

**ANNEX 3: SOURCES, METHODS AND  
TECHNICAL NOTES**

Chapter B: Financial and Human  
Resources Invested in Education

Education at a Glance 2014

**Description:** This document is intended to provide guidance as to the methodology used during the data collection for each Indicator, the references to the sources and the specific notes for each country.

**How to read this document:** Annex 3 is organised by chapters. Click on each link below in order to be redirected to the Indicator and the information related to it.

**Chapter B: Access to Education, Participation and Progression**

[Indicator B1: How much is spent per student?](#)

[Indicator B2: What proportion of national wealth is spent on education?](#)

[Indicator B3: How much public and private investment in education is there?](#)

[Indicator B4: What is the total public spending on education?](#)

[Indicator B5: How much do tertiary students pay and what public support do they receive?](#)

[Indicator B6: On what services and resources is education funding spent?](#)

[Indicator B7: What factors influence the level of expenditure on education?](#)

# Table 1: Specific notes by country in the different indicators

	B1			B2	B3	B4	B5	B6	B7
	<u>Coverage</u>	<u>Methodology</u>	<u>Interpretation</u>	<u>Coverage</u>	<u>Coverage</u>	<u>Coverage</u>	<u>Methodology</u>	<u>Coverage Sources</u>	<u>Methodology</u>
Australia	<u>AUS</u>		<u>AUS</u>	<u>AUS</u>	<u>AUS</u>	<u>AUS</u>	<u>AUS</u>	<u>AUS</u>	<u>AUS</u>
Austria	<u>AUT</u>	<u>AUT</u> <u>AUT2</u>	<u>AUT</u>						
Belgium			<u>BEL</u>	<u>BEL</u>	<u>BEL</u>		<u>BEL</u>		
Brazil			<u>BRA</u>						
Canada							<u>CAN</u>		
Chile			<u>CHL</u>	<u>CHL</u>					
Czech Republic				<u>CZE</u>			<u>CZE</u>		
Denmark	<u>DNK</u>			<u>DNK</u>	<u>DNK</u>	<u>DNK</u>	<u>DNK</u>	<u>DNK</u>	
Estonia	<u>EST</u>		<u>EST</u>						
Finland			<u>FIN</u>	<u>FIN</u>					
France	<u>FRA</u>	<u>FRA</u>		<u>FRA</u>			<u>FRA</u>		
Germany	<u>DEU</u>	<u>DEU</u> <u>DEU2</u>		<u>DEU</u>	<u>DEU</u>	<u>DEU</u>		<u>DEU</u>	
Greece		<u>GRC</u>		<u>GRC</u>					
Hungary	<u>HUN</u>	<u>HUN</u>		<u>HUN</u>	<u>HUN</u>		<u>HUN</u>	<u>HUN</u>	
Iceland		<u>ISL</u>			<u>ISL</u>				
Ireland			<u>IRL</u>	<u>IRL</u>			<u>IRL</u>	<u>IRL</u>	
Israel	<u>ISR</u>			<u>ISR</u>				<u>ISR</u> <u>ISR2</u>	
Italy		<u>ITA</u>							
Japan		<u>IPN</u>	<u>IPN</u>	<u>IPN</u>					
Korea	<u>KOR</u>	<u>KOR</u>							
Luxembourg	<u>LUX</u>								
Mexico	<u>MEX</u>			<u>MEX</u>					
Netherlands	<u>NLD</u>		<u>NLD</u>		<u>NLD</u>				
New Zealand	<u>NZL</u>				<u>NZL</u>				
Norway	<u>NOR</u>			<u>NOR</u>			<u>NOR</u> <u>NOR2</u>	<u>NOR</u>	<u>NOR</u>
Poland	<u>POL</u>			<u>POL</u>			<u>POL</u>		
Portugal	<u>PRT</u>			<u>PRT</u>					
Russian Federation	<u>RUS</u>			<u>RUS</u>					
Slovak Republic							<u>SVK</u>		
Slovenia	<u>SVN</u>	<u>SVN</u>							
Spain	<u>ESP</u>								
Sweden	<u>SWE</u>				<u>SWE</u>		<u>SWE</u> , <u>SWE2</u>	<u>SWE</u>	
Switzerland			<u>CHE</u>				<u>CHE</u>		
Turkey	<u>TUR</u>	<u>TUR</u>		<u>TUR</u>		<u>TUR</u>	<u>TUR</u>		
United Kingdom		<u>UKM</u>	<u>UKM</u>				<u>UKM</u>		
United States	<u>USA</u>								<u>USA</u>

## Chapter B: FINANCIAL AND HUMAN RESOURCES INVESTED IN EDUCATION

### Changes in the coverage of all indicators introduced in Education at a Glance 2014

**Australia:** Expenditure from the Building the Education Revolution (BER) economic stimulus package was beginning to wind down in 2011 and consequently there has been an overall drop in expenditure between 2010 and 2011 for primary and secondary institutions. In 2009 the Australian Government announced a \$16.2 billion BER spending program over four years to build or upgrade large scale infrastructure, such as libraries and halls in primary and secondary schools throughout Australia. The initiative was partially in response to the global recession and the Government's commitment to support jobs through the downturn in private spending. Public and private schools received valuable new capital spending, while employment in the building and construction industry was partly protected from the downturn. BER funding was sourced from the Commonwealth Government and directed through the state and territory governments.

**Norway:** Due to the extreme oil prices in 2010 and its implications for the GDP, the figures published in the publication can be significantly different if the mainland GDP or GDP deflator are used in Indicators B1, B2, B3 and B4 (and for trend indicators shown in these indicators). The tables published in Education at a Glance **are based on** mainland GDP and GDP deflator to better describe real changes in expenditure.

# INDICATOR B1: How much is spent per student?

See also notes on [Indicator B2](#). [Back to table](#)

## General notes

Expenditure reported in *Education at a Glance* are collected by source of funds, type of transaction, and level of education (Indicators B2, B3, B4 and B5) or by type of institutions (Indicators B1 and B6).

The number of students is adjusted to the financial year in the methodology to calculate expenditure per student.

## Methodology

### Reference period

Adjustments were made for countries in which the financial year and the school year do not coincide. In order to match the enrolment data with the financial year 2011, a weighted average of the enrolment data for the academic years 2010/11 and 2011/12 was calculated. The data were weighted in accordance with the proportion of each school year that fell within the financial year 2011 (see Annex 2).

### Estimation of expenditure per tertiary student over the duration of studies

Two alternative methods were employed to calculate the average duration of tertiary studies: the approximation formula and the chain method. For both methods, the result does not give the average duration needed for a student to graduate since all students participating in tertiary education are taken into account, including dropouts. Hence, the figure can be interpreted as the average length of time during which students stay in tertiary education until they either graduate or drop out. However, in the case of countries with low dropout rates (see Indicator A2), the result can serve as a good proxy for duration until graduation.

The estimates of cumulative expenditure on education over the average duration of tertiary studies were obtained by multiplying annual expenditure per student by an estimate of the average duration of tertiary studies.

