

IMPACT OF DEMOGRAPHIC TRENDS ON EDUCATION PROVISION

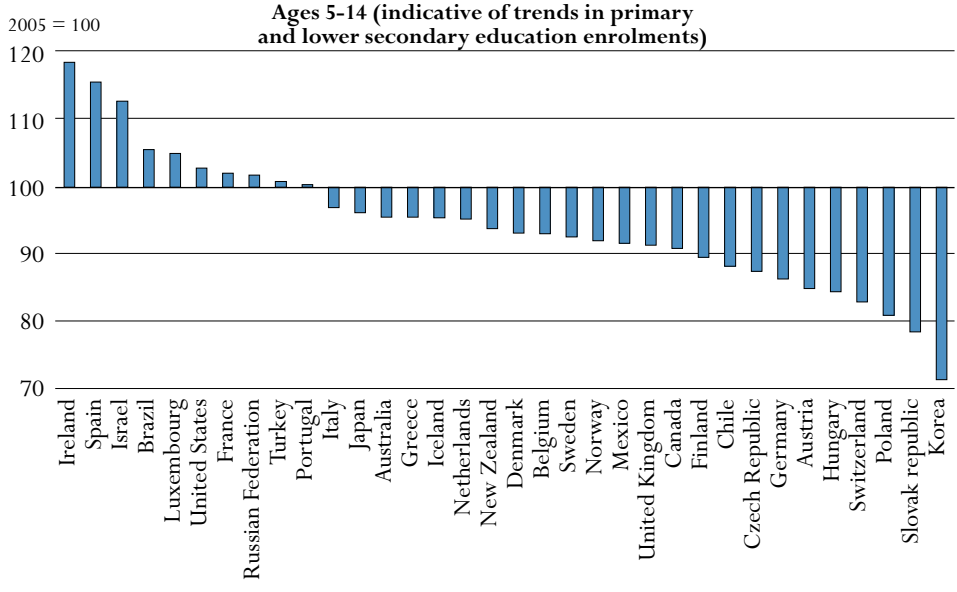
This indicator examines the trends in population numbers over the next ten years and illustrates the impact that these population trends can have on the size of the student population and the corresponding provision of educational services in countries.

Key results

Chart A11.1. Expected demographic changes within the youth population aged 5-14, over the next decade (2005-2015)

The chart shows the projected change between 2005 and 2015 in the population aged 5-14, broadly corresponding to the age of students in primary and lower secondary education, between 2005 and 2015

In 23 of the 30 OECD countries as well as in the partner country Chile, the size of the student population in compulsory schooling is set to decline over the next ten years with significant implications for the allocation of resources and the organisation of schooling in countries. This trend is most dramatic in Korea where the population aged 5-14 years is projected to decline by 29%.



Countries are ranked in descending order of the change in the size of the 5- to-14-year-old population. Source: OECD Table A11.1. See Annex 3 for notes (www.oecd.org/edu/eq2006).

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Other highlights of this indicator

- Sharp downward trends of 30% or more are projected in the population aged 15-to-19 years, broadly corresponding to upper secondary school age, in the Czech Republic, Poland and the Slovak Republic and in the partner country the Russian Federation, with likely impacts on the numbers graduating from upper secondary education and therefore on the pool of students entering tertiary education.
- In some countries, the population decline in the school age population has occurred earlier, and ten years from now will be impacting on the adult population and correspondingly to the flow of new graduates and highly qualified people in the population. For instance, in Spain, the population aged 20-to-29 years is set to decline by 34% over the next ten years.
- Taken together, the population trends over the next ten years present both opportunities and challenges to countries for resourcing education services.

Policy context

The number of young people in the population influences both the rate of renewal of labour force qualifications and the amount of resources and organisational effort which a country must invest in its education system. Other things being equal, countries with larger proportions of young people in the population must allocate a larger proportion of their national income to initial education and training than those with smaller youth populations but similar participation rates (see also Indicator B2).

Projections of the relative size of the school-age population help to predict changes in the number of students and resources needed. However, these predictions have to be interpreted with caution. At the lowest level of education enrolment rates are close to 100% (see Indicator C1) and the number of students closely follows demographic changes. This is not the case in upper secondary and higher education.

