	(0.23)	2.91	(0.38)	0.00	(0.36)	1.97	(0.30)	0.66	(0.23)	0.00	(0.56)	0.31	(0.37)	0.50	(0.27)	m	m
Indonesia	1.48	(0.17)	3.00	(0.29)	1.10	(0.26)	1.25	(0.25)	0.63	(0.20)	a	a	0.00	(5.98)	0.66	(0.26)	m	m
Israel	1.35	(0.15)	1.21	(0.21)	1.63	(0.17)	0.83	(0.52)	2.00	(0.22)	0.00	(1.14)	0.39	(0.73)	0.14	(0.64)	m	m
Jordan	1.05	(0.14)	3.49	(0.32)	1.44	(0.52)	0.61	(0.36)	1.11	(0.16)	0.59	(1.90)	1.00	(0.22)	m	m	1.09	(0.18)
Kyrgyzstan	2.51	(0.33)	2.01	(0.25)	0.77	(0.43)	0.79	(0.44)	0.96	(0.22)	0.00	(7.52)	0.36	(0.32)	m	m	2.74	(0.72)
Latvia	3.18	(0.26)	2.33	(0.24)	1.69	(0.59)	0.55	(0.59)	0.96	(0.18)	0.00	(6.16)	0.51	(0.31)	m	m	1.19	(0.33)
Lithuania	1.37	(0.20)	1.56	(0.23)	1.32	(0.22)	2.29	(0.74)	0.57	(0.19)	0.05	(0.58)	0.13	(0.22)	0.33	(0.15)	m	m
Macao-China	1.54	(0.24)	5.07	(0.32)	2.19	(0.31)	0.83	(0.19)	0.94	(0.16)	a	a	0.00	(0.79)	m	m	2.18	(0.23)
Montenegro	2.80	(0.41)	5.47	(0.38)	c	c	0.69	(0.62)	0.81	(0.30)	0.00	(0.61)	1.00	(0.56)	m	m	1.82	(0.51)
Romania	1.31	(0.28)	1.32	(0.26)	1.05	(0.28)	0.54	(0.37)	0.82	(0.17)	0.00	(1.05)	0.42	(0.26)	0.63	(0.18)	m	m
Russian Federation	1.34	(0.21)	6.70	(0.36)	1.02	(0.27)	1.23	(0.58)	0.85	(0.19)	0.00	(1.58)	1.34	(1.43)	m	m	0.03	(6.71)
Serbia	1.17	(0.30)	39.16	(0.41)	0.54	(0.32)	0.46	(0.50)	0.76	(0.22)	a	a	0.00	(2.23)	0.00	(8.66)	m	m
Slovenia	1.17	(0.18)	17.12	(0.39)	0.37	(0.90)	1.13	(0.15)	0.63	(0.15)	a	a	0.00	(1.41)	0.68	(0.23)	m	m
Chinese Taipei	1.50	(0.29)	2.05	(0.21)	0.00	(1.18)	1.42	(0.17)	1.12	(0.16)	0.00	(1.19)	0.72	(1.10)	0.46	(0.22)	m	m
Thailand	1.14	(0.16)	1.36	(0.20)	0.00	(7.23)	3.26	(0.55)	0.59	(0.17)	0.02	(6.64)	0.07	(0.35)	0.26	(0.23)	m	m
Tunisia	1.42	(0.22)	1.60	(0.23)	0.01	(7.97)	0.83	(0.92)	0.81	(0.21)	0.12	(0.73)	0.07	(0.65)	0.30	(0.33)	m	m
Uruguay																		

[Part 2/2]
Table A4.7 Odds ratios for the background model used in Chapter 3

	Indicator for students in 11th grade		Indicator for students in 12th grade		Indicator for students in 13th grade		Indicator for students in 14th grade		Indicator for observations with imputed information on grade		Indicator for observations with imputed information on migrant background		Indicator for observations with imputed information on language spoken at home		Constant	
	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.	Ratio	S.E.
OECD																
Australia	1.72	(0.11)	0.00	(1.18)	a	a	a	a	a	a	0.40	(0.52)	0.33	(0.76)	0.37	(0.13)
Austria	a	a	a	a	a	a	a	a	a	a	0.00	(6.78)	0.00	(7.48)	0.49	(0.21)
Belgium	1.50	(1.07)	a	a	a	a	a	a	0.00	(1.47)	0.35	(1.14)	0.62	(0.34)	0.44	(0.19)
Canada	3.15	(0.39)	a	a	a	a	a	a	a	a	0.61	(0.40)	0.31	(0.66)	0.43	(0.11)
Czech Republic	a	a	a	a	a	a	a	a	a	a	4.59	(1.37)	0.23	(1.01)	0.50	(0.32)
Denmark	3.63	(0.73)	a	a	a	a	a	a	a	a	0.04	(6.46)	0.53	(0.52)	0.46	(0.19)
Finland	a	a	a	a	a	a	a	a	a	a	0.25	(1.20)	0.38	(1.15)	0.47	(0.18)
France	1.39	(1.05)	a	a	a	a	a	a	a	a	0.39	(0.97)	0.23	(1.14)	0.75	(0.34)
Germany	a	(0.73)	a	a	a	a	a	a	0.70	(1.02)	1.55	(0.64)	0.57	(0.50)	0.15	(0.28)
Greece	1.27	(0.20)	a	a	a	a	a	a	a	a	0.51	(1.24)	0.95	(0.38)	0.65	(0.25)
Hungary	a	a	a	a	a	a	a	a	a	a	0.00	(8.77)	1.70	(0.90)	0.88	(0.44)
Iceland	6.32	(1.32)	a	a	a	a	a	a	a	a	0.43	(1.22)	0.00	(0.26)	0.35	(0.17)
Ireland	2.00	(0.15)	a	a	a	a	a	a	a	a	0.03	(6.60)	0.00	(7.64)	0.39	(0.21)
Italy	0.74	(0.59)	a	a	a	a	a	a	a	a	0.20	(0.60)	0.38	(0.23)	1.17	(0.21)
Japan	a	a	a	a	a	a	a	a	a	a	0.00	(0.93)	0.50	(0.53)	0.59	(0.28)
Korea	2.40	(0.61)	a	a	a	a	a	a	a	a	0.26	(0.94)	0.94	(0.84)	0.46	(0.19)
Luxembourg	a	a	a	a	a	a	a	a	a	a	0.04	(6.53)	0.31	(1.11)	0.15	(0.82)
Mexico	0.67	(0.22)	0.50	(0.43)	a	a	a	a	0.47	(0.40)	0.47	(0.48)	0.82	(1.02)	1.65	(0.40)
Netherlands	a	(15.58)	a	a	a	a	a	a	a	a	0.27	(1.36)	1.29	(0.87)	0.27	(0.26)
New Zealand			1.44	(0.42)	a	a	a	a	a	a	0.44	(1.21)	0.20	(0.69)	0.39	(0.16)
Norway	a	a	a	a	a	a	a	a	a	a	0.00	(7.64)	0.25	(1.08)	0.27	(0.17)
Poland	a	a	a	a	a	a	a	a	a	a	0.16	(1.04)	0.98	(0.70)	0.69	(0.23)
Portugal	a	(10.46)	a	a	a	a	a	a	0.00	(6.90)	0.00	(1.91)	0.60	(0.63)	2.92	(0.41)
Slovak Republic	a	a	a	a	a	a	a	a	a	a	0.03	(7.12)	0.00	(8.75)	1.00	(0.38)
Spain	a	a	a	a	a	a	a	a	a	a	0.27	(0.68)	0.49	(0.47)	1.82	(0.32)
Sweden	a	a	a	a	a	a	a	a	a	a	0.00	(7.87)	0.30	(0.94)	0.43	(0.18)
Switzerland	a	(11.57)	a	a	a	a	a	a	a	a	0.31	(0.71)	0.23	(0.52)	0.50	(0.22)
Turkey	1.96	(0.48)	a	a	a	a	a	a	a	a	0.18	(1.21)	3.07	(1.27)	5.96	(0.70)
United Kingdom			1.67	(0.35)	a	a	a	a	a	a	0.98	(0.45)	0.28	(0.93)	0.49	(0.17)
United States	1.52	(0.20)	0.00	(10.41)	a	a	a	a	0.00	(1.48)	0.38	(0.79)	0.09	(1.12)	0.52	(0.20)
OECD average	9.83	(0.74)	0.49	(0.35)	a	a	a	a	0.23	(0.24)	0.05	(0.70)	0.17	(0.48)	0.58	(0.06)
Partners																
Argentina	0.83	(0.57)	1.28	(0.97)	a	a	a	a	0.60	(1.96)	0.67	(1.26)	0.52	(1.13)	1.84	(0.45)
Azerbaijan	3.55	(1.07)	0.00	(1.60)	0.02	(6.49)	1.00	(0.00)	a	a	0.35	(0.42)	0.76	(0.68)	0.37	(0.47)
Brazil	0.40	(1.44)	a	a	a	a	a	a	a	a	0.05	(2.36)	2.89	(1.11)	2.57	(0.58)
Bulgaria	0.00	(1.57)	a	a	a	a	a	a	a	a	0.39	(0.82)	0.85	(1.05)	1.06	(0.44)
Chile	2.15	(0.28)	a	a	a	a	a	a	a	a	0.17	(1.19)	2.57	(0.75)	1.32	(0.55)
Colombia	1.90	(0.26)	a	a	a	a	a	a	a	a	0.32	(0.90)	2.30	(0.88)	1.29	(0.88)
Croatia	a	a	a	a	a	a	a	a	a	a	0.01	(6.64)	1.65	(0.90)	0.63	(0.21)
Estonia	a	a	a	a	a	a	a	a	a	a	0.01	(6.53)	0.00	(6.25)	0.61	(0.23)
Hong Kong-China	a	a	a	a	a	a	a	a	a	a	0.59	(0.97)	0.02	(6.19)	3.85	(0.45)
Indonesia	1.04	(0.60)	a	a	a	a	a	a	a	a	0.08	(2.41)	1.99	(0.68)	1.93	(0.74)
Israel	a	(14.44)	a	a	a	a	a	a	a	a	0.58	(0.40)	0.35	(0.54)	0.35	(0.19)
Jordan	a	a	a	a	a	a	a	a	a	a	0.18	(0.81)	0.66	(0.79)	0.32	(0.32)
Kyrgyzstan	a	a	a	a	a	a	a	a	a	a	0.38	(0.54)	0.52	(0.60)	0.93	(0.31)
Latvia	a	a	a	a	a	a	a	a	0.54	(2.41)	0.28	(0.78)	0.41	(0.99)	1.06	(0.34)
Lithuania	a	a	a	a	a	a	a	a	0.00	(0.85)	0.46	(0.74)	1.19	(1.21)	0.90	(0.29)
Macao-China	1.51	(0.95)	a	a	a	a	a	a	a	a	0.70	(0.76)	0.00	(0.00)	1.21	(0.89)
Montenegro	a	a	a	a	a	a	a	a	a	a	0.55	(0.86)	0.81	(0.26)	0.57	(0.24)
Romania	a	a	a	a	a	a	a	a	a	a	0.00	(0.66)	1.00	(0.00)	2.32	(0.47)
Russian Federation	2.76	(0.75)	a	a	a	a	a	a	a	a	0.62	(1.41)	0.00	(1.05)	0.58	(0.27)
Serbia	a	a	a	a	a	a	a	a	a	a	0.00	(7.81)	0.00	(8.37)	0.65	(0.25)
Slovenia	3.18	(0.41)	a	a	a	a	a	a	a	a	0.17	(1.47)	0.31	(1.14)	0.26	(0.26)
Chinese Taipei	0.01	(7.70)	a	a	a	a	a	a	a	a	0.14	(1.04)	0.30	(0.54)	1.46	(0.26)
Thailand	1.25	(0.37)	a	a	a	a	a	a	a	a	0.38	(0.67)	0.99	(0.55)	2.54	(0.78)
Tunisia	1.90	(0.39)	a	a	a	a	a	a	a	a	0.55	(0.78)	0.79	(0.47)	2.37	(0.49)
Uruguay	1.14	(0.41)	a	a	a	a	a	a	a	a	1.45	(0.59)	0.41	(0.72)	1.17	(0.38)



[Part 1/4]
Table A4.8 Regression coefficients for the background model used in Chapter 4