Using the **approximation formula**, the latter estimate was approximated by the rate of turnover of the existing stock of enrolments, obtained from the ratio of flow data (entrants and leavers) to the corresponding numbers of students enrolled. The formula  $D = (S_{t-1} + S_t)/(Z_t + A_t)$  was used for this calculation, where  $S_t$  is the number of students enrolled at the end of year  $t$ ,  $S_{t-1}$  is the number of students at the beginning of year  $t$  (approximated by the number of students enrolled at the end of the preceding school year),  $Z_t$  is the number of students in their first year of study in year  $t$ , and  $A_t$  is the number of leavers in school year  $t$  (approximated by  $S_{t-1} + Z_t - S_t$ ). Full-time equivalents were used to estimate enrolments. The number of entrants to full-time programmes was used to estimate the inflow. All participants were included, even those who might not obtain a degree.

The estimate is based on a number of simplifying assumptions: first, it is assumed that transition rates are constant over time. Second, expenditure in the current reference year is assumed to be typical of the total duration of studies.

Using the **chain method**, the duration of study is defined as the sum of the probabilities, for each year of study, that a student who has entered tertiary education will still be enrolled in that year of study. The duration is therefore defined as:  $D = \sum_{i=1}^{10} q_i$ , where  $q_i$  is the probability that a student will reach the  $i$ -th year of

study, *i.e.* the proportion of individuals in the  $i$ -th year of study relative to those studying in the first year  $i-1$  years before. With the chain method all conditional probabilities are derived from data for two adjacent years, the reference year and the preceding year. Given the number of students  $s$  in year  $i$  of study in year  $t$  and the number of students in year  $i-1$  of study in year  $t-1$ , the transition rates can be calculated for each year of study as  $a_{i,t} = S_{i,t}/S_{i-1,t-1}$ . The transition rates give, for each year of study, the probability that a student in year  $i-1$  will continue studying in year  $i$ . The product of all transition rates 1 to  $i$  gives the probability, for year  $i$  of study that a student who started  $i-1$  years before will still be enrolled in year  $i$  of study. Finally, the sum of all conditional probabilities gives an estimate of the average duration of tertiary education. Expenditure in the current reference year is assumed to be typical of the total duration of studies. [Back to table](#)

## **Trend data collection (financial years 1995, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 and 2011)**

The trend data on expenditure were obtained by a special survey updated in 2012. OECD countries were asked to revise trend data for the financial years 1995, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 and 2011 according to the definitions and the coverage of the UOE 2012 data collection and then consistently with 2011 data.

All expenditure data, as well as the GDP for 1995, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010 and 2011 are adjusted to 2011 prices using the GDP price deflator. [Back to table](#)

## **Notes on specific countries**

### **Coverage**

See also notes on [Indicator B2](#).

**Australia:** As of *Education at a Glance 2012* the finance methodology was revised to include capital expenditure that was not captured in previous years. Comparisons with previous publications are inadvisable. Australian Bureau of Statistics Government Finance Statistics has been used wherever possible.

The 2011 reference year represents a break in the series for ISCED 0 reporting. For 2011, new data sources enabled the coverage of ISCED 0 data to be expanded to include preschool programmes delivered within long day care settings. These programmes are typically privately operated, however preschool programme fees are heavily subsidised by the Commonwealth Government. [Back to table](#)

**Austria:** Expenditure on R&D in the tertiary sector is partially excluded. Some expenditure by public institutions other than the Federal Ministry for Science, Research and Economy is excluded (social insurance bodies, chambers of trade and crafts, and federal funds – *Sozialversicherungsträger, Kammern, Bundesfonds*). [Back to table](#)

**Denmark:** Since *Education at a Glance 2011*, the change in public and private expenditure at the pre-primary level has resulted from a change in coverage. [Back to table](#)

**France:** From *Education at a Glance 2013*, departmental government expenditure (included in regional expenditure), the 2010 data contain a new "basis" of the departments account. It allows considering exhaustive expenditure of the departments whereas since the previous entire and detailed estimation it was calculated and updated with annual global variations. This overhaul for departments expenditure will be implemented at most each three years.

Payments paid by households to government dependent institutions for tuition fees, lodging and meals. (Rows H2 and H5b): besides, for 2010 data (*Education at a Glance 2013*), a new survey on tuition fees, and fees for lodging and meals paid by households to government dependent institutions has been implemented. It allows considering a better evaluation on households expenditure to government dependent institutions (tuition fees, lodging, meals). Previously, we use the results of the former survey (2002) updated each year with annual variations calculated with index prices to estimate these expenditures.

Since *Education at a Glance 2012* (2009 data), a new "basis" of the local account (towns and cities) has been built. It allows considering exhaustive expenditure of the towns and the cities whereas before it was calculated and updated just with annual variations. This overhaul of assessment for spending of towns and cities will be implemented at most each three years.

Since *Education at a Glance 2011* (2008 data), a new "basis" of the regional account has been built. It allows considering exhaustive expenditure of the regional government whereas before it was calculated and updated just with annual variations. This overhaul of assessment for regional spending will be implemented each three years.

Since *Education at a Glance 2010* (2007 data) the frame of the budget data which are collected by finances Ministry changed. This is due to the introduction of the LOLF ("*loi organique relative aux lois de finances*"). The comparability with the data transmitted in previous years has been impacted. This looks like as a new "basis" of account. The most important change related to the level of the social contributions (in particular the "imputed contributions") which were underestimated before. This fact leads to a higher level of the total compensation which is the biggest part of education expenditure. One other important change deals with the higher education expenditure: some research expenditure cannot be separated from the higher education expenditure. This also leads to a higher level of the education expenditure.

Since *Education at a Glance 2006*, research expenditure has been aligned with the DSTI data and now includes all R&D expenditure (higher education expenditure on R&D – HERD) without any exclusion.

Since *Education at a Glance 2004* (2003 data), the finance indicators include the following modifications:

- Change in the geographic area covered with the inclusion of overseas departments (*départements d'outre-mer* – DOM). Indicators for 2003 and following years refer to France as a whole and are therefore coherent with the area covered in national accounting aggregates (GDP, public spending, etc.). In trend data indicators, previous years are marked as “m” to ensure consistency across years.

- Change in the R&D spending areas covered so as to match the coverage of R&D spending on higher education used in the DSTI/OECD data collection (reference to the Frascati Manual).

- Update of the treatment methods used for information sources and of the statistical tools employed: in particular, overhaul of assessment techniques for certain types of spending, such as spending on payroll taxes, spending by local authorities (towns and cities, departments, regions) or spending by households.  
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**Germany:** Until 2008, programmes at *Berufsfachschulen* aimed at qualifying *Kindergarten* teachers and school-based vocational education for medical assistants, nurses, midwives or social assistants had been allocated to ISCED 3B while the respective programmes at health-sector schools, or *Fachschulen*, had been allocated to ISCED 5B. Now all these programmes, regardless of the type of school, are allocated to ISCED 5B.  
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**Israel:** Expenditure on R&D cannot be separated from total expenditure but is included in the UOE data collection.