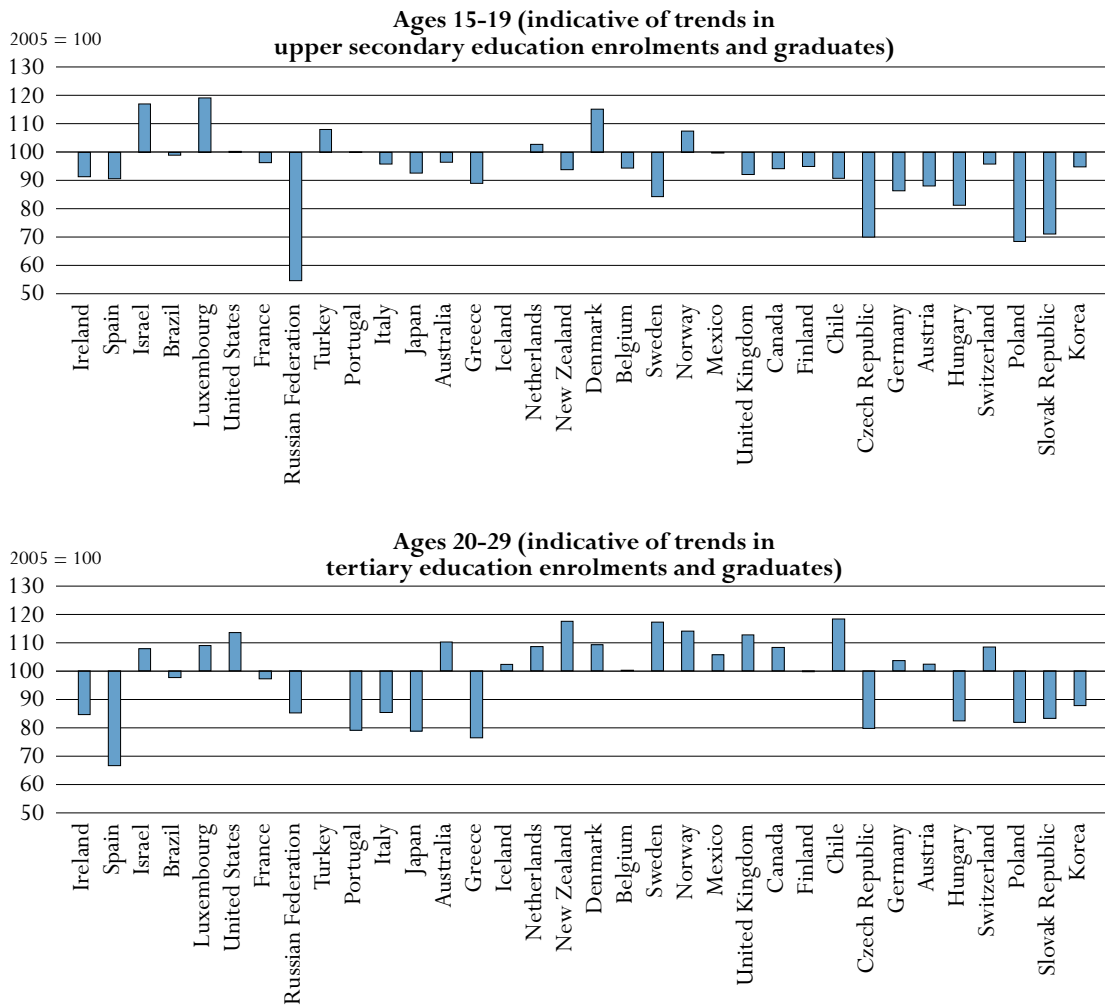
Evidence and explanations

The size of the population aged 5-to-14 years, broadly equivalent to the population of compulsory age schooling, is set to decline in 23 of the 30 OECD countries and in the partner country Chile over the next ten years. These trends can have significant implications for the organisation and resourcing of the educational services, presenting difficult management challenges such as surplus capacity in schools, school reorganisation and even school closures. Countries where these challenges appear to be greatest over the next decade are Poland and the Slovak Republic where student numbers in primary and lower secondary education can be expected to fall by around 20% and even more so in Korea where the population is set to decline by almost 30% (Chart A11.1).