	The indicator for disadvantaged students		ESCS		ESCS squared		School mean ESCS		School mean ESCS squared	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
OECD										
Australia	1.63	(3.47)	28.02	(2.12)	-2.83	(1.30)	53.69	(6.37)	6.41	(8.36)
Austria	2.55	(5.05)	7.04	(3.00)	-2.85	(1.30)	105.33	(8.12)	-4.11	(10.50)
Belgium	-1.73	(2.76)	11.67	(1.57)	-0.43	(0.67)	78.30	(5.46)	-2.03	(7.04)
Canada	-2.15	(3.10)	19.71	(1.98)	-2.22	(1.04)	36.78	(8.99)	1.44	(8.46)
Czech Republic	-2.16	(4.32)	15.03	(2.71)	-2.04	(1.43)	108.17	(7.58)	16.43	(8.48)
Denmark	-1.20	(4.85)	25.13	(2.58)	2.09	(1.28)	37.84	(8.44)	-8.38	(10.62)
Finland	1.07	(4.92)	26.48	(3.16)	2.21	(1.52)	-0.75	(10.45)	26.00	(12.55)
France	-7.75	(4.23)	12.24	(2.23)	1.89	(1.51)	60.59	(5.64)	-16.79	(7.67)
Germany	-3.41	(3.81)	5.24	(2.31)	0.64	(0.86)	102.75	(5.67)	-14.57	(6.79)
Greece	0.99	(4.51)	15.81	(2.14)	-1.67	(1.48)	49.13	(4.71)	-11.37	(5.75)
Hungary	1.72	(4.31)	4.96	(1.92)	-1.31	(1.17)	83.70	(5.92)	4.81	(6.30)
Iceland	-1.30	(6.21)	28.56	(4.91)	-1.14	(1.72)	-28.09	(14.43)	17.39	(10.56)
Ireland	1.31	(4.84)	27.75	(2.75)	-0.97	(1.35)	46.43	(5.33)	-19.11	(7.22)
Italy	-2.91	(3.69)	4.71	(1.62)	-3.04	(0.90)	73.52	(4.88)	-3.66	(6.86)
Japan	-3.22	(5.17)	3.52	(3.59)	-4.54	(2.37)	126.48	(9.46)	-23.78	(20.14)
Korea	1.87	(4.50)	9.80	(2.60)	2.19	(1.46)	83.59	(8.66)	-10.71	(12.72)
Luxembourg	-10.96	(3.81)	9.73	(2.22)	-1.16	(0.80)	56.80	(2.54)	-3.44	(4.04)
Mexico	-3.00	(4.38)	6.44	(1.11)	1.12	(0.67)	40.36	(2.71)	6.81	(1.49)
Netherlands	-5.48	(4.46)	3.46	(2.42)	1.58	(1.24)	115.95	(8.10)	-3.26	(10.67)
New Zealand	0.81	(5.05)	38.08	(2.87)	2.91	(1.56)	53.97	(5.98)	-8.12	(9.25)
Norway	-6.44	(4.68)	26.21	(3.26)	-3.05	(1.51)	16.29	(18.50)	18.48	(14.46)
Poland	-0.12	(3.96)	31.70	(1.97)	0.22	(1.19)	24.92	(6.00)	23.14	(7.25)
Portugal	0.24	(4.08)	11.14	(1.55)	1.42	(0.76)	11.92	(2.92)	-0.01	(2.08)
Slovak Republic	-8.02	(4.51)	14.62	(2.64)	-1.58	(1.65)	71.59	(5.42)	23.30	(6.08)
Spain	2.39	(4.16)	12.39	(1.92)	-2.77	(1.07)	16.66	(2.75)	2.48	(3.63)
Sweden	-3.14	(5.07)	26.97	(3.57)	-0.51	(1.44)	34.98	(12.60)	-5.86	(17.83)
Switzerland	-1.04	(3.29)	15.26	(2.16)	1.26	(1.16)	68.21	(6.03)	-2.55	(9.01)
Turkey	4.53	(4.41)	14.52	(2.61)	2.01	(1.23)	82.14	(10.50)	9.43	(4.72)
United Kingdom	2.94	(4.56)	33.57	(2.69)	-2.87	(1.61)	50.91	(6.20)	32.92	(9.94)
United States	0.17	(5.07)	28.01	(2.66)	4.01	(1.26)	40.32	(4.50)	3.97	(7.46)
OECD average	-1.39	(0.81)	17.26	(0.48)	-0.38	(0.24)	56.75	(1.45)	1.84	(1.74)
Partners										
Argentina	-6.49	(7.09)	11.77	(2.59)	1.06	(1.37)	44.80	(8.74)	4.05	(5.95)
Azerbaijan	7.36	(3.97)	8.10	(1.51)	-0.21	(0.88)	20.14	(3.49)	14.51	(4.63)
Brazil	8.44	(4.49)	7.42	(1.84)	-0.65	(0.87)	63.28	(4.97)	14.70	(2.38)
Bulgaria	-1.52	(4.33)	10.49	(2.12)	-2.14	(1.43)	90.44	(6.04)	21.72	(5.36)
Chile	-9.43	(5.48)	8.01	(1.91)	1.61	(0.90)	46.93	(3.74)	3.78	(3.05)
Colombia	2.75	(5.96)	8.86	(2.65)	0.85	(1.15)	37.53	(4.30)	10.56	(3.07)
Croatia	-2.33	(3.86)	11.62	(2.00)	-0.94	(1.27)	81.35	(6.30)	12.23	(12.06)
Estonia	4.07	(4.91)	19.06	(2.76)	3.73	(1.91)	28.73	(7.38)	27.51	(9.05)
Hong Kong-China	6.66	(4.73)	6.57	(3.12)	-0.03	(1.12)	30.28	(18.24)	-37.17	(18.20)
Indonesia	4.54	(3.60)	3.30	(2.13)	0.01	(0.79)	62.12	(15.03)	8.26	(5.61)
Israel	-14.52	(5.95)	18.71	(3.26)	3.71	(1.57)	63.19	(12.77)	-12.27	(15.89)
Jordan	-4.75	(3.76)	19.78	(2.29)	2.77	(0.68)	36.35	(6.78)	12.20	(3.67)
Kyrgyzstan	6.33	(4.18)	8.45	(2.43)	0.21	(1.07)	90.51	(12.39)	12.18	(12.83)
Latvia	8.31	(5.46)	19.33	(2.69)	-1.25	(2.12)	29.99	(6.37)	2.07	(9.66)
Lithuania	9.51	(5.11)	25.79	(2.65)	-5.41	(1.77)	39.86	(5.00)	32.47	(8.49)
Macao-China	-6.21	(4.68)	2.16	(2.64)	-0.25	(1.29)	-4.12	(7.60)	-11.14	(4.81)
Montenegro	5.57	(4.54)	11.75	(2.50)	-2.21	(1.46)	69.30	(3.45)	42.71	(7.33)
Romania	6.08	(5.51)	13.21	(4.03)	-1.16	(1.26)	73.59	(6.46)	14.70	(4.08)
Russian Federation	-2.75	(4.91)	14.62	(2.66)	-0.13	(1.81)	46.20	(7.02)	37.53	(9.11)
Serbia	-0.69	(4.40)	10.56	(1.86)	-2.15	(1.21)	74.94	(4.98)	3.57	(8.99)
Slovenia	-2.14	(5.00)	1.28	(2.83)	1.10	(1.81)	123.20	(4.84)	20.25	(9.08)
Chinese Taipei	3.24	(3.76)	14.68	(1.89)	1.99	(1.59)	112.57	(7.35)	7.45	(13.59)
Thailand	5.63	(4.45)	13.93	(1.84)	1.77	(1.10)	58.27	(5.77)	10.09	(2.72)
Tunisia	7.60	(3.94)	5.83	(1.82)	0.25	(0.59)	27.78	(10.10)	7.84	(3.51)
Uruguay	2.19	(5.73)	13.76	(1.84)	1.76	(0.86)	27.94	(3.42)	7.48	(2.85)

[Part 2/4]
Table A4.8 Regression coefficients for the background model used in Chapter 4

	Indicator for students with an immigrant background		Indicator for students speaking a different language than the language of the test		Indicator for female students		Indicator for students in 7th grade		Indicator for students in 8th grade	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
OECD										
Australia	-0.23	(3.44)	-16.03	(5.08)	-3.80	(2.42)	a	a	-124.37	(28.82)
Austria	-31.02	(6.33)	-22.18	(7.90)	-15.66	(3.93)	-113.48	(36.37)	-55.41	(8.61)
Belgium	-18.28	(4.67)	8.01	(3.31)	-11.90	(2.33)	-131.40	(18.25)	-100.95	(5.97)
Canada	-11.58	(4.34)	-15.58	(4.15)	-8.25	(2.07)	-165.33	(43.24)	-99.16	(8.20)
Czech Republic	-15.87	(11.04)	-25.65	(12.97)	-12.25	(4.57)	-102.30	(17.23)	-87.70	(10.04)
Denmark	-30.98	(8.20)	-29.39	(8.24)	-12.90	(2.86)	-122.30	(28.64)	-51.30	(4.36)
Finland	-42.36	(16.56)	-40.32	(15.58)	0.84	(2.85)	-77.55	(24.24)	-32.45	(4.20)
France	-16.31	(5.91)	-10.30	(8.29)	-12.66	(2.78)	-154.04	(60.97)	-99.44	(8.61)
Germany	-24.95	(5.65)	-22.34	(5.35)	-15.74	(2.33)	-75.00	(11.59)	-41.28	(3.39)
Greece	6.53	(8.35)	-15.24	(9.88)	5.95	(3.75)	-130.53	(29.85)	-76.53	(27.20)
Hungary	-11.42	(9.66)	-13.45	(16.67)	-20.87	(3.09)	-53.56	(10.32)	-23.54	(9.54)
Iceland	-26.55	(15.30)	-44.08	(14.70)	5.84	(3.10)	a	a	a	a
Ireland	8.11	(7.56)	-44.23	(10.16)	-3.57	(3.34)	-160.06	(29.69)	-62.43	(8.52)
Italy	-22.01	(6.72)	0.32	(3.53)	-13.85	(2.82)	-115.73	(28.73)	-60.31	(17.35)
Japan	32.25	(18.37)	-114.57	(22.06)	-4.51	(5.07)	a	a	a	a
Korea	82.62	(27.78)	-24.81	(33.46)	2.32	(3.98)	a	a	a	a
Luxembourg	-31.81	(3.53)	-12.40	(4.86)	-10.59	(2.13)	-40.99	(19.84)	-12.04	(3.69)
Mexico	-47.71	(6.63)	-18.05	(10.07)	-13.38	(1.69)	-60.75	(6.28)	-65.61	(4.93)
Netherlands	-14.01	(7.84)	-12.97	(6.23)	-13.65	(2.60)	-146.81	(32.18)	-64.50	(8.45)
New Zealand	-7.18	(4.12)	-31.85	(5.91)	-1.05	(3.77)	a	a	a	a
Norway	-13.92	(9.03)	-32.83	(8.93)	2.51	(3.09)	a	a	a	a
Poland	-27.29	(53.28)	-4.78	(17.26)	-5.29	(2.43)	-119.09	(17.01)	-91.45	(7.16)
Portugal	-23.32	(5.92)	-1.89	(7.84)	-15.22	(2.32)	-151.37	(4.69)	-108.71	(3.95)
Slovak Republic	-26.39	(20.52)	-18.82	(6.93)	-10.67	(3.41)	-81.08	(20.59)	-89.04	(11.37)
Spain	-25.40	(5.03)	-13.47	(3.37)	-15.13	(1.80)	-228.48	(33.73)	-122.63	(3.74)
Sweden	-24.42	(8.04)	-25.88	(7.99)	-1.65	(2.83)	a	a	-68.56	(8.32)
Switzerland	-42.47	(4.20)	-28.74	(4.79)	-11.89	(2.27)	-80.63	(12.81)	-45.29	(3.20)
Turkey	-3.48	(9.78)	3.11	(9.71)	4.31	(3.46)	1.71	(21.42)	-2.44	(18.80)
United Kingdom	-5.43	(5.38)	-23.47	(7.92)	-8.50	(2.47)	a	a	a	a
United States	-7.94	(5.77)	-19.70	(6.19)	-7.48	(2.84)	-91.00	(10.44)	-99.95	(13.41)
OECD average	-14.09	(2.58)	-22.39	(2.10)	-7.62	(0.56)	-79.99	(4.20)	-56.17	(1.93)
Partners										
Argentina	4.86	(7.18)	-62.41	(26.24)	0.95	(4.16)	-142.96	(24.51)	-92.11	(6.98)
Azerbaijan	-7.45	(6.37)	10.21	(4.34)	7.50	(2.03)	-6.52	(12.09)	-4.45	(4.57)
Brazil	-16.54	(6.57)	10.92	(15.01)	-14.63	(2.12)	-67.08	(4.10)	-48.51	(4.10)
Bulgaria	-35.99	(34.86)	-22.60	(6.20)	1.82	(4.02)	3.25	(22.28)	-21.78	(12.58)
Chile	-40.95	(14.75)	-1.02	(18.23)	-22.82	(3.34)	-92.87	(14.09)	-88.61	(9.07)
Colombia	-50.50	(26.36)	6.77	(16.63)	-16.40	(3.29)	-83.66	(8.92)	-59.33	(5.86)
Croatia	-9.67	(4.18)	-19.17	(13.30)	-9.35	(3.42)	a	a	-84.22	(16.20)
Estonia	-30.83	(5.12)	-11.63	(6.55)	-2.33	(2.70)	-92.05	(9.54)	-31.72	(3.28)
Hong Kong-China	22.55	(3.48)	-27.36	(14.24)	-18.10	(3.66)	-106.14	(9.38)	-72.25	(6.37)
Indonesia	-61.97	(10.16)	14.63	(6.60)	-15.94	(5.21)	-120.35	(39.63)	-42.81	(7.19)
Israel	9.59	(5.10)	-0.10	(6.64)	-1.25	(5.05)	-78.31	(22.64)	-42.06	(36.65)
Jordan	10.84	(3.80)	-9.27	(7.52)	28.13	(3.83)	-118.08	(18.09)	-100.23	(10.88)
Kyrgyzstan	21.20	(9.26)	-16.49	(3.96)	4.41	(2.48)	-59.77	(28.89)	-15.93	(5.59)
Latvia	-9.95	(5.38)	-22.90	(6.02)	-0.03	(2.83)	-99.74	(13.05)	-47.99	(4.25)
Lithuania	-0.07	(10.88)	-22.39	(9.60)	2.28	(2.73)	-104.61	(13.28)	-43.37	(6.15)
Macao-China	17.66	(2.52)	16.05	(14.38)	-14.46	(2.49)	-126.58	(5.65)	-79.63	(3.02)
Montenegro	12.48	(5.18)	-5.65	(2.85)	-2.83	(2.44)	a	a	-86.93	(13.42)
Romania	41.54	(34.06)	-15.19	(8.44)	-4.36	(2.58)	-67.47	(23.92)	-5.21	(11.97)
Russian Federation	-7.34	(4.66)	-41.04	(7.09)	-5.71	(2.51)	-83.77	(20.22)	-56.36	(6.14)
Serbia	-0.07	(3.64)	18.31	(11.70)	-5.95	(3.12)	-110.07	(28.88)	-17.64	(17.67)
Slovenia	-20.76	(5.21)	-28.26	(6.58)	-9.82	(2.24)	a	a	-29.56	(28.75)
Chinese Taipei	-51.08	(11.75)	-9.09	(4.16)	-8.52	(3.74)	a	a	23.19	(18.03)
Thailand	-60.16	(21.50)	9.44	(2.96)	8.40	(2.70)	-141.93	(57.58)	-50.62	(16.49)
Tunisia	-19.42	(9.46)	-11.50	(5.97)	-8.98	(2.76)	-119.43	(5.24)	-86.97	(3.84)
Uruguay	4.38	(26.90)	0.05	(9.27)	-8.97	(3.88)	-110.48	(7.54)	-95.69	(6.36)

Note:

a - The category does not apply in the country concerned. Data are therefore missing.