Since *Education at a Glance 2009* all expenditure on ancillary services for upper secondary boarding schools are included. Compared to data published in *Education at a Glance 2008* and previously, expenditure on ancillary services at upper secondary levels of education for 2007 reference year increased a lot because of a better estimation of this expenditure. [Back to table](#)

**Korea:** Expenditure on some educational programmes provided by ministries other than the Ministry of Education is excluded (police college, polytechnic college, military academy, etc.). Since fiscal year 2010, “Edufine System”, which is the revised Korean financial data collection system, has been applied to elementary and secondary education. Therefore, the UOE financial data collection survey method has been modified. [Back to table](#)

**Luxembourg:** The small difference between general and vocational programmes (see also Indicator C1) is due to the fact that expenditure occurring during the time spent in class is included. All other expenditure (for example expenditure of private enterprises) is not included in the calculation so that the costs of vocational programmes (especially dual programmes) are underestimated.

Expenditure of central level of government (i.e. for development of curricula, psychological aid or academic/professional guidance, or part of transport services); have been attributed to public institutions only, even if student from private institutions benefit from part of these services. As a consequence, expenditure on private institutions is underestimated.

When the cost per student at primary level was calculated, the expenditure in 2011 on teachers’ salaries was taken into account. Nevertheless, the local level (*Communes*) expenditure concerned the reimbursement of amounts due for previous years. Real expenditure for 2011 does not change BUT in order to calculate the expenditure per student at the primary level, it is important not to take the reimbursements for previous years into account. [Back to table](#)

**Mexico:** Only public expenditure on separately funded or separately budgeted research is included.  
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**Netherlands:** Compared to data published in *Education at a Glance 2009*, there are large increases in student numbers and expenditure in private institutions at ISCED levels 2 and 5A/6. These variations result from the use of a new data source compared to previous years (labour force survey). [Back to table](#)

**New Zealand:** Compared to data published in *Education at a Glance 2010* and earlier, there have been some significant changes in expenditure per student. The majority of the increase at pre-primary level reflects a real increase due to the introduction of a new government policy in 2007 to provide free Early Childhood Education (ECE) for up to 20 hours a week for those aged 3 and over. Changes at other levels reflect, in part, real growth, and in part, changes in methodology. Improvements were made to the methods used to distribute expenditure across levels. Some items incorrectly excluded or allocated in previous returns were revised for this edition. Schools also shifted to International Financial reporting standards and this is the first year of reporting under these reporting standards. This affected the definition and scope of private expenditure. At post-secondary levels there were some moderate real increases in government expenditure, including increases in student support (loans and grants) and inflation-adjustments to subsidies and fees, as well as some volume growth due to the impacts of the recession. [Back to table](#)

**Norway:** Public spending on educational core services is included for all ISCED-levels as well as public spending on university research. Public spending on ancillary services is partly covered in tertiary education only. Public spending on private enterprises to cover the cost of apprenticeship training in ISCED3 is included (as public expenditures). Private spending covers tuition fees in ISCED 0 and ISCED 5 only. Expenditure data are adjusted to constant prices using the GDP Mainland price deflator. Due to the high impact of oil prices on the GDP deflator for Norway, the GDP deflator used for trend indicators on finance data is the Mainland GDP Deflator, so as to describe real changes in expenditure. 2008 expenditure on education are converted to equivalent USD using PPPs for GDP (and not the PPPs for GDP mainland, as these were not available). [Back to table](#)

**Poland:** Expenditure, particularly private expenditure, is underestimated. [Back to table](#)

**Portugal:** Compared to data published in *Education at a Glance 2010*, expenditure per student at tertiary level of education excluding R&D activities decreased significantly as the amount of R&D increased by 50% compared to last year.

Changes in expenditure for ISCED 5B programmes are mainly a result from methodological changes.

Since data published in *Education at a Glance 2008*, at the tertiary level, data from private institutions are reported, namely: i) expenditure with the teachers and other pedagogical, administrative and professional personnel; ii) expenditure of households (private expenditure) – payments to independent private institutions. However data from some of them, such as *Universidade Católica*, and the institutions belonging to *Fundação Minerva* and *Fundação Fernando Pessoa* are not included. [Back to table](#)

**Russian Federation:** Expenditure per student at the tertiary level of education is underestimated owing to missing private expenditure and because tuition fees are paid exclusively from private funds for about one-third of tertiary type-A and tertiary type-B students (see footnote in table B1.5).

The low value of R&D expenditure per student is explained by specific organisational structure of the research sector in the Russian Federation. The substantial part of research, especially theoretical ones, is carried out by the institutes of Academy of Science rather than in the higher education sector.

Compared to data published in *Education at a Glance 2010*, there are large variations in expenditure on educational institutions as a result of different factors: the economic crisis dramatically influenced the regional budget capacity and private companies' capabilities in expenditure on education; the population at typical ages of enrolment at secondary and tertiary levels decreased; the data for private expenditure on public institutions was included in standard statistical questionnaires for the second time in 2008 and improved compared to last year. However, the combination of variations balanced and did not result in dramatic changes in annual expenditure per student. [Back to table](#)

**Slovenia:** Since data published in *Education at a Glance 2013*, that is to say from financial year 2010 expenditure for/of basic education is divided (based on estimation) between expenditure for/of ISCED level 1 and expenditure for/of ISCED level 2. For previous years, all expenditure for basic education (primary and lower secondary together) was shown under lower secondary education. Expenditure per student in lower secondary education was thus expenditure per student in basic (primary and lower secondary) education.

Expenditure for upper secondary education also includes expenditure for units of short cycle higher vocational education (first short tertiary-type B programmes) organized in some upper secondary schools. Consequently expenditure per student for upper secondary education is slightly overestimated and expenditure per student for tertiary education is slightly underestimated. [Back to table](#)

**Spain:** Expenditure for retirement of personnel other than teachers in public institutions is not included. [Back to table](#)

**Sweden:** Expenditure on the day-care component (50% of the cost for children 3-5 years of age in integrated programmes is allocated to the education component) is excluded.

Some components of the cost estimates for post-secondary non tertiary education and tertiary-type B programmes are based on rough assumptions, which are likely to underestimate the total cost at these levels. [Back to table](#)

**Turkey:** Data on public expenditure includes central government expenditure only. Regional and local direct expenditure on educational institutions is not included. Transfers are also not included. In addition to public expenditure, for ISCED levels 0 to 3, household expenditure on education (which could not be reported in the previous years) is also included in the data for the financial year 2011. [Back to table](#)

**United States:** Funds for major federal R&D centres administered by universities are excluded. [Back to table](#)

**Estimation of the duration of tertiary education calculated using the chain method**

**Austria and Italy:** No distinction is made between part-time and full-time studies at the university level. However, for expenditure over the duration of studies the effect balances out, since reporting part-time students as full-time students, leads both to an underestimate of annual expenditure and to an overestimate of the duration of studies. [Back to table](#)

**Austria:** Estimates on the average duration in tertiary studies published in the 2010 edition of *Education at a Glance* were based on the approximation formula and therefore are not directly comparable with current results. Furthermore methodological changes in the calculation of new entrants also narrow comparability. [Back to table](#)

**France:** Panel data were used to estimate the average duration of tertiary studies. [Back to table](#)

**Germany:** The average duration of university studies calculated by the chain method does not include students in the 11th year of study or beyond in the denominator. As a consequence the calculated average duration and cost of university studies are about 7% too high. [Back to table](#)