Ireland and Spain, however, present notable exceptions to this trend. In both of these countries, the decline in numbers of the young school-age population, which had been a feature of their demography, has now been reversed and the population of compulsory school age is expected to increase by 19 and 16% respectively over the next decade.

For the population aged 15-to-19 years, broadly corresponding to the ages of the upper secondary school population, the trends are similarly downward overall but it is evident that countries are at different stages in their demographic cycles. The Czech Republic, Poland and the Slovak Republic and the partner country the Russian Federation face the largest reductions in the population corresponding to upper secondary education over the next ten year with reductions of around 30% or more in each case. Without corresponding increases in school participation and graduation rates at this level (see Indicators C1 and A2 for current levels), this can have a significant impact on the numbers graduating from upper secondary education and correspondingly the numbers eligible for entry to tertiary education (Chart A11.2).

Among 20-to-29 year olds, the age group broadly corresponding to tertiary education, there is a more mixed picture of population trends, although overall the projection is for a decline in population numbers of 3%. Demographic decline is particularly evident in Spain, where the population aged 20-to-29 years is projected to reduce by some 34% over the next ten years. Again, unless there are corresponding increases in participation rates in tertiary education (see Indicators C1 and C2 for current levels), this trend can be expected to result in a significant reduction in the flow of new graduates and highly qualified people in the population. Countries

Chart A11.2. Expected demographic changes within the youth population aged 15-19 and 20-29, over the next decade (2005-2015)

Countries are ranked in descending order of the change in the size of the 5- to-14-year-old population (see Chart A11.1). Source: OECD Table A11.1. See Annex 3 for notes (www.oecd.org/edu/eag2006).

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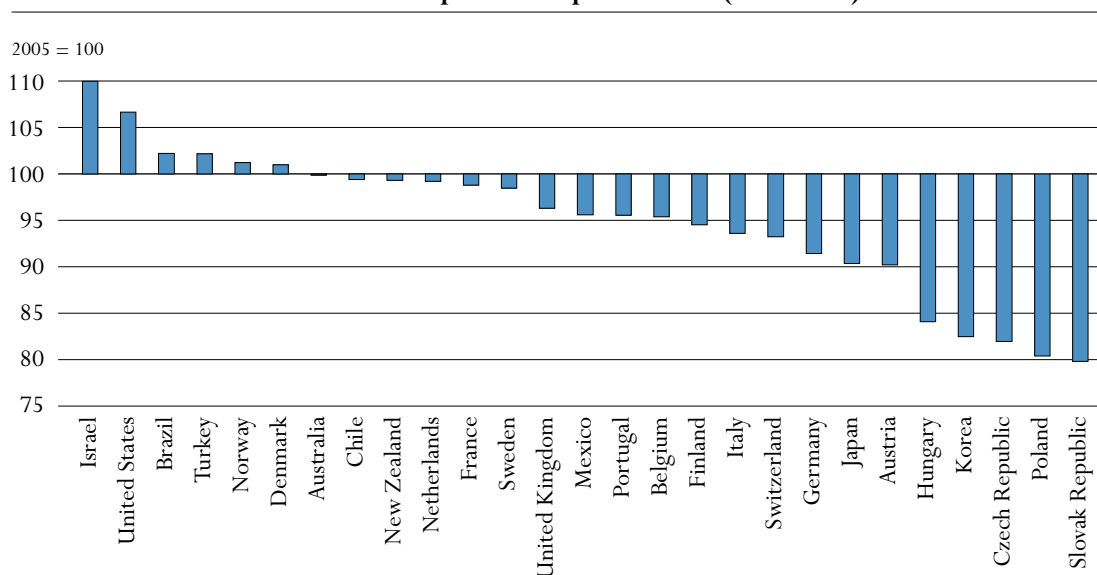
facing similar but less severe trends are Czech Republic, Greece, Japan and Portugal where the population decline in the age group corresponding to tertiary study is projected to fall by 20% or more (Chart A11.2).