[Part 3/4]
Table A4.8 Regression coefficients for the background model used in Chapter 4

	Indicator for students in 9th grade		Indicator for students in 10th grade		Indicator for students in 11th grade		Indicator for students in 12th grade		Indicator for students in 13th grade	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
OECD										
Australia	-42.40	(3.57)	reference category		28.01	(3.31)	71.97	(32.76)	a	a
Austria	-24.36	(3.25)	reference category		112.95	(27.36)	a	a	a	a
Belgium	-62.69	(2.70)	reference category		43.26	(7.16)	a	a	a	a
Canada	-35.02	(3.55)	reference category		35.09	(9.18)	90.86	(34.55)	a	a
Czech Republic	-17.71	(6.29)	reference category		a	a	a	a	a	a
Denmark	reference category		10.31	(13.97)	53.84	(14.10)	a	a	a	a
Finland	reference category		-0.44	(12.79)	a	a	a	a	a	a
France	-64.34	(6.37)	reference category		49.06	(9.22)	101.70	(47.95)	a	a
Germany	reference category		40.07	(2.45)	87.66	(16.08)	a	a	a	a
Greece	-34.37	(14.97)	reference category		18.35	(4.12)	a	a	a	a
Hungary	reference category		22.72	(2.27)	4.88	(43.15)	a	a	a	a
Iceland	-63.20	(28.04)	reference category		123.59	(17.80)	a	a	a	a
Ireland	reference category		26.26	(3.89)	27.93	(3.78)	a	a	a	a
Italy	-41.72	(3.69)	reference category		-1.42	(5.83)	a	a	a	a
Japan	a	a	reference category		a	a	a	a	a	a
Korea	-62.48	(19.97)	reference category		41.93	(10.99)	a	a	a	a
Luxembourg	reference category		53.06	(2.65)	114.74	(30.13)	a	a	a	a
Mexico	-36.98	(3.34)	reference category		-6.15	(2.80)	-13.93	(5.15)	a	a
Netherlands	-39.18	(3.43)	reference category		54.82	(14.51)	156.88	(25.80)	a	a
New Zealand	-51.83	(86.28)	-42.63	(6.52)	reference category		41.27	(7.30)	112.63	(27.43)
Norway	-59.13	(21.17)	reference category		61.79	(25.53)	a	a	a	a
Poland	reference category		44.46	(12.72)	a	a	a	a	a	a
Portugal	-61.62	(3.17)	reference category		28.43	(26.42)	a	a	a	a
Slovak Republic	-17.52	(5.20)	reference category		a	a	a	a	a	a
Spain	-74.38	(2.58)	reference category		184.75	(52.51)	a	a	a	a
Sweden	reference category		36.81	(13.08)	a	a	a	a	a	a
Switzerland	reference category		19.23	(5.73)	18.20	(21.26)	-8.99	(32.45)	a	a
Turkey	23.75	(4.93)	reference category		26.98	(6.64)	a	a	a	a
United Kingdom	-211.21	(55.62)	-21.02	(8.73)	reference category		38.73	(8.27)	a	a
United States	-60.56	(4.94)	reference category		14.99	(3.97)	8.06	(39.68)	a	a
OECD average	-34.56	(3.75)	6.30	(0.99)	37.46	(3.26)	16.22	(2.98)	a	a
Partners										
Argentina	-53.88	(5.69)	reference category		5.51	(7.86)	53.29	(21.22)	a	a
Azerbaijan	reference category		7.77	(2.94)	34.17	(11.95)	-43.86	(18.07)	-19.43	(8.23)
Brazil	reference category		30.32	(3.57)	17.78	(16.06)	a	a	a	a
Bulgaria	reference category		18.89	(3.68)	-34.57	(42.57)	a	a	a	a
Chile	-51.23	(3.30)	reference category		14.65	(4.36)	a	a	a	a
Colombia	-32.07	(4.32)	reference category		24.25	(5.08)	a	a	a	a
Croatia	reference category		20.63	(2.72)	a	a	a	a	a	a
Estonia	reference category		36.41	(7.23)	a	a	a	a	a	a
Hong Kong-China	-36.42	(3.83)	reference category		-8.69	(24.49)	a	a	a	a
Indonesia	-27.28	(7.03)	reference category		2.75	(6.05)	a	a	a	a
Israel	-20.26	(6.25)	reference category		60.02	(36.67)	a	a	a	a
Jordan	-65.00	(5.55)	reference category		a	a	a	a	a	a
Kyrgyzstan	reference category		9.59	(3.99)	18.14	(16.83)	a	a	a	a
Latvia	reference category		53.36	(7.69)	60.38	(39.73)	a	a	a	a
Lithuania	reference category		31.21	(5.02)	137.80	(33.20)	a	a	a	a
Macao-China	-46.00	(3.17)	reference category		12.14	(9.91)	a	a	a	a
Montenegro	reference category		19.45	(3.34)	a	a	a	a	a	a
Romania	reference category		41.28	(9.08)	a	a	a	a	a	a
Russian Federation	-30.69	(3.06)	reference category		31.79	(12.92)	a	a	a	a
Serbia	reference category		11.39	(9.24)	a	a	a	a	a	a
Slovenia	-17.36	(22.94)	reference category		30.33	(6.17)	a	a	a	a
Chinese Taipei	-6.98	(5.20)	reference category		37.27	(25.39)	a	a	a	a
Thailand	-25.99	(3.03)	reference category		26.34	(5.12)	a	a	a	a
Tunisia	-57.71	(4.73)	reference category		26.54	(5.86)	a	a	a	a
Uruguay	-57.74	(5.23)	reference category		19.42	(4.81)	a	a	a	a

Note: Reference category consists of students in the modal grade of each country. The coefficients for other grades reflect the difference in performance between students in this grade and students in the modal grade. These results cannot be compared across countries as modal grades can differ between countries.

[Part 4/4]
Table A4.8 Regression coefficients for the background model used in Chapter 4

	Indicator for students in 14th grade		Indicator for observations with imputed information on grade		Indicator for observations with imputed information on migrant background		Indicator for observations with imputed information on language spoken at home		Constant		Number of observations included
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	N
OECD											
Australia	a	a	a	a	-54.47	(8.22)	-74.03	(10.74)	515.12	(3.08)	13995
Austria	a	a	a	a	-41.84	(16.35)	-39.60	(6.22)	521.40	(4.30)	4914
Belgium	a	a	-71.23	(42.31)	-39.68	(11.33)	-22.94	(3.34)	530.16	(3.14)	8777
Canada	a	a	a	a	-45.52	(7.85)	-59.94	(7.81)	533.98	(3.05)	22136
Czech Republic	a	a	a	a	-37.89	(19.74)	-42.42	(9.44)	527.83	(6.60)	5903
Denmark	a	a	a	a	-22.12	(18.70)	-24.51	(8.47)	494.63	(3.83)	4496
Finland	a	a	a	a	-78.70	(15.45)	-43.73	(11.46)	557.51	(3.35)	4697
France	a	a	a	a	-31.62	(11.36)	-24.65	(13.33)	545.75	(4.90)	4606
Germany	a	a	9.45	(12.64)	-23.98	(7.49)	-30.33	(4.49)	501.98	(4.13)	4686
Greece	a	a	-23.84	(26.34)	-41.37	(10.99)	-0.17	(6.08)	488.18	(4.09)	4862
Hungary	a	a	a	a	-21.20	(10.37)	-0.21	(12.14)	517.54	(2.92)	4474
Iceland	a	a	a	a	-77.01	(14.82)	-75.29	(15.91)	480.73	(6.16)	3745
Ireland	a	a	a	a	-28.05	(12.20)	-42.09	(17.45)	509.44	(3.83)	4501
Italy	a	a	a	a	-36.93	(7.03)	-36.86	(3.50)	506.90	(2.80)	21683
Japan	a	a	a	a	-79.51	(59.54)	-25.17	(6.67)	544.07	(4.92)	5862
Korea	a	a	a	a	-72.58	(14.38)	-25.36	(12.41)	523.65	(3.79)	5168
Luxembourg	a	a	a	a	-59.80	(9.36)	-48.23	(5.62)	502.63	(5.89)	4488
Mexico	a	a	-21.87	(12.27)	-34.84	(4.31)	-28.06	(16.06)	471.82	(2.71)	30877
Netherlands	a	a	a	a	-34.49	(9.99)	-14.42	(9.49)	526.44	(4.36)	4838
New Zealand	a	a	a	a	-41.49	(13.17)	-81.11	(8.42)	531.05	(4.25)	4727
Norway	a	a	a	a	-65.75	(16.00)	-55.08	(10.33)	473.57	(6.74)	4602
Poland	a	a	a	a	-64.81	(10.48)	6.93	(11.98)	516.26	(3.01)	5520
Portugal	a	a	-112.40	(13.73)	-45.05	(10.67)	-17.65	(6.10)	540.44	(2.66)	5091
Slovak Republic	a	a	a	a	-28.71	(10.08)	-47.55	(10.70)	516.24	(4.11)	4723
Spain	a	a	a	a	-26.42	(11.36)	-36.49	(7.15)	545.01	(3.02)	19499
Sweden	a	a	a	a	-72.17	(12.93)	-42.90	(15.49)	500.30	(3.50)	4392
Switzerland	a	a	a	a	-67.28	(7.41)	-53.32	(6.85)	531.76	(2.52)	12136
Turkey	a	a	a	a	-38.39	(7.62)	4.79	(14.16)	510.29	(8.61)	4934
United Kingdom	a	a	a	a	-33.13	(9.16)	-63.19	(12.68)	503.44	(3.24)	12806
United States	a	a	-51.99	(38.99)	-41.41	(8.84)	-34.62	(8.81)	490.11	(4.15)	5568
OECD average	a	a	-9.06	(2.24)	-46.21	(2.91)	-35.94	(1.91)	515.27	(0.80)	
Partners											
Argentina	-50.14	(27.17)	-74.58	(39.48)	-9.71	(17.89)	-33.49	(12.15)	448.71	(5.14)	4292
Azerbaijan	a	a	a	a	-16.19	(3.72)	-15.27	(4.90)	378.46	(3.63)	5150
Brazil	a	a	a	a	-43.06	(7.28)	-0.57	(13.03)	461.90	(3.69)	9208
Bulgaria	a	a	a	a	-21.78	(8.74)	-44.09	(16.18)	448.53	(4.70)	4396
Chile	a	a	a	a	-33.10	(9.44)	1.48	(16.39)	495.63	(4.53)	5128
Colombia	a	a	a	a	-51.98	(9.10)	21.26	(11.99)	439.35	(5.15)	4453
Croatia	a	a	a	a	-49.49	(12.13)	-4.89	(9.63)	504.94	(4.15)	5205
Estonia	a	a	a	a	-53.48	(9.16)	-57.93	(12.12)	533.71	(3.49)	4853
Hong Kong-China	a	a	a	a	-29.37	(16.68)	-57.22	(15.52)	610.96	(6.92)	4614
Indonesia	a	a	a	a	-33.61	(8.83)	11.60	(8.81)	483.35	(11.87)	10633
Israel	a	a	a	a	-55.51	(7.47)	-47.04	(9.38)	450.50	(6.06)	4344
Jordan	a	a	a	a	-64.83	(8.27)	-62.71	(8.82)	438.52	(4.58)	6489
Kyrgyzstan	a	a	a	a	-39.12	(7.05)	-31.26	(6.95)	379.08	(5.22)	5882
Latvia	a	a	34.66	(30.25)	-43.33	(10.29)	-44.89	(10.70)	501.39	(3.62)	4691
Lithuania	a	a	-121.06	(21.87)	-30.04	(10.69)	-50.63	(11.99)	484.28	(3.25)	4721
Macao-China	a	a	a	a	-29.41	(10.02)	-13.16	(18.22)	544.17	(13.67)	4746
Montenegro	a	a	a	a	-17.84	(8.01)	-5.99	(4.75)	408.54	(2.78)	4408
Romania	a	a	a	a	-0.12	(28.67)	-63.78	(58.44)	445.60	(5.26)	5110
Russian Federation	a	a	a	a	-55.32	(14.17)	-62.88	(24.18)	501.74	(4.12)	5785
Serbia	a	a	a	a	-26.80	(10.99)	-61.98	(30.68)	452.27	(3.99)	4786
Slovenia	a	a	a	a	-30.89	(10.89)	-57.11	(8.63)	506.96	(2.38)	6554
Chinese Taipei	a	a	a	a	-56.36	(8.48)	-48.56	(5.64)	580.11	(5.05)	8794
Thailand	a	a	a	a	-34.95	(5.77)	-12.60	(6.29)	489.89	(3.32)	6172
Tunisia	a	a	a	a	-18.15	(8.56)	-7.89	(4.81)	450.99	(6.23)	4627
Uruguay	a	a	a	a	-14.50	(6.86)	-3.64	(6.60)	471.52	(4.63)	4790

Note:
a - The category does not apply in the country concerned. Data are therefore missing.