**Greece:** The 5th year of tertiary-type B study includes the 6th year and beyond. The 7th year of tertiary-type A and advanced research programmes includes the 8th year and beyond. This leads to an underestimation of the duration. [Back to table](#)

**Hungary:** Per capita expenditure is estimated from the distribution of numbers of students at ISCED levels 1, 2, and 3 from a total expenditure at ISCED levels 1 to 3. [Back to table](#)

**Iceland:** Panel data were used to estimate average duration of tertiary studies. [Back to table](#)

**Japan:** Expenditure on specialised training colleges (general course), miscellaneous schools and educational administration are not allocated by level. [Back to table](#)

**Korea:** The maximum duration of tertiary-type B education is 3 years. The 6th and 8th years and beyond of university education are included in the 7th year of study. [Back to table](#)

**Slovenia:** Compared to data published in *Education at a Glance 2009*, the methodology to distribute expenditure between pre-primary and basic (primary + lower secondary) education has been improved and this results in changes in expenditure per student. [Back to table](#)

**Turkey:** From data published in *Education at a Glance 2014* (for the 2011 finance reference year), values are reported under lower secondary education, further to a methodological change. From the 2013 UOE data collection (2011 reference year), the 8 years of compulsory education (single structure education), which was reported under ISCED 1 in the previous data collections, is now separated as primary education (for grades 1-5) and lower secondary education (for grades 6-8). [Back to table](#)

**United Kingdom:** The chain method was amended slightly in order to use the available data. Average durations were calculated separately using the chain method for each of the main types of course at tertiary level. To take account of the fact that many students go on to take a further course after their initial course, these figures were then combined according to the numbers of students following each of the main paths at tertiary level. The total average durations shown for university and all tertiary levels are therefore weighted averages of the individual average durations of each type of course. Coverage excludes those studying in further education institutions; these account for less than 10% of all students at the tertiary level.

The apportionment of expenditure across levels of education is now based on a variable provided in the Treasury data source rather than a number of custom apportionments based on various assumptions.

Previous returns included a cost weighting to allocate a higher proportion of expenditure on secondary education to 'upper secondary' rather than 'lower secondary'. This cost weighting has not been applied in this return.

Where data from Scotland, Northern Ireland and Wales are missing, expenditure figures from England have been updated to match UK enrolment figures. Pupil numbers were also used previously for this updating, however the figures used were not taken from the previous years' enrolment figures. [Back to table](#)

### **Interpretation**

Changes in expenditure per student between *Education at a Glance* 2005 to 2014.

**Australia:** Expenditure from the Building the Education Revolution (BER) economic stimulus package was beginning to wind down in 2011 and consequently there has been an overall drop in expenditure between 2010 and 2011 for primary and secondary institutions. In 2009 the Australian Government announced a \$16.2 billion BER spending program over four years to build or upgrade large scale infrastructure, such as libraries and halls in primary and secondary schools throughout Australia. The initiative was partially in response to the global recession and the Government's commitment to support jobs through the downturn in private spending. Public and private schools received valuable new capital spending, while employment in the

building and construction industry was partly protected from the downturn. BER funding was sourced from the Commonwealth Government and directed through the state and territory governments. [Back to table](#)

**Austria:** Owing to different reporting standards between the UOE questionnaire and Austrian accounting systems, figures on expenditure per student as published in *Education at a Glance* differ considerably from expenditure per student as calculated and published in Austria. [Back to table](#)

**Brazil:** In the text of indicator B1, Brazil is included among the countries where expenditure did not keep up with the expansion of enrolment in tertiary education. However, Brazil's data includes only public expenditure (because private expenditure is missing) whereas most of the other countries have data available for private expenditure (see footnote in Table B1.5). Considering only public expenditure (as in Table B3.4), the difference in expenditure per student between these countries and Brazil will be smaller compared to the one shown in Indicator B1. [Back to table](#)

**Belgium:** Data on the German speaking Community are not included in the indicator. Data on independent private institutions are not integrated in the UOE data collection for both the Flemish Community and the French Community. [Back to table](#)

**Flemish Community of Belgium:** Data on average theoretical duration for lower and upper secondary education do not take into account ISCED 4 while in the expenditure data – on which the expenditure per student is based – ISCED 4 is included in the total expenditure for all secondary education. Data on independent private institutions are not integrated in the UOE data collection.

The information on 'not allocated by level' refers to part-time art education. The pupils enrolled in part-time art education are not included in the tables on student enrolment of the data collection (double counting with other programmes) which explains the difference in the two columns referring to 'not allocated by level' in Table B1.7. [Back to table](#)

**Chile:** An estimation of the expenditure of public schools based on data provided by municipalities was included for the first time in *Education at a Glance 2007*. This information was not available in previous years. An adjustment is now made from primary to upper secondary education. Because of this, comparison of 2007 and 2004 data shows a very small increase in the indicator for "primary to tertiary level" and a decline in some levels (secondary education especially). In *Education at a Glance 2007* a change was made in the methodology to classify the programmes offered at tertiary level into the ISCED level classification. This led to important changes in enrolments between tertiary-type B level on the one hand and, on the other hand, tertiary-type A level and advanced research programmes in the data for 2004 and 2005. [Back to table](#)

**Estonia:** Compared to data published in *Education at a Glance 2010* there is a significant increase in expenditure per student at pre-primary, primary and secondary levels of education. This results from the combination of a decrease in student numbers and a substantial increase in expenditure, especially at pre-primary level and in general programmes at primary and secondary levels of education. [Back to table](#)

**Ireland:** Compared to data published in *Education at a Glance 2010*, expenditure per student increased significantly, by about 15% at all levels of education combined and by nearly 30% at the tertiary level. At the tertiary level, apart from changes in the number of students (and PPPs), one half of this increase per student can be accounted for by increases in public funding for tertiary education, 32% accounted for by wider coverage of private expenditure and the remaining 18% accounted for by wider data coverage in public expenditure. [Back to table](#)

**Japan:** Since data were published in *Education at a Glance 2008*, calculation methods used for private expenditure were modified. Although trend indicators in *Education at a Glance 2011* are comparable since those are developed by modified data, indicators for private expenditure are not comparable with previous versions of *Education at a Glance*.

Previously national universities were positioned as a part of the government organization and thus classified as "public institutions". Since April 2004, national universities have been incorporated, given corporation status and autonomous management is ensured. However, some authority relating to important administrative matters remains with the Minister of Education, Culture, Sports, Science and Technology, such as the appointment of the president of each national university, approving medium-term plans, approving issues of university bonds, and dismissal of university directors who have voting rights on important items regarding the administration of the university. Therefore national university corporations are still classified as "public institutions". [Back to table](#)

**Switzerland:** Expenditure per student at the university level is very high. This is mainly due to the structure of the university system: a large number of universities in relation to the size of the country (partly due to the three language regions), the small size of some universities, a wide range of provision at each university, and relatively low student-to-teaching staff ratios. Furthermore, teachers' salaries at the university level are comparatively high. Advanced research programmes are included in tertiary education. In addition to this

Switzerland has a high level of R&D spending. Spending on education per student would be considerably lower if the R&D component were excluded. [Back to table](#)

**Netherlands:** Between 2000 and 2005 expenditure on educational institutions per student decreased in the Netherlands: expenditure did not keep up with expanding enrolments at this level, as R&D expenditure did not follow the increase in student enrolment. [Back to table](#)

**United Kingdom:** Compared to data published in *Education at a Glance 2009*, changes in the share of public and private funds at the pre-primary level reflect both improvements in the data capture/analysis and (more significant) the ongoing expansion of Government investment in pre-primary education/day care for young children.