In contrast, increases are projected in the population aged 20-to-29 years in 15 OECD countries as well as in the partner countries Chile and Israel, with the most notable increases expected in Chile (18%), New Zealand (17%) and Sweden (17%). For these countries, assuming participation rates in tertiary education remain at least at their current levels, the flow of highly qualified manpower might be expected to increase. However, such increases could place the financing of tertiary education under some additional pressure.

Demographic changes and their follow through to student numbers have obvious implications for the funding of education services. Chart A11.3 shows the estimated impact of demographic trends on total expenditure on educational institutions over the next decade. The estimates assume that participation rates and rates of expenditure per student remain at their current levels. This may or may not be a likely scenario for some countries given other factors that may change over this period, but these estimates can helpfully illustrate the funding and other policy choices that countries may face. Under these assumptions, the population trends over the next ten years would imply a reduction in the level of educational expenditure in all but four OECD countries as well as in the partner country Chile, arguably providing more opportunity to increase participation rates or expenditure per student in these countries. The population trends would imply the greatest opportunity for this in Czech Republic, Hungary, Korea, Poland and the Slovak Republic.

In contrast, the population projections for the United States indicate relatively strong growth over the next decade and if these feed through to similar increases in student numbers, the United States may face funding pressures accordingly.

Chart A11.3. Estimated impact of demographic trends on total expenditure on educational institutions over the next decade, assuming current participation rates and rates of expenditure per student (2005–2015)



Countries are ranked in descending order of the projected change in total expenditure on educational institutions between 2005 and 2015.

Source: OECD Table A11.1. See Annex 3 for notes (www.oecd.org/edu/eag2006).

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Definitions and methodologies

The population projections are taken from the UN Population Database. The changes in the sizes of the respective populations over the period 2005 to 2015 are expressed as percentages relative to the size of the population in 2005 (index = 100). The statistics cover residents in the country, regardless of citizenship and of educational or labour market status. It is possible that nationally available population projections do not exactly match those in the UN Population Database.

The estimates of the projected change in the level of total expenditure on educational institutions between 2005 and 2015 are derived from a weighted average of the projected change in student numbers by level, weighted by expenditure by level. The projected change in student numbers is estimated from the projected population changes as follows: 0-to-4-year-olds for pre-primary, 5-to-14-year-olds for primary and lower secondary, 15-to-19-year-olds for upper secondary and 20-to-29-year-olds for tertiary education. The proportions of expenditure by level used in the calculation are derived from Table B2.1c which shows expenditure by level as a percentage of GDP.

Thus, the projected change in expenditure assumes current participation rates and current rates of expenditure per student.

Table A11.1

Demographic trends between 2005 and 2015 and indicative impact on educational expenditure, student enrolments and graduate numbers