Table A4.9 Percentage of students with missing information on the socio-economic status in the original PISA sample by country

		Percentage of students with no information on the ESCS index
		%
OECD	Australia	1.2
	Austria	0.3
	Belgium	0.9
	Canada	2.3
	Czech Republic	0.5
	Denmark	0.8
	Finland	0.4
	France	2.3
	Germany	4.2
	Greece	0.2
	Hungary	0.4
	Iceland	1.2
	Ireland	1.8
	Italy	0.4
	Japan	1.5
	Korea	0.2
	Luxembourg	1.7
	Mexico	0.3
	Netherlands	0.7
	New Zealand	2.0
	Norway	1.9
	Poland	0.5
	Portugal	0.4
	Slovak Republic	0.2
	Spain	0.5
	Sweden	1.1
	Switzerland	0.5
Turkey	0.2	
United Kingdom	2.6	
United States	0.8	
OECD average	1.1	
Partners	Argentina	1.1
	Azerbaijan	0.7
	Brazil	0.9
	Bulgaria	2.3
	Chile	2.0
	Chinese Taipei	0.2
	Colombia	0.6
	Croatia	0.2
	Estonia	0.2
	Hong Kong-China	0.7
	Indonesia	0.1
	Israel	5.2
	Jordan	0.3
	Kyrgyzstan	0.4
	Latvia	0.6
	Liechtenstein	0.6
	Lithuania	0.5
	Macao-China	0.3
	Montenegro	1.1
	Qatar	4.8
	Romania	0.2
	Russian Federation	0.2
	Serbia	0.3
Slovenia	0.6	
Thailand	0.3	
Tunisia	0.3	
Uruguay	1.0	



[Part 1/2] **Table A4.10** Share of students with missing information on a variable
(Percentage of observations in the analytical sample)

	General interest in science	Instrumental motivation to learn science	Participation in science related activities	Self-concept	Self-efficacy	Information in science related careers	School preparation for science careers	Share of students who attended general science compulsory courses
	%	%	%	%	%	%	%	%
OECD								
Australia	16.5	0.3	0.2	16.6	0.2	0.9	0.8	1.6
Austria	13.2	0.1	0.2	13.0	0.7	1.7	1.5	2.5
Belgium	15.6	0.5	0.2	14.8	2.3	2.7	2.9	2.4
Canada	19.5	0.3	0.3	18.6	0.3	0.6	0.5	1.1
Czech Republic	3.0	0.1	0.8	2.9	2.1	2.4	2.4	2.5
Denmark	6.9	1.0	0.6	6.3	0.9	1.9	1.3	3.8
Finland	1.0	0.4	0.1	1.2	0.3	0.7	0.6	1.0
France	3.3	0.6	0.7	3.3	0.2	1.6	1.5	1.8
Germany	4.2	0.4	0.2	4.0	3.2	3.3	3.6	3.7
Greece	1.3	0.2	0.2	1.1	0.2	0.6	0.4	0.5
Hungary	1.3	0.1	0.1	1.2	0.3	0.2	0.1	0.4
Iceland	5.5	0.4	0.4	5.2	0.2	0.7	0.8	1.2
Ireland	13.3	0.7	0.2	12.7	0.3	1.1	1.0	2.2
Italy	9.7	0.5	0.2	9.7	0.4	0.8	0.8	1.3
Japan	1.0	0.1	0.2	1.0	0.1	0.4	0.3	0.0
Korea	0.3	0.3	0.1	0.2	0.1	0.1	0.1	0.3
Luxembourg	2.7	0.4	0.4	3.1	0.6	1.0	1.1	1.6
Mexico	4.7	0.2	0.1	3.8	0.1	0.5	0.5	2.0
Netherlands	12.3	0.2	0.2	12.3	2.1	2.3	2.3	2.3
New Zealand	8.9	0.1	0.1	9.0	0.2	0.7	0.5	0.6
Norway	4.2	0.9	0.6	4.2	0.8	2.0	2.4	0.0
Poland	0.5	0.1	0.0	0.7	0.2	0.4	0.4	0.0
Portugal	21.3	0.4	0.1	21.1	0.2	0.4	0.5	1.0
Slovak Republic	1.8	0.2	0.2	1.4	1.1	1.3	1.2	1.1
Spain	1.6	0.3	0.2	1.6	0.2	0.4	0.7	0.6
Sweden	3.3	0.4	0.1	3.2	0.5	1.1	1.0	1.7
Switzerland	10.6	0.4	0.2	9.8	0.3	0.6	0.7	1.1
Turkey	2.1	0.3	0.2	2.9	0.3	0.6	0.5	1.4
United Kingdom	2.4	0.3	0.2	3.0	0.3	0.7	0.7	1.8
United States	2.0	0.9	0.9	2.0	0.9	1.3	1.3	1.9
OECD average	6.5	0.4	0.3	6.3	0.7	1.1	1.1	1.4
Partners								
Argentina	8.1	0.9	0.8	7.6	0.8	2.7	2.2	5.6
Azerbaijan	8.9	2.0	2.2	9.0	2.7	5.6	4.5	7.4
Brazil	5.9	0.5	0.5	6.0	0.5	2.0	1.6	3.5
Bulgaria	4.2	1.1	0.9	4.1	3.0	2.4	2.3	2.8
Chile	4.8	0.1	0.3	5.1	0.2	1.1	0.9	2.4
Colombia	3.4	0.3	0.3	3.6	0.2	0.7	0.6	1.7
Croatia	14.3	0.4	0.8	12.7	0.2	0.5	0.6	1.1
Estonia	0.9	0.2	0.2	0.8	0.1	0.3	0.1	1.0
Hong Kong-China	19.7	0.1	0.0	19.8	0.0	0.1	0.1	9.1
Indonesia	3.4	0.5	0.5	3.5	0.6	1.2	0.9	1.8
Israel	9.8	2.6	1.6	7.6	2.7	6.4	4.9	6.3
Jordan	1.7	0.5	0.4	1.8	0.5	0.8	0.8	1.2
Kyrgyzstan	9.9	1.2	1.2	10.2	1.2	3.8	3.0	7.3
Latvia	0.8	0.1	0.1	0.9	0.2	0.3	0.3	0.8
Lithuania	1.1	0.4	0.2	1.1	0.3	0.3	0.3	1.0
Macao-China	38.3	0.1	0.1	38.3	0.1	0.3	0.2	1.5
Montenegro	4.3	0.6	0.4	3.4	1.5	1.6	1.3	2.6
Romania	1.4	0.2	0.2	1.0	0.3	0.7	0.4	0.5
Russian Federation	2.6	0.2	0.2	2.6	0.3	0.6	0.4	0.2
Serbia	5.3	0.3	0.3	5.2	0.6	0.8	0.8	1.2
Slovenia	9.6	0.6	0.3	9.5	3.3	4.4	3.9	4.2
Chinese Taipei	0.4	0.1	0.1	0.4	0.1	0.2	0.2	0.4
Thailand	0.5	0.3	0.4	0.4	0.4	0.3	0.2	0.4
Tunisia	8.0	0.9	0.5	9.7	0.5	2.1	1.8	4.6
Uruguay	12.5	1.0	0.7	12.6	0.8	3.2	4.1	9.4



[Part 2/2] **Share of students with missing information on a variable**
Table A4.10 (Percentage of observations in the analytical sample)

	The number of science regular hours	The number of compulsory courses in general science, physics, biology and chemistry*	Students in private schools*	Students in schools which compete for students	Students in schools which select based on academic record	Index of school activities to promote the learning of science	Index of the quality of school educational resources
	%	%	%	%	%	%	%
OECD							
Australia	2.2	1.6	w	0.7	0.9	0.3	0.0
Austria	4.3	a	0.0	1.1	2.4	2.6	0.0
Belgium	5.1	2.4	w	1.3	2.4	1.3	1.3
Canada	4.2	1.1	0.0	5.9	3.9	3.7	3.6
Czech Republic	3.3	2.5	0.0	4.3	3.7	2.5	4.8
Denmark	2.4	3.8	0.0	16.9	18.2	16.9	17.0
Finland	1.4	1.0	0.0	1.1	1.4	0.0	0.0
France	2.9	a	w	w	w	w	w
Germany	5.9	3.7	0.0	4.6	7.0	4.2	4.2
Greece	2.2	a	0.0	2.7	3.6	0.7	1.4
Hungary	2.1	a	0.0	2.1	4.1	2.4	2.1
Iceland	1.5	1.2	0.0	5.0	6.0	4.1	3.6
Ireland	2.1	2.2	0.0	1.9	3.2	1.9	2.5
Italy	2.5	1.3	0.0	3.1	4.2	2.8	2.5
Japan	0.6	0.0	0.0	1.1	0.8	0.0	0.0
Korea	1.3	0.3	0.0	0.7	2.2	0.0	0.0
Luxembourg	3.8	a	0.0	0.0	0.0	0.3	0.0
Mexico	3.2	2.0	0.0	3.6	2.2	3.3	1.5
Netherlands	8.4	2.3	0.0	0.8	0.8	0.2	0.2
New Zealand	1.5	0.6	0.0	5.3	4.5	4.5	5.6
Norway	2.7	0.0	0.0	2.5	5.4	1.9	1.9
Poland	1.3	a	0.0	2.4	0.7	0.7	0.7
Portugal	3.0	1.0	0.0	1.7	2.3	0.0	0.0
Slovak Republic	2.5	a	0.0	0.7	1.9	0.7	0.0
Spain	2.4	0.6	0.0	1.3	1.4	0.7	1.0
Sweden	1.8	1.7	0.0	0.1	2.0	0.0	0.0
Switzerland	2.5	1.1	0.0	1.9	2.0	0.5	1.6
Turkey	2.4	1.4	0.0	1.4	0.0	0.7	1.6
United Kingdom	1.8	1.8	0.0	7.2	7.6	7.2	7.2
United States	4.1	1.9	0.0	3.0	2.3	2.7	2.3
OECD average	2.8	1.5	0.0	2.9	3.3	2.3	2.3
Partners							
Argentina	7.2	a	0.0	5.0	2.4	2.6	1.5
Azerbaijan	10.3	7.4	0.0	m	5.7	0.1	1.7
Brazil	6.1	a	0.0	2.8	3.3	1.2	1.3
Bulgaria	5.8	2.8	m	0.6	1.4	3.1	0.8
Chile	3.5	2.4	0.0	2.5	2.9	4.1	2.2
Colombia	3.4	a	0.0	3.7	1.2	0.5	0.5
Croatia	4.1	1.1	0.0	0.0	0.0	0.0	0.0
Estonia	1.3	1.0	0.0	0.7	0.0	0.0	0.0
Hong Kong-China	1.3	9.1	0.0	0.0	0.0	0.0	0.0
Indonesia	2.0	1.8	0.0	4.7	2.4	0.8	0.6
Israel	9.9	6.3	0.0	11.0	7.5	6.6	2.3
Jordan	4.4	1.2	0.0	4.4	0.5	0.0	0.5
Kyrgyzstan	12.0	7.3	0.0	1.6	3.9	0.0	0.6
Latvia	1.6	a	0.0	1.9	1.1	0.0	0.0
Lithuania	1.6	1.0	0.0	0.0	0.0	0.4	0.6
Macao-China	0.9	1.5	0.0	0.0	0.0	0.0	0.0
Montenegro	5.2	2.6	0.0	0.1	0.0	0.0	0.0
Romania	1.9	0.5	0.0	3.3	1.5	0.0	0.0
Russian Federation	2.2	a	0.0	0.4	1.1	0.7	0.0
Serbia	3.0	1.2	0.0	2.0	1.4	0.7	0.0
Slovenia	6.1	4.2	0.0	1.1	2.1	1.1	0.8
Chinese Taipei	2.4	0.4	0.0	0.0	1.3	0.0	0.4
Thailand	0.5	0.4	0.0	2.1	0.0	0.0	0.0
Tunisia	5.2	4.6	0.0	2.7	2.1	2.0	1.3
Uruguay	7.4	9.4	0.0	3.4	3.2	1.1	2.8