For tertiary level of education, compared to data published in *Education at a Glance 2009*, there is a significant shift in the way the sector is funded with an increased emphasis on the use of tuition fees. There is a significant increase in household expenditure on tuition fees. From the 2006/07 academic year onwards the cap on annual tuition fees for domestic students was raised from £1 100 to £3 000. The significant increase in household expenditure reported is offset by the reduction in direct public expenditure. [Back to table](#)

# INDICATOR B2: What proportion of national wealth is spent on education?

## Methodology

The “domestic” approach (reference to GDP) is preferred to the “national” one (reference to GNP) in the calculation of Indicator B2 because it is consistent with other concepts used in education statistics and in the UOE data collection. Thus, educational programmes and providers and student mobility are considered in the UOE data collection from the domestic point of view. For example, funds from international agencies and other foreign sources are included in the educational expenditure requested (see the *OECD Handbook*, 4.6.2 and 4.6.3); the coverage of the statistics on enrolments or on the activities of education institutions is made on a domestic basis, *i.e.* the host country must report enrolments of foreign students and the educational activities of foreign institutions. However, by taking GNP instead of GDP as reference, expenditure as a percentage of GNP would be more than 5% higher or lower than expenditure as a percentage of GDP in Chile, the Czech Republic, Estonia and Hungary and would be more than 15% higher in Iceland, Ireland, Luxembourg and Norway (see Table 1).

Table 2: Differences between gross domestic product and gross national product (reference period: calendar year 2011, current prices)

	Gross Domestic Product	Gross National Product	% Change
<b>OECD</b>			
Australia	1,486,071	1,443,630	3
Austria	299,240	297,210	1
Belgium	369,259	372,696	-1
Canada	1,719,631	1,727,608	0
Chile	130,526,894	114,673,951	14
Czech Republic	3,823,401	3,565,877	7
Denmark	1,791,773	1,840,282	-3
Estonia	16,216	15,361	6
Finland	188,679	189,235	0
France	2,001,398	2,043,994	-2
Germany	2,609,900	2,668,920	-2
Greece	208,532	202,482	3
Hungary	27,635,435	26,183,669	6
Iceland	1,628,677	1,397,210	17
Ireland	162,600	131,947	23
Israel	923,900	908,357	2
Italy	1,580,410	1,570,545	1
Japan	470,623,200	485,985,900	-3
Korea	1,235,160,500	1,238,405,300	0
Luxembourg	41,730	28,717	45
Mexico	14,351,494	14,281,443	0
Netherlands	599,047	600,964	0
New Zealand	206,546	197,934	4
Norway	2,075,197	2,780,254	-25
Poland	1,528,127	1,464,795	4
Portugal	171,126	164,896	4
Slovak Republic	68,974	67,454	2

Slovenia	36,150	35,759	1
Spain	1,046,327	1,025,222	2
Sweden	3,480,543	3,558,727	-2
Switzerland	585,102	590,441	-1
Turkey	1,297,713	M	m
United Kingdom	1,536,937	1,557,475	-1
United States	15,533,800	15,848,300	-2
<b>Partners</b>			
Brazil	4,143,013	M	m
Russian Federation	55,799,573	44,830,693	3

Source: OECD Analytical Database, June 2014.

## **GDP data**

The theoretical framework underpinning the calculation of GDP has been provided for many years by the United Nations' publication, *A System of National Accounts*, which was released in 1968. An updated version was released in 1993 (commonly referred to as SNA93).

Statistics on educational expenditure relate to the financial year 2010. For countries in which GDP is not reported for the same reference period as data on educational funding, GDP is estimated as:  $w_{t-1} (GDP_{t-1}) + w_t (GDP_t)$ , where  $w_t$  and  $w_{t-1}$  are the weights for the respective portions of the two reference periods for GDP that fall within the educational financial year. Adjustments were made for **Australia**, **Japan**, the **United Kingdom** and the **United States** (see Annex 2). [Back to table](#)

**Norway:** Educational expenditures are reported as percent of Mainland GDP (excluding off-shore oil and international shipping). This is new from Education at a Glance 2011. Comparisons with earlier editions are inadvisable as the total GDP was used before 2011. [Back to table](#)

## ***Notes on specific countries***

### **Coverage**

**Australia:** As of *Education at a Glance 2012* the finance methodology was revised to include capital expenditure that was not captured in previous years. Comparisons with previous publications are inadvisable. For more information, see the notes on the coverage of all indicators.

Most of the Higher Education Contribution Scheme (HECS) payments made to universities are funded in the first instance by the government. In 2005 for example, of about AUD 2.3 billion in HECS charges paid to universities, only about AUD 396 million was paid up front by students. These students received a 20% subsidy (about AUD 99 million from the government), which was paid directly to universities on their behalf. Most of the balance represented HECS loans from the government paid directly to universities. In the indicator, the AUD 99 million in HECS subsidies for those who paid up front and the HECS loans are treated as transfers from the government. Subsequently, all of the AUD 2.3 billion in HECS is counted as private final expenditure on universities.

The contribution of households to funding educational institutions is also overstated by indicators B2 and B3 because the results are also affected by the inclusion of fees paid by a substantial numbers of foreign students (about AUD 2 billion), and the lack of recognition in the indicators of HECS interest subsidies and HECS debts that are never repaid.

The 2011 reference year represents a break in the series for ISCED 0 reporting. For 2011, new data sources enabled the coverage of ISCED 0 data to be expanded to include preschool programmes delivered within long day care settings. These programmes are typically privately operated, however preschool programme fees are heavily subsidised by the Commonwealth Government. [Back to table](#)

**Belgium:** Data on the German-speaking Community are not integrated into the data for Belgium in the 2013 UOE data collection.

In Table B2.3 private expenditure is underestimated since payments to independent private institutions are not available as they are not collected by the Ministry of Education. [Back to table](#)

**Chile:** R&D figures are preliminary. [Back to table](#)

**Czech Republic:** Data from the Ministries of Justice, Defence and Internal Affairs are not included. [Back to table](#)

**Denmark:** The allocation of expenditure on early childhood, primary and lower secondary education is estimated on the basis of the corresponding enrolments. Expenditure on pre-primary education includes some expenditure on day care. Day care activities are fully integrated into the school day and not carried out separately. It is debatable whether this expenditure should be classified as educational or not but **Sweden** and **Finland** exclude expenditure on similar programmes. **Sweden** excludes expenditure on the daycare component of similar programmes (50% of the cost for children 3-5 years of age in integrated programmes is allocated to the education component).