	Change in the size of the population 2005-2015 (2005=100)						Illustrative impact of demographic change between 2005 and 2015			
	Age group						Estimated ¹ percentage change in the level of total expenditure on educational institutions between 2005 and 2015	Estimated ² percentage change in enrolments in primary and lower secondary education between 2005 and 2015	Estimated ³ percentage change in the number graduates from upper secondary education between 2005 and 2015	Estimated ⁴ percentage change in the numbers of new tertiary graduates between 2005 and 2015
	0-4	5-14	15-19	20-29	30+	All persons				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
OECD countries										
Australia	107	96	97	110	116	110	0	-4	-3	10
Austria	93	85	88	102	105	101	-10	-15	-12	2
Belgium	94	93	94	100	104	101	-5	-7	-6	0
Canada	102	91	94	108	114	109	m	-9	-6	8
Czech Republic	97	88	70	80	108	99	-18	-12	-30	-20
Denmark	91	93	115	109	103	102	1	-7	15	9
Finland	101	90	95	100	106	102	-5	-10	-5	0
France	95	102	96	97	106	103	-1	2	-4	-3
Germany	99	86	86	104	102	100	-9	-14	-14	4
Greece	94	96	89	76	109	101	m	-4	-11	-24
Hungary	91	85	81	82	105	97	-16	-15	-19	-18
Iceland	95	95	100	102	115	108	m	-5	0	2
Ireland	104	119	91	85	123	113	m	19	-9	-15
Italy	87	97	96	85	103	100	-6	-3	-4	-15
Japan	93	96	93	79	105	100	-10	-4	-7	-21
Korea	90	71	95	88	116	103	-18	-29	-5	-12
Luxembourg	103	105	119	109	115	113	m	5	19	9
Mexico	91	92	100	106	132	111	-4	-8	0	6
Netherlands	88	95	103	109	105	103	-1	-5	3	9
New Zealand	97	94	94	117	111	107	-1	-6	-6	17
Norway	97	92	108	114	106	105	1	-8	8	14
Poland	101	81	69	82	111	99	-20	-19	-31	-18
Portugal	93	100	100	79	110	103	-4	0	0	-21
Slovak Republic	97	79	71	83	113	100	-20	-21	-29	-17
Spain	99	116	91	66	111	103	m	16	-9	-34
Sweden	106	93	84	117	104	103	-2	-7	-16	17
Switzerland	93	83	96	108	104	101	-7	-17	-4	8
Turkey	97	101	108	100	128	113	2	1	8	0
United Kingdom	100	91	92	113	105	103	-4	-9	-8	13
United States	105	103	100	113	111	109	7	3	0	13
OECD average	97	94	94	97	110	104	-6	-6	-6	-3
Partner countries										
Brazil	97	106	99	98	127	112	2	6	-1	-2
Chile	102	88	91	118	120	110	-1	-12	-9	18
Israel	100	113	117	108	124	117	11	13	17	8
Russian Federation	104	102	55	85	102	95	m	2	-45	-15

1. Trends in expenditures follow projections of population as follows: 0-to-4 year olds for pre-primary, 5- to-14 for primary and lower secondary, 15-to-19 for upper secondary, 20-to-29 for tertiary education. They assume current relative rates of expenditure per student by level of education and current participation rates.

2. Trends in enrolments in primary and secondary education follow projections of the population aged 5-to-14.

3. Trends in the number of upper secondary graduates follow projections of the population aged 15-to-19 and assume current graduation rates.

4. Trends in the number of new tertiary graduates follow projections of the population aged 20-to-29 and assume current graduation rates.

Source: OECD. See Annex 3 for notes (www.oecd.org/edu/eag2006).

Please refer to the Reader's Guide for information concerning the symbols replacing missing data

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TABLE OF CONTENTS

		Name of the indicator in the 2005 edition
Foreword	3	
Editorial	13	
Introduction	19	
Reader's Guide	23	
CHAPTER A THE OUTPUT OF EDUCATIONAL INSTITUTIONS AND THE IMPACT OF LEARNING	27	
Indicator A1 Educational attainment of the adult population	28	A1
Table A1.1a Educational attainment: adult population (2004)	37	
Table A1.2a Population that has attained at least upper secondary education (2004)	38	
Table A1.3a Population that has attained tertiary education (2004)	39	
Table A1.4 Distribution of population aged 35-to-64 with tertiary type 5A/6 qualifications by country (2004 and projected to 2014)	40	
Table A1.5 Educational attainment expressed in average number of years in formal education (2004)	41	
Indicator A2 Current upper secondary graduation rates	42	A2
Table A2.1 Upper secondary graduation rates (2004)	48	
Table A2.2 Post-secondary non-tertiary graduation rates (2004)	49	
Indicator A3 Current tertiary graduation and survival rates	50	A3
Table A3.1 Tertiary graduation rates (2000, 2004)	58	
Table A3.2 Survival rates in tertiary education (2004)	59	
Indicator A4 What 15-year-olds can do in mathematics	60	A4
Table A4.1 Percentage of students at each level of proficiency on the OECD PISA mathematics scale (2003)	70	
Table A4.2 Mean student performance and variation on different aspects of the OECD PISA mathematics scale (2003)	71	
Table A4.3 Mean score and variation in student performance on the OECD PISA mathematics scale (2003)	72	
Indicator A5 Between- and within-school variation in the mathematics performance of 15-year-olds	74	A6
Table A5.1 Between-school and within-school variance in student performance on the OECD PISA mathematics scale (2003)	80	
Indicator A6 Fifteen-year-old students who perform at the lowest levels of proficiency in mathematics (2003)	82	
Table A6.1 Odds ratios of the likelihood of students with the lowest socio-economic status to be lowest mathematics performers relative to the likelihood of students with the highest socio-economic status to be lowest mathematics performers (2003)	91	