Table A4.11 Weighted percentage of resilient students and comparison group

	Resilient		Disadvantaged low achievers (DLA)	
	Percentage of students	S.E.	Percentage of students	S.E.
OECD				
Australia	6.4	(0.3)	15.6	(0.6)
Austria	6.2	(0.5)	16.3	(1.1)
Belgium	5.2	(0.3)	18.0	(0.8)
Canada	7.0	(0.3)	15.1	(0.6)
Czech Republic	5.4	(0.4)	16.3	(0.9)
Denmark	6.1	(0.4)	16.1	(1.0)
Finland	7.5	(0.4)	15.0	(0.6)
France	4.5	(0.4)	18.2	(1.2)
Germany	5.0	(0.4)	17.2	(1.2)
Greece	5.8	(0.5)	16.6	(1.1)
Hungary	5.0	(0.4)	17.6	(1.0)
Iceland	7.1	(0.5)	14.6	(0.5)
Ireland	6.3	(0.4)	15.9	(1.0)
Italy	6.3	(0.4)	15.8	(0.5)
Japan	6.9	(0.5)	15.5	(1.0)
Korea	7.2	(0.5)	14.6	(0.8)
Luxembourg	4.5	(0.3)	18.9	(0.5)
Mexico	5.1	(0.3)	16.4	(1.2)
Netherlands	6.0	(0.4)	16.7	(1.0)
New Zealand	6.0	(0.4)	16.8	(0.8)
Norway	6.7	(0.5)	15.2	(0.8)
Poland	6.3	(0.4)	16.0	(0.7)
Portugal	5.8	(0.5)	16.3	(1.1)
Slovak Republic	5.8	(0.4)	17.1	(0.9)
Spain	6.0	(0.3)	16.0	(0.8)
Sweden	6.6	(0.5)	15.6	(0.8)
Switzerland	5.3	(0.3)	16.8	(0.8)
Turkey	6.4	(0.5)	14.4	(1.0)
United Kingdom	5.8	(0.3)	16.1	(0.7)
United States	5.2	(0.4)	17.0	(1.4)
OECD average	6.0	(0.1)	16.3	(0.2)
Partners				
Argentina	4.6	(0.4)	16.9	(1.6)
Azerbaijan	8.7	(1.0)	13.0	(0.9)
Brazil	5.7	(0.5)	15.1	(0.8)
Bulgaria	4.6	(0.4)	17.9	(1.6)
Chile	4.5	(0.4)	17.6	(1.6)
Colombia	6.2	(0.7)	14.9	(1.2)
Croatia	6.3	(0.4)	15.7	(0.8)
Estonia	7.1	(0.6)	14.7	(0.8)
Hong Kong-China	7.6	(0.5)	14.7	(0.8)
Indonesia	6.9	(0.7)	14.2	(1.3)
Israel	5.4	(0.5)	16.2	(0.9)
Jordan	5.8	(0.4)	15.6	(0.8)
Kyrgyzstan	7.4	(0.6)	13.4	(0.9)
Latvia	7.1	(0.5)	15.2	(1.1)
Lithuania	5.9	(0.4)	16.1	(0.7)
Macao-China	8.5	(0.5)	13.1	(0.6)
Montenegro	7.6	(0.4)	14.8	(0.6)
Romania	5.9	(0.8)	16.2	(1.5)
Russian Federation	7.0	(0.6)	14.8	(1.1)
Serbia	6.1	(0.5)	15.8	(1.1)
Slovenia	5.2	(0.4)	16.9	(0.5)
Chinese Taipei	6.4	(0.4)	16.1	(1.2)
Thailand	6.4	(0.5)	14.3	(0.8)
Tunisia	7.2	(0.6)	13.3	(0.9)
Uruguay	5.3	(0.5)	16.6	(0.9)



ANNEX A5: TECHNICAL NOTES

This annex provides additional information on the characteristics of students and schools analysed in the report and on the statistical approaches used. The annex presents the definitions and methods used to construct groups of disadvantaged and resilient students as well as results obtained from robustness checks that were conducted to ensure that results discussed in the report are not dependent on methods of analysis. The annex then provides descriptive information on the student and school characteristics used in the report. Finally, the regression models applied in Chapters 3 and 4 are discussed, giving detailed descriptions of the background model, missing data imputation, the logistic regression used in Chapter 3 and the linear regression applied in Chapter 4.

GROUP IDENTIFICATION PROCEDURE FOR THIS REPORT

Central to the analytic strategy of this report is the identification of several key student groups. The report takes two distinct approaches in this regard. One is to produce results which can be meaningfully compared across countries. The other one is to define groups of students which can be analysed within each country and which takes into account a country's context. While the cross-country comparable definition gives a hint on how successful different systems are in helping disadvantaged students performing at the top, this definition is less useful for within-country analysis as in some cases the number of resilient students is too small. For example, with the internationally comparable definition we have less than 1% of resilient students in some partner countries and economies. With such small samples, any analytical attempts cannot produce reliable results. In fact, one of the PISA quality requirements is not to publish results based on samples representing less than 3% of the population (or 30 students or less than 5 schools). Thus, another definition was developed which defines resilient students using performance levels relative to the context of each country. With this definition, it makes little sense to compare percentages of resilient students across countries as students defined as resilient importantly differ in their performance levels. However, this definition can be used to compare countries in how individual or school factors affect performance of disadvantaged students within each country. This way, important insights into how countries deal with relatively disadvantaged students can be obtained. The report uses this definition, more details are discussed below. After that, this section discusses the construction of internationally comparable measure of the share of resilient students, also referred in the report as internationally successful disadvantaged students. The section provides a graphical representation of how these definitions differ in practice using examples from two countries (Australia and Argentina).

The main group identification strategy: the relative within-country definition

Within each country, students were separated into three performance categories – low, middle and high achievers – and into three socio-economic groups – low, middle and high socio-economic background. These two sets of categories were combined to identify disadvantaged low achievers and resilient students. The implementation of the identification strategy described above was complicated by the fact that PISA provides five plausible values of performance rather than one single performance measure. A second issue was the need to ensure that students were split into equal sized groups according to their socio-economic background using the PISA index of economic, social and cultural status (ESCS).

The report defines students as low achievers if their assessment score is below the 33rd percentile of the score distribution in the country where they were assessed and as high achievers when their score is above the 67th percentile. As noted above, PISA provides five plausible values of science performance rather than one single measure. The five plausible values are a representation of the range of abilities that a student might reasonably have (OECD, 2007). Instead of directly estimating a student's ability PISA estimates a probability distribution for each student's ability. From the distribution obtained, five values were randomly selected. Consequently, each student was assigned to an achievement group (low, middle or high achiever) for each of the five plausible values.



Students were also assigned to one of three groups (or tertiles) using their values on the index of socio-economic background using the same criteria as for science assessment scores: one group of disadvantaged students (*i.e.* the bottom third) and two groups of non-disadvantaged students (*i.e.* the middle and top thirds). As noted below, in Chapter 4, the middle and top thirds are combined and referred to as “non-disadvantaged students”. The use of a simple cut-point procedure to allocate students into the tertiles would have resulted in uneven group sizes across countries (e.g. the bottom group could have comprised 32.4% of students in country A but 33.2% of students in country B). In other words, if this simple procedure had been used, the definition of disadvantaged students would not have been consistent across countries, potentially introducing a source of error in the results. This problem arises because the distribution of the index of socio-economic background is not sufficiently continuous to prevent the grouping of students at the two cut-points. (The distribution of the five plausible values does not cause this problem.) To achieve equal group sizes across countries, it was necessary to randomly distribute students with values equal to one of the two cut-points into the two adjacent groups (*i.e.* low or middle for students with values at the 33rd percentile; middle or high for students with values equal to the 67th percentile).

Rather than simply assigning all of these students to one of these groups, the report used a random subsampling process to ensure equal groups for low, middle and high socio-economic background students across all countries. The following procedure was adopted: first a “pseudo” random number with a normal distribution with mean 0 and standard deviation of 1 was generated and then this random number was multiplied by 0.01 and added to the value of the index of socio-economic background (which has mean 0 and standard deviation 1 in the sample of students from OECD countries, weighting countries equally). The resulting distribution was sufficiently continuous for the cut-point procedure to be used to create equal groups across countries. This random allocation of a small portion of a point to each student’s socio-economic index value added an error component to the standard error, however, which was accounted for using the plausible values approach by computing a set of five plausible socio-economic background group assignments for each student.

After assigning students to groups for both science achievement and socio-economic background, the five plausible group assignments for science achievement were combined with the five plausible group assignments for socio-economic background (e.g. combining the first science achievement group assignment with the first socio-economic background group assignment, combining the second science achievement group assignment with the second socio-economic background group assignment, etc.). This process resulted in five new grouping variables each with nine values (envison a 3x3 matrix: bottom third of socio-economic background and bottom third of performance, bottom third of socio-economic background and middle third of performance, bottom third of socio-economic background and top third of performance, etc).

The report identifies students as resilient if they belong to the bottom third of the socio-economic background distribution in the country where they took the assessment and to the top third in terms of science performance. The report identifies students as disadvantaged low achievers if they belong to the bottom third of socio-economic disadvantage and their science achievement scores place them in the bottom third of the achievement distribution in the country where they took the assessment. In the analyses the framework to identify resilient students and disadvantaged low achievers just described was applied to the five new grouping variables. This resulted in five plausible resilient student groups and five plausible disadvantaged low achievers groups in each country.

Internationally comparable definition of student groups

For the internationally comparable definition of resilient students, within each country students were defined as disadvantaged and non-disadvantaged relatively to distribution of socio-economic background



in this country. This is identical to the method discussed above for the within-country relative definition, so the group of disadvantaged students is defined in the same way, the one on the bottom third of the distribution. However, performance level categories were defined in a more internationally comparable fashion. Performance thresholds were calculated by regressing student performance on their socio-economic background, more precisely, on the PISA index of economic, social and cultural status (with its square term to allow for non-linearities). Student performance levels were then defined by dividing regression residuals into equal thirds. In other words, students were divided into groups of successful, average, and low-performers, by looking at their performance in comparison to peers sharing similar socio-economic background across countries. The analysis was conducted on the pooled sample of students from all countries, so performance was compared among students from all countries (weighting countries equally). Students were defined as resilient or internationally successful disadvantaged students, if they were disadvantaged students who perform in the top third of students from all countries after accounting for socio-economic background. Similarly, a disadvantaged student whose performance after accounting for socio-economic background lies in the lowest third was defined as a disadvantaged low achiever. Shares of students in these two groups were then compared across countries to study where disadvantaged students are more likely to be among top performing students sharing a similar socio-economic background from all countries.

Difference between an internationally comparable and the within-country relative definition of resilient students

Figure A1 below compares graphically two methods of identifying resilient and disadvantaged low-achieving students. The graph uses data from two countries which are first in alphabetical order among PISA participants. These are Argentina and Australia, which noticeably differ in socio-economic background of their students as well as in their science performance. On the top panel, the definition valid for within-country comparisons is presented, while in the bottom panel the internationally comparable definition is displayed. The horizontal axis represents student socio-economic background and the vertical axis represents student performance in science. The blue solid line reflects a positive relation between socio-economic background and science performance on a pooled sample of students from all participating countries. The vertical solid black line delimits disadvantaged and non-disadvantaged students in each country. Now, in the top panel two dashed horizontal lines divide student sample into equal thirds according to their level of science performance relatively to performance distribution in each country. Green points are showing disadvantaged students who are among the top third of performers in each country, while red points are showing disadvantaged students who are among the bottom third of performers in each country. These are resilient and disadvantaged low-achieving students, respectively, according to the within-country comparable definition used throughout the report. Performance levels in these groups differ between countries (graphs in all panels are on the same scale to allow easy comparisons). While within this definition the shares of resilient students in the two countries are similar, resilient students in Argentina have on average much lower science scores than resilient students in Australia.