As a result of the revision of financial data, the data from 2002 and before are not directly comparable with the data from 2010. [Back to table](#)

**Finland:** Government transfers and payments to private entities, except financial aid to students, are excluded. [Back to table](#)

**France:** Since and including data published in *Education at a Glance 2006*, all expenditures included overseas departments (*départements d'outre mer*, DOM). Gross domestic product and total public expenditure were adjusted accordingly. [Back to table](#)

**Germany:** Expenditure for instruction by enterprises in the “so-called dual system” (*i.e.* programme that combines school- and work-based instruction) is included in this indicator and in B1.

Until 2008, programmes at *Berufsfachschulen* aimed at qualifying Kindergarten teachers and school-based vocational education for medical assistants, nurses, midwives or social assistants had been allocated to ISCED 3B while the respective programmes at health-sector schools, or *Fachschulen*, had been allocated to ISCED 5B. Now all these programmes, regardless of the type of school, are allocated to ISCED 5B. [Back to table](#)

**Greece:** Expenditure on early childhood education is included in expenditure on primary education. [Back to table](#)

**Hungary:** Data do not include the private expenditure of private educational institutions. [Back to table](#)

**Ireland:** Compared to data published in *Education at a Glance 2010*, expenditure on education as a percentage of GDP increased significantly. This results from the combination of a decrease in GDP (nominal decrease of 5% between 2007 and 2008), a better coverage of expenditure reported in the UOE data collection and an increase of public expenditure on education. [Back to table](#)

**Israel:** Scholarships and other grants to students include the gross amount of student loans owing to the lack of data on repayment of such loans.

Expenditure by non-profit institutions of own sources is not included.

Since 2007, data on depreciation is excluded from expenditure, in order to be in accordance with the OECD methodology. [Back to table](#)

**Japan:** Expenditure on specialised training colleges, “miscellaneous schools” and educational administration are not allocated by level. Free tuition fee at public high schools / High school enrollment support fund” have commenced in April 2010. Under these systems, tuition fees are not charged at public high schools. And students at private high schools receive fixed financial support corresponding to those at public schools for tuition payment. In a case of financial difficulty, students at private high schools receive more financial support depending on their situations. [Back to table](#)

**Mexico:** Since data published in *Education at a Glance 2008*, there has been a change of the basis year for the calculation of GDP in Mexico so it reflects a remarkable increase in this value for the year 2006. [Back to table](#)

**Poland:** 1995 data cover public expenditure only. [Back to table](#)

**Portugal:** Regional and local transfers to the private sector are not included. Local direct expenditure on educational institutions is not included. [Back to table](#)

**Russian Federation:** Since data published in *Education at a Glance 2008*, expenditure on education increased significantly. The reason is the increase in the rate of inflation (about 10%) and in purchasing power parities (about 15%). However, public expenditure on education as well as all public expenditure (46%) increased, and expenditure on educational institutions as a percentage of GDP remains at the same level. The increase in expenditure at ISCED levels 5/6 may be partially explained by the substantial increase in expenditure for R&D. [Back to table](#)

**Turkey:** Data on public expenditure includes central government expenditure only. Regional and local direct expenditure on educational institutions is not included. Transfers are also not included. In addition to public expenditure, for pre-primary to upper secondary levels of education (ISCED levels 0 to 3), household expenditure on education (which could not be reported in the previous years) is also included in the data for the financial year 2011` [Back to table](#)

# INDICATOR B3: How much public and private investment in education is there?

## Methodology

### **Calculation of the index in Indicator B3**

Tables B3.2a (columns 8 to 19), B3.2b (columns 8 to 19) and B3.2c (columns 8 to 19) show the changes in expenditure on educational institutions from public and private sources between 1995 and 2011. All expenditure reported was expressed in 2011 constant USD, adjusted to the 2011 price level using the GDP deflator (see Annex 2). The data on expenditure for 2000 to 2010 were obtained by a survey updated in 2014. [Back to table](#)

### **Notes on specific countries**

See notes on Indicators [B1](#) and [B2](#). [Back to table](#)

### **Coverage**

**Australia:** As of *Education at a Glance 2012* the finance methodology was revised to include capital expenditure that was not captured in previous years. Comparisons with previous publications are inadvisable. [Back to table](#)

**Belgium:** Tables B3.2b and B3.3 only include expenditure charged by institutions. As of 2004 data, the survey on private expenditure on educational institutions does not allow for a breakdown of private expenditure between that imposed by institutions and that not imposed by institutions. Therefore a large part of expenditure imposed by institutions is included in total private expenditure. The private expenditure taken into account in Tables B3.2b and B3.3 is therefore underestimated. [Back to table](#)

Private expenditure is underestimated since data on payments to independent private institutions are not collected/not available.

In the Flemish Community the distinction between private expenditure imposed by institutions and not imposed by institutions can be made. For Flanders the data are fully integrated. [Back to table](#)

**Denmark:** Compared to data published in *Education at a Glance 2011*, the change in the proportion of public - private expenditure results from a change in coverage. [Back to table](#)

**Germany:** Until 2008, programmes at *Berufsfachschulen* aimed at qualifying Kindergarten teachers and school-based vocational education for medical assistants, nurses, midwives or social assistants had been allocated to ISCED 3B while the respective programmes at health-sector schools, or *Fachschulen*, had been allocated to ISCED 5B. Now all these programmes, regardless of the type of school, are allocated to ISCED 5B. [Back to table](#)

**Hungary:** Compared to data published in previous edition of *Education at a Glance*, there have been some technical changes in the data collection relating to private institutions, which do not allow to compute these data the same way as before. This can result in data fluctuation in this transitional period. [Back to table](#)

**Iceland:** Compared to data published in *Education at a Glance 2010*, public expenditure on education as a percentage of total public expenditure decreased significantly because of a considerable increase in total public expenditure between 2007 and 2008. [Back to table](#)

**Japan:** Free tuition fee at public high schools / High school enrollment support fund" have commenced in April 2010. Under these systems, tuition fees are not charged at public high schools. And students at private high schools receive fixed financial support corresponding to those at public schools for tuition payment. In a case of financial difficulty, students at private high schools receive more financial support depending on their situations.

**Netherlands:** Compared to data published in *Education at a Glance 2013*, the relative share of public and private expenditure at the pre-primary level changed due to a methodological change. In 2010 expenditure on three-year-olds in integrated educational and child care programmes at the pre-primary level (ISCED 0) were reported for the first time. With the entry into force of legislation (Act OKE) on 1 August 2010, the ISCED 0 programmes in the Netherlands meet the requirements of international regulations relating to ISCED 0. The sequence is thus started in 2010 covering the expenditure over the last five months of the year. From 2011,

the expenditure covers an entire year. This difference in coverage resulted in a change between 2010 and 2011 in relative proportions of public and private expenditure on educational institutions for pre-primary education. [Back to table](#)

**New Zealand:** Compared to data published in *Education at a Glance 2009* and earlier, there has been a marked shift towards public funding at the pre-primary level of education. This was due to a major change in the funding regime for pre-primary education introduced in 2007. This change was designed to provide three and four year olds at qualifying institutions with free Early Childhood Education (ECE) up to 20 hours per week. This led to the marked increase in public funding and a corresponding decrease in private funding. [Back to table](#)

**Sweden:** in Table B3.2a, at the pre-primary level, Sweden has integrated education and childcare. All private costs are classified as referring to the childcare component. [Back to table](#)

# INDICATOR B4: What is the total public spending on education?

## Data on total public expenditure

The theoretical framework underpinning the calculation of total public expenditure has been provided for many years by the United Nations' publication *A System of National Accounts*, which was released in 1968. An updated version was released in 1993 (commonly referred to as SNA93). [Back to table](#)

## Notes on specific countries

### **Coverage**

Total public expenditure on all services, excluding education, includes the expenditure on debt servicing (*i.e.* interest payments) that is not included in public expenditure on education. The reason for this exclusion is that some countries cannot separate interest payment outlays for education from those for other services. This means that public expenditure on education as a percentage of total public expenditure may be underestimated in countries in which interest payments represent a large proportion of total public expenditure on all services.