Table A6.2	Reading performance of lowest mathematics performers (2003)	92	
Table A6.3	Mathematics performance of lowest reading performers (2003)	93	
Indicator A7	Institutional differentiation, socio-economic status and 15-year-old students' mathematics performance (2003)	94	
Table A7.1	Institutional differentiation, variance in mathematics performance, and economic, social and cultural status (ESCS), (2003)	102	
Indicator A8	Labour force participation by level of educational attainment	104	A8
Table A8.1a	Employment rates and educational attainment, by gender (2004)	112	
Table A8.2a	Unemployment rates and educational attainment, by gender (2004)	114	
Table A8.3a	Trends in employment rates, by educational attainment (1991-2004)	116	
Table A8.4a	Trends in unemployment rates, by educational attainment (1991-2004)	118	
Indicator A9	The returns to education: education and earnings	120	A9
Table A9.1a	Relative earnings of the population with income from employment (2004 or latest available year)	135	
Table A9.1b	Differences in earnings between females and males (2004 or latest available year)	137	
Table A9.2a	Trends in relative earnings: adult population (1997-2004)	138	
Table A9.3	Trends in differences in earnings between females and males (1997-2004)	139	
Table A9.4a	Distribution of the 25-to-64-year-old population, by level of earnings and educational attainment (2004 or latest available year)	141	
Table A9.4b	Distribution of the 25-to-64-year-old males by level of earnings and educational attainment (2004 or latest available year)	144	
Table A9.4c	Distribution of the 25-to-64-year-old females by level of earnings and educational attainment (2004 or latest available year)	147	
Table A9.5	Private internal rates of return for an individual obtaining an upper secondary or post-secondary non-tertiary education, ISCED 3/4 (2003)	150	
Table A9.6	Private internal rates of return for an individual obtaining a university-level degree, ISCED 5/6 (2003)	150	
Table A9.7	Public internal rates of return for an individual obtaining an upper secondary or post-secondary non-tertiary education, ISCED 3/4 (2003)	151	
Table A9.8	Public internal rates of return for an individual obtaining a university-level degree, ISCED 5/6 (2003)	151	

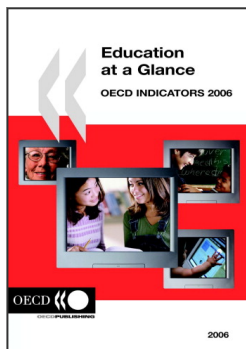
		Name of the indicator in the 2005 edition
Indicator A10	The returns to education: links between education, economic growth and social outcomes	152
		A10
Indicator A11	Impact of demographic trends on education provision	160
Table A11.1	Demographic trends between 2005 and 2015 and indicative impact on educational expenditure, student enrolments and graduate numbers	166
CHAPTER B	FINANCIAL AND HUMAN RESOURCES INVESTED IN EDUCATION	167
Indicator B1	Educational expenditure per student	170
		B1
Table B1.1a	Annual expenditure on educational institutions per student for all services (2003).....	186
Table B1.1b	Annual expenditure on educational institutions per student for all services, by type of programme (2003).....	187
Table B1.1c	Annual expenditure per student on core services, ancillary services and R&D (2003)	188
Table B1.2	Distribution of expenditure (as a percentage) on educational institutions compared to number of students enrolled at each level of education (2003)	189
Table B1.3a	Cumulative expenditure on educational institutions per student over the theoretical duration of primary and secondary studies (2003)	190
Table B1.3b	Cumulative expenditure on educational institutions per student over the average duration of tertiary studies (2003)	191
Table B1.4	Annual expenditure on educational institutions per student for all services relative to GDP per capita (2003)	192
Table B1.5	Change in expenditure on educational institutions for all services per student relative to different factors, by level of education (1995, 2003)	193
Indicator B2	Expenditure on educational institutions relative to Gross Domestic Product	194
		B2
Table B2.1a	Expenditure on educational institutions as a percentage of GDP, for all levels of education (1995, 2000, 2003)	205
Table B2.1b	Expenditure on educational institutions as a percentage of GDP, by level of education (1995, 2000, 2003).....	206
Table B2.1c	Expenditure on educational institutions as a percentage of GDP, by level of education (2003).....	207
Table B2.2	Change in expenditure on educational institutions (1995, 2003).....	208
Table B2.3	Change in expenditure on educational institutions (1995, 2000, 2001, 2002, 2003).....	209
Indicator B3	Public and private investment in educational institutions	210
		B3
Table B3.1	Relative proportions of public and private expenditure on educational institutions for all levels of education (1995, 2003).....	218