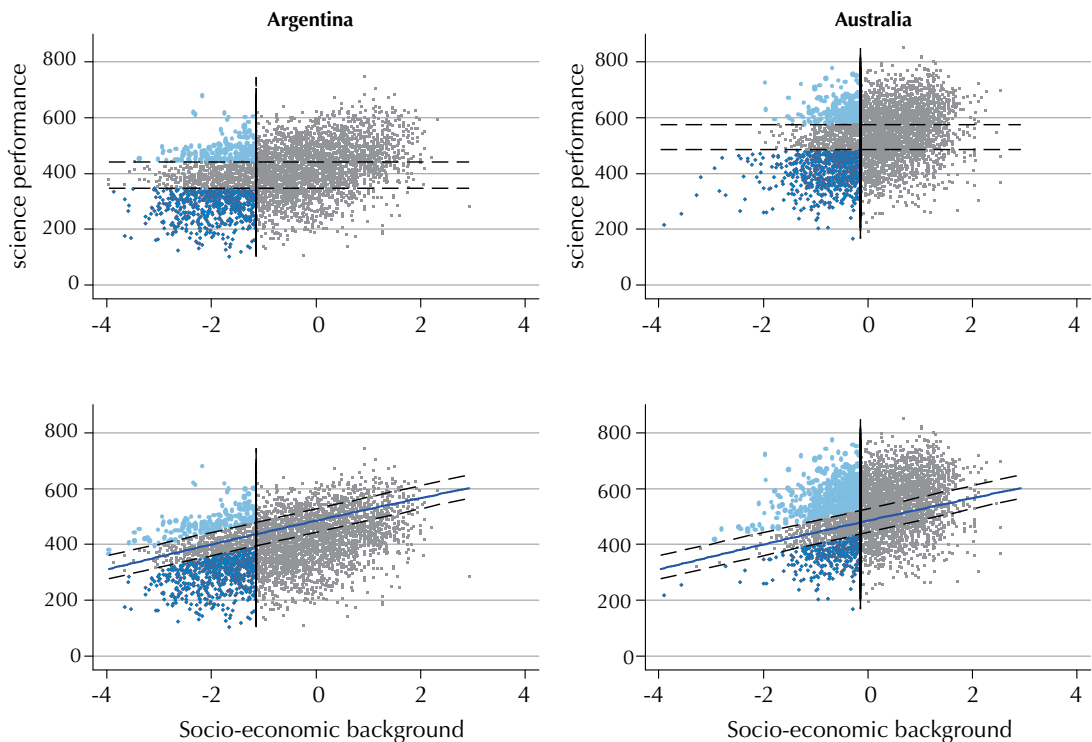
In the bottom panel, student performance is compared across all countries after taking into account student socio-economic background. Two dashed and positively sloped lines go in parallel to the thick blue line reflecting the international relation between socio-economic background and science performance (based on all countries, equally weighted). These lines cut into thirds student population tested in PISA according to how well student perform in science after accounting for their socio-economic background. Technically speaking, these lines cut into equal thirds the residuals from regression of science performance scores on the PISA index of economic, social, and cultural status and its squared term. In other words, these residuals reflect how much student gain in performance when comparing to their peers in an international sample who have exactly the same level of socio-economic background. Within this definition, green points are

showing disadvantaged students who are among the top third of performers in the international sample, while red points are showing disadvantaged students who are among the bottom third of performers in an international sample, with the effect of socio-economic background on performance already accounted for. These are internationally successful disadvantaged students and disadvantaged low-achieving students, respectively, according to the internationally comparable definition used in the second chapter of the report to make cross-country comparisons. In this case, disadvantaged students in Argentina have on average much lower socio-economic status, but they rarely perform at the top third even after taking into account the cross-national effect of socio-economic background on science performance. In internationally comparable terms, the share of resilient students is much lower in Argentina than in Australia.

Figure A5.1

Within-country relative definition of resilient and disadvantaged students in comparison to the internationally comparable definition.

Examples for Argentina (left panels) and Australia (right panels)



Further details on the analysis with groups of disadvantaged and non-disadvantaged students

Analyses presented in the report were conducted using the methodology described in the OECD analysis manual: for each plausible group variable, the required statistic and its respective sampling variance were computed using the final and 80 replicate weights; then the five estimates and their respective sampling variances were averaged; the imputation variance was computed; and the sampling variance and the imputation variance were combined to obtain the final error variance.



For Chapter 4, where performance scores were not used to define groups, repeating analysis five times for different performance thresholds was less important and only one identifier of socio-economic group was used. In this chapter two categories of students were compared: disadvantaged and non-disadvantaged students. Chapter 4 defines disadvantaged students as those who have values in the bottom third of their country's distribution of the socio-economic background index and non-disadvantaged students as those who have middle or top third values in the socio-economic background index. The final analysis was conducted with five plausible values and replicate weights fully accounting for measurement error in student scores and for complex survey design.

ROBUSTNESS CHECKS FOR THE GROUP IDENTIFICATION PROCEDURES

Comparing student and parents responses

Throughout the report the PISA index of economic, social and cultural status was used to identify disadvantaged students. This index is constructed from student reports of household possessions as well as their parents' occupation and education attainment. There is a possibility that student reports of their parents' occupation and education attainment are inaccurate and thus introduce error into the PISA measure of socio-economic background. This possible measurement error could result in the exclusion of some disadvantaged students from the sample while some non-disadvantaged students are included. Here, the analysis makes use of the available parent survey data to conduct a robustness check of the identification of disadvantaged students. The results revealed no evidence across countries that students with low socio-economic background index values are any more or less likely to accurately state their parents' occupation and education than students with high socio-economic background index values. (See Tables A1 and A2.) Therefore, while this analysis does not rule out the presence of measurement error in the socio-economic background index, results suggest that measurement error is not a larger concern in identifying disadvantaged students than it is when identifying advantaged students.

The strategy used was to compare parent-reported occupation and educational attainment with the information provided by the student. Specifically, the analysis compares responses to two variables used in the construction of the socio-economic background index – highest occupational status of the parents (HISEI) and highest educational level of the parents (HISCED). The analysis calculates two statistics – the percentage of parent-student pairs with perfect agreement and the average disagreement between the parent and student responses – for students overall and by socio-economic background tertile.¹ It is possible to carry out this analysis in the 15 countries in which the parent survey was administered.

There are several limitations to this approach. First, ideally the analysis would create a socio-economic background index based on parent responses and compare this to the student-reported index, but this is not possible as parents were not asked the questions about household possessions which were asked of students. Therefore, it is not possible to assess the extent to which the observed disagreement between student and parent responses would result in movement across socio-economic background tertiles, changing which students are labelled as disadvantaged. Second, the parent survey was only administered in ten OECD countries and five partner countries and economies. These are not necessarily representative of the 55 countries analysed in this report. Third, the rate of non-response to the parent survey varies considerably across these 15 countries. High non-response rates increase the likelihood that the students with parent data are not representative of the students from that country. Although these limitations severely limit the report's ability to assess how robust the identification of disadvantaged students is to measurement error, this analysis does provide useable insights into the presence and scope of possible measurement error arising from the student reports.

There are three key findings that flow from this analysis. First, as expected, missing data from students is a larger problem among students with the lowest socio-economic background. In some cases, the rate of



missing data was 20 percentage points higher among students with low socio-economic background than among students with high socio-economic background. Consequently, this analysis does a better job of assessing measurement error among high socio-economic background students than low socio-economic background students. Second, more students accurately indicate their parents' education than their parents' occupation. Overall, between 52% (Germany) and 86% (Turkey) of students with complete data correctly report their parents' education. Between 33% (Korea) and 99% (Bulgaria) of students with complete data correctly report their parents' occupation.² While these numbers suggest large measurement error in some countries (e.g., for parental occupation in Korea) and small measurement error in others (e.g., for parental occupation in Bulgaria), the analysis can not assess whether, or the degree to which, this disparity leads to student movement across socio-economic background tertiles. Finally, socio-economically disadvantaged students are no more or less accurate in their reports of parental occupation and education than students with a more advantaged socio-economic background. With respect to parental occupational status, socio-economically disadvantaged students have the highest rate of perfect agreement in eight countries. Socio-economically advantaged student have the highest rate in six countries and students with a middle socio-economic background index have the highest rate in one country. With respect to parental educational attainment, socio-economically disadvantaged students have the highest rate of agreement in six countries and socio-economically advantaged students have the highest rate in the other nine countries.

Socio-economic background-matched sample of resilient students and disadvantaged low achievers

Results presented in Chapter 2 indicate that resilient students and disadvantaged low achievers differ with respect to their average socio-economic background. Results presented in Chapter 3 reveal significant differences in approaches to learning and hours spent and courses taken between resilient students and disadvantaged low achievers. There is a concern that these differences across the two groups of students could be an artefact of underlying differences across the two groups in terms of average socio-economic background. Each resilient student was therefore matched on socio-economic background to two disadvantaged low achievers who are the same gender to check for potential bias introduced by differences in the socio-economic background means of resilient and disadvantaged low achievers. Each disadvantaged low achiever can be a match for more than one resilient student. The analysis then re-estimated the difference-in-means tests on the three variables: *i*) general interest in science, *ii*) self-concept and *iii*) time spent in regular science lessons.

Results suggest that findings reported in Chapter 3 are robust to group mean differences in socio-economic background (see Table A4.3). For all three variables, there is only a handful of countries where the group mean differences between disadvantaged low achievers and resilient students change substantially compared to the group means from the full sample and when they do, the change in mean differences is small – usually no greater than an increase/decrease of 10 percentage points or 10% of a standard deviation. There are no patterns across the three variables with respect to which group means increased or decreased. Additionally in only a few countries did the disadvantaged low achievers-resilient group mean differences lose or gain statistical significance in the matched sample compared to the full sample. Changes in the significance of group mean differences are reported below:

General interest in science: The estimate for one country gains significance while the others remain unchanged.

Science self-concept: The estimate in one country gains significance while the difference in another loses significance.

Time spent learning science in regular science lessons: Across the three categories – no time, up to four hours and more than four hours each week – a total of five estimates are no longer significant and one gains significance.



Alternative definitions

As previous analyses of PISA data have revealed, the relationship between socio-economic background and achievement is non-linear (OECD, 2007). There is a possibility that non-linearities may be driving the identification of resilient students and thus findings presented in the report. For example, if the cut-points are just above a kink point in some countries and just below a kink point in other countries, the across-country differences in the size of the student groups could be driven primarily by the location of these kink points. The results could be problematic if they are an artefact of these kink points. The purpose of this robustness check is not to determine the location of these kink points, but rather to determine how robust the findings are to an alternative definition of resilience.

The alternative definition analysed keeps the socio-economic background cut-point for disadvantaged students (*i.e.* those with values in the bottom third of their country's distribution) but applies a more conservative set of cut-points for science achievement. Low achievers are now those students with scores below the 30th percentile while high achievers have to have scores above the 70th percentile. This analysis re-estimated the difference-in-means tests for the same three variables as are used in the matched sample robustness check: *i*) general interest in science, *ii*) self-concept and *iii*) time spent in regular science lessons.

The results show that Chapter 3 findings are robust to more conservative definitions of low and high achievers (see Table A.4). The estimates of disadvantaged low achievers-resilient group mean differences using the alternative definition are usually within 5 percentage points or 10% of a standard deviation unit of the original estimate. The group mean estimates for resilient students drove these changes as the group mean estimates for disadvantaged low achievers changed very little (*i.e.* less than one one-hundredth). Differences between the original results and those derived from the alternative definition are larger for the science self-concept variable suggesting greater sensitivity to the cut-points used in the student group identification procedure. There is little change with respect to which disadvantaged low achievers-resilient group mean differences are significant though more self-concept estimates changed significance than changed in the other variables; specifically:

General interest in science: No estimates lost significance, in one country.

Science self-concept: The estimates in two countries lost significance.

Time spent learning science in school in regular lessons: Across the three categories – no time, up to four hours and more than four hours each week – there were practically no changes of significance.

DESCRIPTION OF VARIABLES ANALYSED IN THE REPORT

The report focuses on disadvantaged students and factors affecting their performance. In the report, several student and school characteristics are related to student science scores. These characteristics are measured through indices constructed from student responses or responses provided by school principals in the background questionnaires accompanying the student cognitive test. This section describes questions used to create indices and gives details on how they were constructed. Student-level indices describing approaches to learning, hours spent and courses taken and school-level indices summarising school characteristics are described separately.

Student approaches to learning

This report uses seven distinct indices reflecting student approaches to learning. The indices were scaled with IRT models using student questionnaire items and were standardised to have mean 0 and standard deviation 1 on average in OECD countries, weighting countries equally. Details on scaling and estimates of indices reliability are given in Chapter 16 of the PISA 2006 Technical Report (OECD, 2009). Information on

background questionnaire questions from which indices were constructed is provided below. The motivation for using these indices and their interpretation is discussed in the main text of the report.

General interest in science. Students reported how much interest they have in learning about eight science topics: physics, chemistry, the biology of plants, human biology, astronomy, geology, ways scientists design experiments and what is required for scientific explanations. Students provided responses on the ordinal scale using the following categories: “High interest”, “Medium interest”, “Low interest” and “No interest”. The IRT model was then used to estimate an index, which is called INTSCIE in the PISA dataset. Higher values of this index correspond with higher interest in science topics.

Box A5.1. General interest in science

Q21 – How much interest do you have in learning about the following <broad science> topics?

(Please tick only one box in each row)

	High interest	Medium interest	Low interest	No interest
a) Topics in physics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Topics in chemistry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The biology of plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Human biology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Topics in astronomy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Topics in geology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Ways scientists design experiments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) What is required for scientific explanations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Instrumental motivation to learn science. Students reported on how much they agree with five statements describing the importance and usefulness of science learning to them, for example, “I study school science because I know it is useful for me” (all statements are given in the box below). The IRT model was then used to construct an index summarising these responses, which is named INSTSCIE in the PISA dataset. Higher values of this index correspond with higher instrumental motivation to learn science.

Box A5.2. Instrumental motivation to learn science

Q35 – How much do you agree with the statements below?

(Please tick only one box in each row)

	Strongly agree	Agree	Disagree	Strongly disagree
a) Making an effort in my <school science> subject(s) is worth it because this will help me in the work I want to do later on	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) What I learn in my <school science> subject(s) is important for me because I need this for what I want to study later on	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) I study <school science> because I know it is useful for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Studying my <school science> subject(s) is worthwhile for me because what I learn will improve my career prospects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) I will learn many things in my <school science> subject(s) that will help me get a job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Participation in science-related activities. Students reported on how often they are involved in activities related to science. More precisely, students indicated how often they watch TV programmes about science, borrow or buy books about science, visit web sites about science, listen to radio programmes about advances in science, read magazines or science articles in newspapers and attend a science club. Students responded using four categories: “Very often”, “Regularly”, “Sometimes” and “Never or hardly ever”. These responses were then used to estimate the index using the IRT model. The index is called SCIEACT in the PISA dataset. Higher values of this index correspond with higher participation in science-related activities.