See notes on [Indicator B2](#). [Back to table](#)

**Australia:** As of *Education at a Glance 2012*, the finance methodology revised to include capital expenditure that was not captured in previous years. Comparisons with previous publications are inadvisable. [Back to table](#)

**Denmark:** The drop in *public expenditure on education to total public spending* is explained by the huge increase in *total public spending* between 2007 and 2008 (5% increase). [Back to table](#)

**Germany:** Until 2008, programmes at *Berufsfachschulen* aimed at qualifying Kindergarten teachers and school-based vocational education for medical assistants, nurses, midwives or social assistants had been allocated to ISCED 3B while the respective programmes at health-sector schools, or *Fachschulen*, had been allocated to ISCED 5B. Now all these programmes, regardless of the type of school, are allocated to ISCED 5B. [Back to table](#)

**Ireland:** In 2010, the Irish government made large-scale capital transfers to Irish banks, which had a very big impact on government net lending figures. . [Back to table](#)

**Turkey:** Regional and local (except regional government expenditure for primary education) direct expenditure on educational institutions is not included. [Back to table](#)

# INDICATOR B5: How much do tertiary students pay and what public support do they receive?

## Methodology

Data on tuition fees charged by educational institutions were collected through a survey updated in 2012 and refer to the academic year 2010/11. The figures represent the weighted average of the main tertiary-type A programmes and do not cover all educational institutions. The figures reported can be considered as good proxies and show the difference among countries in terms of tuition fees charged by the main educational institutions and for the majority of students.

*Expenditure on student loans is recorded as the gross loan outlays in the year in which the loans are made, without netting-off repayments from existing borrowers.*

**Box B5.1:** for more detail on the way student loans are taken into account in the calculation of returns to education (see Indicator A7, “What are the incentives to invest in education”), the computation of the net present value of investing in education take into account of students loans by the following aspects:

- Access to loan or the percentage of students receiving loans;
- average amount of a typical student loan;
- cost or interest rate charged, and;
- remission/forgiveness, i.e. overall expected proportion of an average loan to be written off.

The expected average remission/forgiveness due to completion of studies on time or other performance based incentives, has been integrated as grants/scholarship. From the individual’s perspective, forgiveness has then a positive impact on the returns from education by reducing the cost and it increases the cost side from the governments’ perspective.

Following the approach to estimating the financial returns to education, based on investment theory from the finance literature, the average loan amount per student per year (based on the percentage of students receiving loans and the average amount of loans) and the average interest rate on these loans have been taken into account. The basis for integrating the interest rate on loans is to consider more than one source of financing. The weight for each element is proportional to its market value. The result is the weighted-average cost of capital (WACC), a weighted combination of loan interest rate and discount rate (the time-value of money). The WACC allows a net present value calculation with the gains expressed in monetary units. The loan impact is then a combination of the components above. From an individual’s perspective, subsidized interest rates will play positive impact on the return by diminishing the cost of investment. Conversely, from governments’ perspective, subsidized interest rates burden the public cost of education.

Overall, even from the governments’ perspective the global impact of student loans on net present value is positive as a generous student support system allows for a larger access to higher education, more people attaining tertiary level of education has a positive impact for the whole economy and public incomes (taxes, social contributions, etc.). [Back to table](#)

## Notes on specific countries

See notes on [Indicator B2](#).

**Australia:** The methodology for calculating the average tuition fees for mobile students was revised as of the 2009 reference year. Due to the break in the series, older years should not be compared to 2009 data as fees for mobile students were previously underreported. *Education at a Glance 2012* saw the first inclusion of expenditure from VET-FEE-HELP, a student loan scheme for vocational higher education (ISCED 5b). It is similar to HECS-HELP, which supports students in academic studies (ISCED 5a). VET-FEE-HELP was introduced in 2008 but had no significant expenditure until 2009. [Back to table](#)

**Flemish Community of Belgium:** The government mainly finances higher education indirectly (by public subsidies to institutions). Also for students with nationalities outside of EEA, the government will fund the institutions for as long as their number does not exceed 2% of the total student population of the institution. Students who receive grants through other channels (development, international exchange students, etc.) are not included in this 2%-standard. In reality no institutions have exceeded this 2% limitation. Conclusion: up

until now the Flemish government has not made a difference if a student is an EEA, non-EEA, Belgian or Flemish resident, when providing subsidies to the institutions of higher education. [Back to table](#)

**Canada, Denmark, Germany, Norway, Poland and Sweden:** Subsidies in kind, such as free or reduced-price travel on public transport systems, are excluded. [Back to table](#)

**Czech Republic:** Scholarships are included in direct expenditure for educational institutions. [Back to table](#)

**France:** The amount of financial aid to students is underestimated. The indicator does not take into account family allowances or housing allowances (“allocations de logement social” and “allocations personnalisées au logement”) because the share that goes to the student cannot be estimated. These allowances represent about 50% of the amount of scholarships/grants and about one-third of students benefit from them. Besides, tax reductions aren't either taken into account, ; it represents almost 80% of scholarships/grants.

Data on tuition fees in tertiary-type A education refer to the distribution of students enrolled in public university, including tertiary B.

In France, scholarships and public grants to students are allocated for general purposes and aren't earmarked to cover tuition fees or other fees to institutions. Thus, in table B5.4, data “Scholarships/ other grants to households attributable for educational institutions” is marked as “m”. [Back to table](#)

**Hungary:** Data in Table B5.2 come from the Student Loan Centre database, 2009.

In Hungary, the student loan scheme is considered to be private because the funds are raised on the money market and there are no direct subsidies, although it has characteristics of a public scheme as well (universal access, state regulation, state-owned company, relatively preferential rate).

In Table B5.3, the average annual gross amount of loan available to each students refers to the maximum available amount for every student eligible for the loan every semester. The interest rate is variable with a half-yearly interest rate period. This rate is not subsidised by the state budget and has three elements: cost of funding, risk premium and operation premium, but no profit margin. The loan scheme was launched in 2001, the repayments started in 2003, thus as a result of the lack of historic data, only expectations on the duration of typical amortisation period can be indicated. The percentage of graduates with debt refers to the proportion of Student Loan clients having finished their studies in the 2010/2011 academic year amongst the “final year students” of this academic year. The Average debt at graduation refers to student Loan clients having finished their studies in the 2010/2011 academic year and at the beginning of their repayment obligation. [Back to table](#)

**Ireland:** Students in tertiary education benefit from subsidised bus and rail travel (systems owned and funded by the state). The expenditure involved in this subsidy is currently unknown. Students in tertiary colleges and universities can make use of limited on-campus medical facilities funded both from central (exchequer) grants and from the registration fees paid by students. The level of government funding in this area is not known. [Back to table](#)

**Japan:** The Japan's data refers to only public loans and scholarships/grants of student support system subsidised by the central government: Scholarship Loan (implemented by Japan Students Services Organization) and exemption of tuition fee and/or admission fees (implemented by universities).