Table B3.2a	Relative proportions of public and private expenditure on educational institutions, as a percentage, by level of education (1995, 2003).....	219	
Table B3.2b	Relative proportions of public and private expenditure on educational institutions, as a percentage, for tertiary education (1995, 2003).....	220	
Table B3.3	Trends in relative proportions of public expenditure on educational institutions, for tertiary education (1995, 2000, 2001, 2002, 2003).....	221	
Indicator B4	Total public expenditure on education	222	B4
Table B4.1	Total public expenditure on education (1995, 2003).....	228	
Table B4.2	Distribution of total public expenditure on education (2003).....	229	
Indicator B5	Tuition fees charged by tertiary institutions and support for students and households through public subsidies	230	B5
Table B5.1	Estimated annual average tuition fees charged by tertiary-type A educational institutions (school year 2003-2004).....	240	
Table B5.2	Public subsidies for households and other private entities as a percentage of total public expenditure on education and GDP, for tertiary education (2003).....	242	
Indicator B6	Expenditure in institutions by service category and by resource category	244	B6
Table B6.1	Expenditure on institutions by service category as a percentage of GDP (2003).....	252	
Table B6.2	Expenditure on educational institutions by resource category and level of education (2003).....	253	
CHAPTER C	ACCESS TO EDUCATION, PARTICIPATION AND PROGRESSION	255	
Indicator C1	Enrolment in education from primary education to adult life	256	C1
Table C1.1	Education expectancy (2004).....	265	
Table C1.2	Enrolment rates, by age (2004).....	266	
Table C1.3	Transition characteristics from age 15 to 20, by level of education (2004).....	267	
Indicator C2	Participation in secondary and tertiary education	268	C2
Table C2.1	Entry rates into tertiary education and age distribution of new entrants (2004).....	277	
Table C2.2	Expected years in tertiary education and changes in tertiary enrolment (2004).....	278	
Table C2.3	Students in tertiary education by type of institution or mode of study (2004).....	279	
Table C2.4	Students in primary and secondary education by type of institution or mode of study (2004).....	280	
Table C2.5	Upper secondary enrolment patterns (2004).....	281	