Box A5.3. Participation in science-related activities

Q19 – How often do you do these things?

(Please tick only one box in each row)

	Very often	Regularly	Sometimes	Never or hardly ever
a) Watch TV programmes about <broad science>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Borrow or buy books on <broad science> topics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Visit web sites about <broad science> topics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Listen to radio programmes about advances in <broad science>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Read <broad science> magazines or science articles in newspapers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Attend a <science club>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Self-efficacy. Students assessed how easy it would be for them to perform different science-related tasks. Eight tasks were listed in the question and students assessed them using four categories: “I could do it easily”, “I could do this with a bit of effort”, “I would struggle to do this on my own” and “I couldn’t do this”. The tasks included describing the role of antibiotics in the treatment of disease and interpreting the scientific information provided in the labelling of food items. Exact wording of the eight tasks and the associated question is provided below. Based on these responses an index was constructed using the IRT model. The index is named SCIEEFF in the PISA dataset. Higher values of this index reflect higher student confidence in performing science-related tasks.



Box A5.4. Self-efficacy

Q17 – How easy do you think it would be for you to perform the following tasks on your own?

(Please tick only one box in each row)

	I could do this easily	I could do this with a bit of effort	I would struggle to do this on my own	I couldn't do this
a) Recognise the science question that underlies a newspaper report on a health issue	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
b) Explain why earthquakes occur more frequently in some areas than in others	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
c) Describe the role of antibiotics in the treatment of disease	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
d) Identify the science question associated with the disposal of garbage	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
e) Predict how changes to an environment will affect the survival of certain species	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
f) Interpret the scientific information provided on the labelling of food items	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
g) Discuss how new evidence can lead you to change your understanding about the possibility of life on Mars	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
h) Identify the better of two explanations for the formation of acid rain	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

Self-concept. Students assessed how difficult it is for them to learn science. They were asked how much they agree with six statements including “I learn science topics quickly” and “I can easily understand new ideas in school science”. Responses were given using four categories: “Strongly agree”, “Agree”, “Disagree” and “Strongly disagree”. Exact wording of the question and the possible responses is provided below. The scale was estimated using the IRT model and named SCSCIE in the PISA dataset. Higher values of this index indicate higher self-concept in science.

Box A5.5. Self-concept

Q37 – How much do you agree with the statements below?

The following question asks about your experience in learning <school science> topics.

(Please tick only one box in each row)

	Strongly agree	Agree	Disagree	Strongly disagree
a) Learning advanced <school science> topics would be easy for me	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
b) I can usually give good answers to <test questions> on <school science> topics	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
c) I learn <school science> topics quickly	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
d) <School science> topics are easy for me	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
e) When I am being taught <school science>, I can understand the concepts very well	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
f) I can easily understand new ideas in <school science>	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄



School preparation for science careers. Students gave their perception of the usefulness of schooling as preparation for science-related careers. Four statements were assessed by students using four possible responses: “Strongly agree”, “Agree”, “Disagree” and “Strongly disagree”. Exact wording of the question including the four statements is provided below. The responses were inverted and scaled using the IRT model so that higher values of this index indicate higher levels of agreement with usefulness of schooling as preparation for science-related careers. This index is called CARPREP in the PISA dataset.

Box A5.6. School preparation for science careers

Q27 – How much do you agree with the statements below?

(Please tick only one box in each row)

	Strongly agree	Agree	Disagree	Strongly disagree
a) The subjects available at my school provide students with the basic skills and knowledge for a <science-related career>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The <school science> subjects at my school provide students with the basic skills and knowledge for many different careers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The subjects I study provide me with the basic skills and knowledge for a <science-related career>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) My teachers equip me with the basic skills and knowledge I need for a <science-related career>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Information on science-related careers. Students reported their perceptions of how informed they believed themselves to be about science-related careers. More precisely, students assessed how informed they were about four different topics using four response categories: “Very well informed”, “Fairly informed”, “Not well informed” and “Not informed at all”. Exact wording of the question including the four topics is provided below. Responses were inverted and scaled using the IRT model so higher values of this index correspond with students believing they have better information about science-related careers. The index is called CARINFO in the PISA dataset.

Box A5.7. Information on science-related careers

Q28 – How informed are you about these topics?

(Please tick only one box in each row)

	Very well informed	Fairly informed	Not well informed	Not informed at all
a) <Science-related careers> that are available in the job market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Where to find information about <science-related careers>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) The steps students need to take if they want a <science-related career>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Employers or companies that hire people to work in <science-related careers>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Hours spent and courses taken to learn science

The report uses three measures to describe hours spent and courses taken to learn science. These measures focus on science, because in 2006 PISA focused on this domain. The variables on courses tackle attendance and number of course. The time variable measures the amount of time spent learning science at school through regular lessons.

Attendance in compulsory science courses at school

Students reported whether they attended compulsory science courses this year or last year. Four different courses were listed in the question, *i.e.* general science, biology, physics and chemistry, and students reported whether these courses were taken last year or this year by ticking one of two options: “yes” and “no”. Two distinct variables were constructed from these responses. The index of student attendance at a compulsory course in general science is an indicator variable, *i.e.* it only takes two values at the student level, either 0 or 1. The index takes the value of 1 if the student reports having taken a compulsory course in general science this year or last year. The second measure is the number of compulsory science courses the student reports taking over the two year period (this year or last) regardless of whether the courses were general science or on a specific science topic. As four courses were listed and students were asked about the last two years, the values of the index run from zero to a maximum of eight courses attended. The exact wording of the question is given in Box A.8 below. In the international PISA dataset, the variables used to construct this measure were ST33Q11, ST33Q12, ST33Q31, ST33Q32, ST33Q51, ST33Q52, ST33Q71 and ST33Q72.

There are two issues worth remembering when interpreting results using these variables. For students who responded to at least one category, missing responses were recoded to zero (that is, they were regarded as not attending courses for which they had not ticked a response). This means that a response was coded as missing only if a student did not tick any of the compulsory science courses this or last year. This approach holds when missing responses were given by students who only made an effort to give answers when these were positive, a plausible assumption. Otherwise, a student attending a physics course who ticked “yes” for physics, but did not make an effort to tick “no” for other courses, would have been coded as not having attended a single course. In any case, the recoding of missing values to zero mainly related to responses provided for general science courses. One can plausibly expect that students who attended specific science courses did not attend the general science courses, so a missing response for the latter can be plausibly coded as zero. While different interpretations are possible, these changes affected less than 5% of students in the case of general science courses and less than 0.1% for specific science courses. These changes also have negligible impact on the values of these variables, changing the average of students taking general science courses by no more than 2% and usually by less than 1% in most countries. Thus, the recoding of missing responses to zero allowed the sample size to be maintained while not changing values of the analysed variables in an important way.

The second issue is related to recoding of the attendance variables after data collection. In some countries, student responses were replaced by one value in the PISA datasets. This is the case in countries where all students are taking general science courses, or the opposite, none of them have this possibility. For these countries, the indicator of taking a compulsory general science course is 0 or 1 for all students. In this situation, the variable was not related to performance as there is no variation within a country. For some countries, the values for specific science courses were also recoded to one value. In these countries, all students attend courses in physics, biology or chemistry, because that is required by the curriculum, or they do not attend any of them. Countries like Ireland, Korea, Norway and Poland have no variation in the number of compulsory courses taken in biology, physics and chemistry and the only variation in the overall index is because of variability in the indicator of general science courses. While these issues are reflected in the means and variation of these indicators by country, they had no impact on the analysis presented in the report which concentrates on within-country differences. In other words, indices that take one value for all students in the country were not related to performance. That is reflected by a letter “v” in the result tables.



Box A5.8. Attendance in compulsory science courses at school

Q33 – Did you or do you take any of the courses listed below?

◁Instructions for students who do not study science▷

(Please tick as many boxes as apply in each row)

	Last year		This year	
	Yes	No	Yes	No
a) A compulsory ◁general science course▷	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) A compulsory biology course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) A compulsory physics course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) A compulsory chemistry course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Number of regular science learning hours

Students were asked to report their science learning time. In this report the number of hours spent in regular science lessons was analysed. Students denoted their learning time by ticking one out of five possible categories: “No time”, “Less than 2 hours a week”, “2 or more but less than 4 hours a week”, “4 or more but less than 6 hours a week” and “6 or more hours a week”. These responses were recoded to 0, 1, 3, 5 and 6, respectively, creating an index with the actual number of hours spent in regular science lessons. As a robustness check other recoding schemes were also tried, producing almost identical results. The exact wording of the question is given in the box below. In the international PISA dataset, the variables used to construct this measure was ST31Q01.

Box A5.9. Number of regular science learning hours

Q31 – How much time do you typically spend per week studying the following subjects?

For each subject, please indicate separately:

- ◊ the time spent attending regular lessons at your school;
- ◊ the time spent attending out-of-school-time lessons (at school, at home or somewhere else);
- ◊ the time spent studying or doing homework by yourself.

◁An hour here refers to 60 minutes, not to a class period▷

(Please tick only one box in each row)

	No time	Less than 2 hours a week	2 or more but less than 4 hours a week	4 or more but less than 6 hours a week	6 or more hours a week
a) Regular lessons in ◁school science▷ at my school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Learning environment at school

All variables focusing on the learning environment that students experience at school are the product of the answers school principals gave in the school questionnaire. These variables cover a wide range of issues, such as the management and funding of the school, admittance policies, and the quality and use of school resources to promote science learning. Detailed definitions of each of these variables follow.

Private school. School principals were asked to report whether their school was a private or a public organisation. The PISA school questionnaire defined as private those schools that are managed directly or indirectly by a non-governmental organisation such as a church, a trade union, a business or another private institution. Public schools on the other hand are managed directly or indirectly by a public education authority, a government agency, or a governing board appointed by government or elected by public franchise. Exact wording of the question is provided in the box below. The variable analysed in the report



was coded as 1 for students in private schools and 0 for students in public schools. In the international PISA dataset, the variables used to construct this measure was SC02Q01.

Box A5.10. **Public and private schools**

Q2 – Is your school a public or a private school?

(Please tick only one box)

A public school (This is a school managed directly or indirectly by a public education authority, government agency, or governing board appointed by government or elected by public franchise.)	<input type="checkbox"/>
A private school (This is a school managed directly or indirectly by a non-government organisation; e.g. a church, trade union, business, or other private institution.)	<input type="checkbox"/>

School competition

The PISA school questionnaire gathered information on the schooling options available to parents when choosing a school for their children and the amount of competition between schools. School principals were asked to report the presence of other schools in the area that compete with their school for students. Exact wording of the question is provided in the box below. The indicator of school competition was coded as 1 if school principals reported that there was at least another school in the area competing with their school for students and 0 otherwise. In the international PISA dataset, the variables used to construct this measure was SC18Q01.

Box A5.11. **School competition**

Q18 – We are interested in the options parents have when choosing a school for their children. Which of the following statements best describes the schooling available to students in your location?

(Please tick only one box)

There are two or more other schools in this area that compete for our students	<input type="checkbox"/>
There is one other school in this area that competes for our students	<input type="checkbox"/>
There are no other schools in this area that compete for our students	<input type="checkbox"/>

Academic selection in admission policies

School principals reported whether their school considered students' academic records when deciding on their admission to the school. Exact wording of the question is provided in the box below. The indicator for the presence of academic selection in admission policies was coded as 1 if school principals reported that students' academic records were considered as a prerequisite or a high priority in admission decisions and as 0 when school principals reported that academic records were either not considered or considered but were not a high priority factor. In the international PISA dataset, the variables used to construct this measure was SC19Q02.



Box A5.12. Academic selection in student admission policies

Q19 – How much consideration is given to the following factors when students are admitted to your school?

(Please tick one box in each row)

	Prerequisite	High priority	Considered	Not considered
a) Residence in a particular area	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
b) Student's academic record (including placement tests)	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
c) Recommendation of feeder schools	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
d) Parents' endorsement of the instructional or religious philosophy of the school	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
e) Student's need or desire for a special programme	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
f) Attendance of other family members at the school (past or present)	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

School activities to promote science learning

School principals were asked to report which activities that promote students' learning of science occurred at their school. Possible activities include: science clubs, science fairs, science competitions, extracurricular science projects and excursions and field trips. Responses on whether the school provided such activities were used to calculate an index of the availability of activities to promote science learning at the school level, using the IRT model. Exact wording of the question is provided in the box below. Higher values on this index reflect higher levels of school activities in promoting science learning. This index is called SCIPROM in the PISA dataset.

Box A5.13. School activities to promote science learning

Q20 – Is your school involved in any of the following activities to promote engagement with science among students in <national modal grade for 15-year-olds>?

(Please tick one box in each row)

	Yes	No
a) Science clubs	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂
b) Science fairs	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂
c) Science competitions	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂
d) Extracurricular science projects (including research)	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂
e) Excursions and field trips	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂

School's educational resources

School principals were asked to report the extent to which they perceived that instruction at their school was hindered by the following seven factors: *i*) shortage or inadequacy of science laboratory equipment, *ii*) shortage or inadequacy of instructional materials, *iii*) shortage or inadequacy of computers for instruction, *iv*) lack or inadequacy of internet connectivity, *v*) shortage or inadequacy of computer software for instruction, *vi*) shortage or inadequacy of library materials and *vii*) shortage or inadequacy of audio-visual resources. Exact wording of the question is provided in the box below. The IRT model

was used to construct from these responses an index representing the school's educational resources. The items were inverted before scaling and higher values on this index indicate better quality of educational resources. This index is named SCMATEDU in the PISA dataset.