		Name of the indicator in the 2005 edition
Indicator C3	Student mobility and foreign students in tertiary education	282
	Table C3.1 Student mobility and foreign students in tertiary education (2000, 2004)	303
	Table C3.2 Distribution of international and foreign students in tertiary education, by country of origin (2004)	304
	Table C3.3 Citizens studying abroad in tertiary education, by country of destination (2004)	308
	Table C3.4 Distribution of international and foreign students in tertiary education, by level and type of tertiary education (2004)	310
	Table C3.5 Distribution of international and foreign students in tertiary education, by field of education (2004)	311
	Table C3.6 Trends in the number of foreign students enrolled outside their country of origin (2000 to 2004)	312
	Table C3.7 Percentage of tertiary qualifications awarded to international and foreign students, by type of tertiary education (2004)	313
Indicator C4	Education and work status of the youth population	314
	Table C4.1a Expected years in education and not in education for 15-to-29-year-olds (2004)	323
	Table C4.2a Percentage of the youth population in education and not in education (2004)	325
	Table C4.3 Percentage of the cohort population not in education and unemployed (2004)	327
	Table C4.4a Trends in the percentage of the youth population in education and not in education (1995-2004)	329
Indicator C5	Participation in adult learning	334
	Table C5.1a Participation rate and expected number of hours in non-formal job-related education and training, by level of educational attainment (2003)	341
	Table C5.1b Expected number of hours in non-formal job-related education and training, by age group and labour force status (2003)	343
	Table C5.1c Expected number of hours in non-formal job-related education and training, by level of educational attainment (2003)	345
CHAPTER D	THE LEARNING ENVIRONMENT AND ORGANISATION OF SCHOOLS	347
Indicator D1	Total intended instruction time for students in primary and secondary education	348
	Table D1.1 Compulsory and intended instruction time in public institutions (2004)	356
	Table D1.2a Instruction time per subject as a percentage of total compulsory instruction time for 9-to-11-year-olds (2004)	357
	Table D1.2b Instruction time per subject as a percentage of total compulsory instruction time for 12-to-14-year-olds (2004)	358

Indicator D2	Class size and ratio of students to teaching staff	360	D2
Table D2.1	Average class size, by type of institution and level of education (2004).....	370	
Table D2.2	Ratio of students to teaching staff in educational institutions (2004).....	371	
Table D2.3	Ratio of students to teaching staff by type of institution (2004).....	372	
Indicator D3	Teachers' salaries	374	D3
Table D3.1	Teachers' salaries (2004).....	384	
Table D3.2a	Adjustments to base salary for teachers in public institutions (2004).....	386	
Table D3.2b	Adjustments to base salary for teachers in public institutions made by school principal (2004).....	388	
Table D3.2c	Adjustments to base salary for teachers in public institutions made by local or regional authority (2004).....	390	
Table D3.2d	Adjustments to base salary for teachers in public institutions made by the national authority (2004).....	392	
Table D3.3	Change in teachers' salaries (1996 and 2004).....	394	
Indicator D4	Teaching time and teachers' working time	396	D4
Table D4.1	Organisation of teachers' working time (2004).....	405	
Indicator D5	Access to and use of ICT	406	
Table D5.1	Various ICT resources in secondary schools and percentage of various types of computers in schools (2003).....	414	
Table D5.2	Percentage of students in secondary schools whose principals report that instruction is hindered by a shortage of ICT resources (2003).....	415	
Table D5.3	Percentage of 15-year-old students using computers at home, school or other places, by frequency of use (2003).....	417	
ANNEX 1	Characteristics of Educational Systems	419	
Table X1.1a	Typical graduation ages in upper secondary education.....	420	
Table X1.1b	Typical graduation ages in post-secondary non-tertiary education.....	421	
Table X1.1c	Typical graduation ages in tertiary education.....	422	
Table X1.2a	School year and financial year used for the calculation of indicators.....	423	
Table X1.2b	School year and financial year used for the calculation of indicators.....	424	
Table X1.3	Summary of completion requirements for upper secondary (ISCED 3) programmes.....	425	
ANNEX 2	Reference Statistics	429	
Table X2.1	Overview of the economic context using basic variables (reference period: calendar year 2003, 2003 current prices).....	430	
Table X2.2	Basic reference statistics (reference period: calendar year 2003, 2003 current prices).....	431	

	Name of the indicator in the 2005 edition
Table X2.3 Basic reference statistics (reference period: calendar year 1995, 1995 current prices).....	432
Table X2.4 Annual expenditure on educational institutions per student for all services (2003).....	433
Table X2.5 Annual expenditure on educational institutions per student for all services (2003).....	434
Table X2.6a Reference statistics used in the calculation of teachers' salaries, by level of education (1996, 2004).....	435
Table X2.6b Reference statistics used in the calculation of teachers' salaries (1996, 2003).....	437
Table X2.6c Teachers' salaries (2004).....	438
ANNEX 3 (Sources, Methods and Technical Notes).....	441
References.....	443
Contributors to this Publication.....	445
Related OECD Publications.....	449



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