Box A5.14. School's educational resources

Q14 – Is your school's capacity to provide instruction hindered by any of the following?

(Please tick one box in each row)

	Not at all	Very little	To some extent	A lot
a) A lack of qualified science teachers	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
b) A lack of qualified mathematics teachers	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
c) A lack of qualified <test language> teachers	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
d) A lack of qualified teachers of other subjects	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
e) A lack of laboratory technicians	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
f) A lack of other support personnel	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
g) Shortage or inadequacy of science laboratory equipment	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
h) Shortage or inadequacy of instructional materials (e.g. textbooks)	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
i) Shortage or inadequacy of computers for instruction	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
j) Lack or inadequacy of Internet connectivity	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
k) Shortage or inadequacy of computer software for instruction	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
l) Shortage or inadequacy of library materials	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄
m) Shortage or inadequacy of audio-visual resources	<input type="checkbox"/> ₁	<input type="checkbox"/> ₂	<input type="checkbox"/> ₃	<input type="checkbox"/> ₄

REGRESSION ANALYSES

The background model

The report analyses associations between approaches to learning, hours spent on learning, number of courses taken, and school characteristics to the probability of becoming resilient (in Chapter 3) or to student science performance (in Chapter 4). These relationships were analysed using regression models, namely, logit regression in Chapter 3 and linear regression in Chapter 4. Interpretation of results depends on the background variables included in the regression model which should reflect important student and school characteristics that cannot be easily changed through additional school efforts or educational policy. Results from logit regressions in Chapter 3 and linear regressions in Chapter 4 suggest that the variables included in the background regression models analysed in the report reflect important characteristics of students and schools, explaining large part of the variance in student performance which can not be affected by policy. Nevertheless, relationships between student and school characteristics and performance presented in the context of this report should not be considered causal. Rather they paint a picture of overall associations between student and school characteristics on the one hand and student performance on the other.

Analyses reported in the report are based on a common set of background variables that are well-known correlates of student performance and reflect student or schools characteristics. Similar sets of background variables were used in previous PISA studies including *PISA 2006 Science Competencies For Tomorrow's World*, OECD (2007a), for example, see Chapter 5 on multilevel modelling, and several thematic reports



arising from PISA 2006 data. Among individual characteristics, the background model includes student gender (coded as 1 for females and 0 for males), an indicator of students with an immigrant background (1 for those students, 0 for others) and an indicator for students who speak at home a language that is different from the language of the test (1 for those speaking different language at home, 0 for those who speak the same language). A set of indicators for the grade in which students are currently enrolled is added to each regression to enable consideration of differences in average performance across grades. The grade indicator for the modal grade in a country's PISA sample was omitted, creating a baseline category, so the coefficients for other indicators represent the difference in average performance in the grade they represent and the modal grade. These coefficients cannot be compared across countries because different baseline categories were used for different countries, but accounting for differences in student performance between grades was needed to limit the confounding impact on the analysed associations of different sampling designs or grade composition. Finally, the index of student socio-economic background was added to each regression. This is usually the most important control variable since it reflects differences in parental background and resources students can access at home.

Chapter 3 uses logistic regression models adjusting for various background variables and uses the results to assess the importance of different factors in determining the likelihood that disadvantaged students will exhibit academic resilience. The first model does not account for any student characteristics. The second model accounts for all student background characteristics (gender, immigrant background, language spoken, grade). The third model accounts for student background characteristics and school mean socio-economic background (school level mean of the socio-economic background index). In Chapter 4, all regressions control for students' individual socio-economic background as well as for the mean socio-economic background of a school students attend and its squared term to take account of possible non-linearities. Finally, a dummy variable indicating disadvantaged students (the lowest tertile of the socio-economic background distribution in each country) was added to the background model in regressions developed in Chapter 4. The interaction between the "disadvantaged student" indicator and indices used to characterise student approaches to learning and school characteristics identifies potential differences between disadvantaged and non-disadvantaged students in the association between such indices and performance.

Estimated coefficients for the background model developed for analyses conducted in Chapter 3 are presented in Table A.7, while those developed in the context of Chapter 4 are presented in Table A.8. Results presented in Table A.7 suggest that background characteristics, including socio-economic background and mean school socio-economic background, are not significantly related to the probability of being resilient in some countries. This finding is not surprising, since Chapter 3 employs data solely on disadvantaged students and therefore differences across students and schools in terms of socio-economic background are much smaller than they are in the full sample. Background variables are far more strongly related to student performance in results presented in Table A.8, where student socio-economic background and its school mean are generally associated with performance in all countries. Indicators for gender, immigrant background and language spoken at home are statistically significant in many countries. The student grade indicators are also usually significant and positive for higher grades confirming the expectation that students in higher grades typically outperform students who attend lower grades.

Imputation of missing data

The PISA index of economic, social and cultural status is a crucial variable in the report. For this reason, students with missing information on this index were excluded from the analysis. Fortunately, the number of students with no information on the socio-economic background index is very small in most PISA 2006 participating countries (see Table A.9 for information on the share of students with missing socio-economic background information by country). In line with other reports based on PISA data that rely heavily on the



use of the socio-economic background index, Qatar was excluded from all analyses because of reliability problems with the socio-economic background index in this country. On average approximately 1% of students in OECD countries had no socio-economic background information (the country with the largest number of missing values in terms of socio-economic background was Germany - 4%).

For other variables analysed in the report, missing data were handled using a variety of approaches chosen depending on the nature of the variable and the type of analysis being developed. For all variables used in the background model, the report adopted the simple approach of imputing missing data with school means (or country level means if no school mean was available) of the same variables. For variables which have only integer values (including 0/1 dummy indicators), the imputed means were rounded to the closest integer. Subsequently, a dummy variable for each of the background factors was constructed to denote observations with imputed values and was included as part of the background model. This way missing information for immigrant background, language spoken at home and enrolled grade were imputed. For gender, only four cases in the whole PISA sample had missing information and these were arbitrary replaced by a value of 0.

While in theory this simple imputation approach could give biased regression results, it is unlikely that it is the case for this report. First of all, only a small number of observations had missing values. In addition, as a robustness check, multiple imputation techniques were used to examine whether the use of computationally demanding but theoretically more valid approaches would lead to different conclusions. No meaningful difference in estimates was found when comparing estimates obtained using no imputation (casewise deletion), a mean-dummy approach imputation and multiple imputation. Consequently, the mean-dummy imputation approach was adopted since it is not computationally demanding, it maintains sample size unaltered and it yields results that are comparable to the ones obtained with other approaches.

Missing information was imputed for background characteristics only, not for student and school indices that are the focus of this report. That was done to preserve the original relationship between these indicators and performance. Table A.10 highlights that very few students have missing information on these indices (between 0% and 2% on average across OECD countries) with only two noticeable exceptions. On average as many as 6% of students have missing information on the indicators for *general interest in science* and *self-concept* and in some countries, the share of students with no information on these indices is relatively high (see Table A.10). The greater the share of students with missing information in a country is, the greater care should be taken in interpreting results since estimates may not properly represent relationships in the population to the extent that students with missing information and students with all information are not homogeneous.

Imputation of missing data for student indices was needed for the combined model presented in Chapter 3 and for models used in Chapter 4. In these models several indices are simultaneously introduced in the same regression, which exacerbates the problem of missing information and severely reduces the sample size. A mean-dummy imputation approach was consequently adopted in the estimation of these models: missing information on each index was replaced by the relevant school mean (or country mean whenever the school mean could not be computed) and a dummy variable indicating observations for which information was imputed was included in the combined model.

Details on the logistic model applied in Chapter 3

Logistic regression models presented in result tables for Chapter 3 were used to answer the following question: which factors are associated with the likelihood that a disadvantaged student will beat the odds? The dependent or outcome variable in these models is an indicator that takes value 1 when disadvantaged students are high performers in their countries (top third) in the PISA science assessment and value 0



when disadvantaged students are not high performers. Logistic regression models were estimated on all disadvantaged students – *i.e.* a third of the entire PISA student sample – since the question they aim to answer is whether particular approaches to learning are associated with the likelihood that disadvantaged students will be high performers in science. Missing data were imputed for background variables and for indices analysed in the combined model using the methods described above.

For each factor three models are presented: the first model represents the base model with no background variables included. The second model introduces individual level background variables while the third model introduces a further background variable at the school level: the mean socio-economic background of students sampled in PISA that attend the same school as the respondent (represented by mean socio-economic background). The mean school value of the socio-economic background index was calculated on the whole sample, including non-disadvantaged students if such students were present in a school.

For each model, Tables 3.1c to 3.15c present the odds ratios associated with a one unit increase in a particular factor and standard errors from the underlying logistic regression model. Odds ratios over one indicate that higher values of the factor analysed are associated with a greater likelihood that a disadvantaged student will be resilient, while odds ratios below one are suggestive of a negative relationship between the factor and resilience. By comparing estimates of the relationship between different factors and academic resilience obtained in the base, individual level and school level models, the chapter examines whether the relationship between approaches to learning and resilience is (partially) explained by differences in individual characteristics and the schools which students attend. Box A.15 describes in greater detail the logistic regression model framework and how results can be interpreted.

Box A5.15. **Understanding logistic regression and interpreting odds ratios**

Multiple linear regression is appropriate when outcome variables are continuous, as in the case of the measure of science achievement used in PISA. However, when the outcome variable is dichotomous, such as whether or not a student is resilient, a variant of multiple regression, called logistic regression, is appropriate. Logistic regression is also a useful policy device since it allows estimation of the probability that a certain outcome will occur (for example, that a disadvantaged student will be resilient) as a function of various characteristics of the student, such as age, gender, or family income, or characteristics of the school, such as mean socio-economic background. Because coefficients estimated within the logistic regression framework are not easily interpretable, the chapter reports odds ratios.

The logistic regression model presented in equation (1) below represents the extended model predicting the likelihood that a disadvantaged student i attending school j will beat the odds and earn a science test score in the top third of all scores within his/her country.

$$(1) \Pr(\text{resilient} = 1)_{ij} = \frac{1}{1 + \exp(-z_{ij})}, \text{ where } z_{ij} = X_{ij}\beta + \alpha\bar{S}_j$$

The model predicts a student's probability of being resilient $\Pr(\text{resilient} = 1)_{ij}$ as a function of a matrix of student characteristics and approaches to learning (X_{ij}), and the mean socio-economic background at the school level (\bar{S}_j). By accounting for mean socio-economic background at the school level, models account for the effect of school characteristics on the probability a disadvantaged student will demonstrate resilience.

The odds of an event occurring is the ratio of the likelihood of that event occurring to the likelihood



of that event not occurring and in the context of this report the event is “disadvantaged student beats the odds”. If a student has an 80% chance of being resilient, then the odds of being resilient are $[0.80 / (1-0.8)]$, which is 4.0 while an event with odds of 1.0 has an equal chance of occurring or not occurring. An odds ratio is simply the ratio of the odds for two different sets of circumstances. For example, the odds of an event for female and male students could be assessed and the ratio of the odds could be calculated. Odds ratios are interpreted in a fashion similar to multiple regression coefficients: they denote the ratio of the odds of an event occurring as a consequence of a one-unit change in the independent variable, compared to what it was previously, given all other independent variables in the model are held constant.

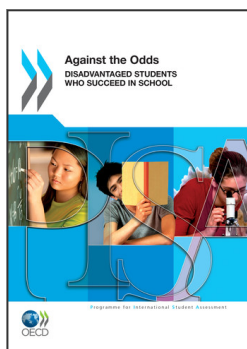
Source: Adapted from Box 4.1, OECD, 2003b, pp. 36-7.

Details on the linear regression applied in Chapter 4

Chapter 4 uses linear regression to estimate average associations between performance and student approaches to learning, number of hours and courses taken, and learning environment at school. In addition, this chapter discusses the difference in these associations between disadvantaged and non-disadvantaged students. Regressions were estimated country by country for all students with non-missing values on the socio-economic background index, accounting for background characteristics as discussed above. Results for average associations for all students were estimated by adding the policy indices to the background model. Results for differences in the strength of associations across disadvantaged and non-disadvantaged students were estimated by adding an interaction term – the dummy variable denoting disadvantaged students times the index of interest – to the regression model employed to estimate average effects. In other words, in this regression model the slope coefficient of key indices was allowed to differ for disadvantaged and non-disadvantaged students. The coefficient for the interaction term represents the difference in the association between disadvantaged and non-disadvantaged students. Regression models were estimated using all five plausible values for student performance and accounting for the complex survey design of the PISA study by using balanced repeated replicate (BRR) weights. Thus, these results are representative for populations of 15-year-old students in each country.

Notes

1. Here the average of the absolute value of the differences is calculated.
2. The measure of agreement between the student and parent responses about parental education is positively inflated. This is because of differences in how the question was asked of students and parents. Students were given the full range of ISCED levels (1 through 6), but parents were only given levels 3A to 6. Thus, all parents who have education below level 3A are grouped together in one category on the parent survey. Consequently, the analysis cannot pick up disagreement between students and parents among these levels. For example, consider a case where the student indicates their parent has a level 2 education but in fact the parent has a level 3B education. Due to the structure of the parent survey, the analysis cannot pick up on this disagreement.



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