The numbers of recipients of “public loans only” and recipients of “scholarships/grants only” do not exclude those who receive both. Since the reference year 2010, financial supports through exemption of tuition fees and/or admission fees have been reported in the category of “scholarships/grants only”. The recipients of the financial support include international students and part-time students at all institutions.

And students include those in the second and further degree programs of ISCED 5A and ISCED 6 of private institutions as well. Regarding the exemption system, the numbers of recipients in national and private institutions are calculated based on the budgets, and those in local public institutions on the actual data.

Regarding the data in *Education at a Glance 2013*, in B5.2 exemption of tuition fees and/or admission fees is included in scholarships/grants. However, in B5.4 it is not included in scholarships, but in direct public expenditure. [Back to table](#)

**Norway:** Students who do not benefit from either loans or grants include both students that do not apply for support and those who no longer are entitled to student support due to academic delay, etc. Students who just benefit from grants are those who choose to apply for grants only. [Back to table](#)

**Slovak Republic:** Students, who are simultaneously enrolled in one academic year in two or more study programmes offered by a public university in the same level, are required to pay annual tuition fees for the second and the other study programs in the academic year. Students studying longer than the standard duration of study are required to pay annual tuition for each additional year of study. [Back to table](#)

**Sweden:** All national students are entitled to government grants and loans to finance their studies. The continued entitlement is conditional upon their pass in their previous studies. There is also an income threshold.

In Table B5.3, the annual minimum income threshold for the reimbursement of the student loan refers to a person younger than 50 years of age. The typical amortisation period for loans is about 25 years, but the amortisation period is shorter for small loans and older students. [Back to table](#)

**Switzerland:** Fees for health insurance are publicly subsidised for students from low-income backgrounds. These subsidies amount to several tens of millions of CHF but are excluded. [Back to table](#)

**Turkey:** Data on students receiving scholarships/grants include only those receiving scholarships/grants from public institutions. Since scholarships provided by private institutions are not captured in the figures, percentage of students that receive scholarships/grants is underestimated. [Back to table](#)

**United Kingdom:** Compared to data published in previous editions of Education at a Glance, transfers and payments to the private sector decreased due to the following methodological changes:

- At upper secondary level, in financial year 2010-11, one of the main upper secondary funding agencies (The Learning and Skills Council, LSC), who operated as a non-departmental government body was replaced by a new, government run, agency. In 2010 the financing of the LSC would have been shown under transfers to other private entities. In the 2011 reference year (Education at a Glance 2013) this funding is shown as part of central government expenditure.

- The decrease at upper secondary was partially offset by an increase at the tertiary level by the inclusion of student grants. Also, the amount received from student loan repayments this year have not been netted-off. These repayment amounts were taken out in previous years. [Back to table](#)

**United States:** Differences in tuition fees by field of education are a result of differences in tuition charged at different institutions, not differences in tuition fees charged within an institution for different fields of education. Generally, within an institution the charge for tuition fees is the same for all tertiary type A first degree fields of education. [Back to table](#)

# INDICATOR B6: On what services and resources is education funding spent?

See also notes on Indicators [B1](#) and [B2](#).

## Sources

[See Indicator B1](#)

## Notes on specific countries

### **Coverage of ancillary services**

Expenditure by educational institutions on ancillary services, such as student meals, room and board on campus and student transport, should include fees paid by students and families for those services. However, countries' coverage of private spending on ancillary services is uneven. While a number of countries exclude private spending on ancillary services, Australia, France, Hungary, Norway, Spain, Turkey and the United States provide information on private spending on ancillary services. [Back to table](#)

**Australia:** As of *Education at a Glance 2012* the finance methodology was revised to include capital expenditure that was not captured in previous years. Comparisons with previous publications are inadvisable. Australian Bureau of Statistics Government Finance Statistics has been used wherever possible. [Back to table](#)

**Denmark:** Compared to data published in *Education at a Glance 2013*, the change in the ratio between compensation of teachers and other staff results from a change in method. [Back to table](#)

**Germany:** Until 2008, programmes at *Berufsfachschulen* aimed at qualifying Kindergarten teachers and school-based vocational education for medical assistants, nurses, midwives or social assistants had been allocated to ISCED 3B while the respective programmes at health-sector schools, or *Fachschulen*, had been allocated to ISCED 5B. Now all these programmes, regardless of the type of school, are allocated to ISCED 5B. [Back to table](#)

**Hungary:** The expenditure on ISCED levels 1 to 3 is estimated on the basis of the number of students at each level. [Back to table](#)

**Ireland:** Ancillary services at the primary to post-secondary non-tertiary level include only school transport. [Back to table](#)

**Israel:** Ancillary services are included in total expenditure on educational institutions. [Back to table](#)

**Norway:** Expenditure on ancillary services includes welfare services, preparation of studies abroad and contributions to housing on campus in tertiary education. No ancillary services are estimated for ISCED 1-4. [Back to table](#)

### **R&D coverage (see Indicator B1)**

### **Notes on distribution of current and capital expenditure**

**Israel:** Total personnel compensation includes taxes on employment. Current expenditure other than compensation of personnel includes consumption of fixed capital.

Expenditure of non-profit institutions from own sources is not included in the UOE data collection. [Back to table](#)

**Sweden:** School and university buildings are rented. Rent payments are included in current expenditure. [Back to table](#)

# INDICATOR B7: What factors influence the level of expenditure on education?

## Methodology

Contribution of various factors to salary cost per student

Method: This table shows the salary cost per student at the upper secondary level of education, as a percentage of GDP per capita, the difference from the OECD average and the contribution of various factors to the difference from the OECD average. The salary cost per student is calculated as the teacher's salary multiplied by annual instruction time for the student, divided by the annual amount of teaching time of teachers and the average class size.

$$CCS = SAL \times instT \times \frac{1}{teachT} \times \frac{1}{ClassSize} = \frac{SAL}{Ratio\text{stud} / teacher}$$

Data used refer to *Education at a Glance*: salaries (SAL) refer to statutory salaries of teachers with 15 years of experience and minimum training (Indicator D3); instruction time (instT) refers intended instruction time for 15-year-olds (Indicator D1); teaching time (teachT) refers to net teaching time (Indicator D4); and class size (ClassSize) has been estimated based on the ratio of students to teaching staff, teaching time and instruction time (see Box D2.1 in Indicator D2). Some estimation has been made for missing data.

For explanation of the method used, see Bulletins 29 and 31 available in "statistics" section on <http://www.meq.gouv.qc.ca>. [Back to table](#)

### **Contribution of various factors to explain the difference between two variables**

The analysis of the contribution of various factors to a difference between two variables is assessed, based on an assumption relating to the mathematical relationship between these variables and the explanatory factors (based on method shown in Education Statistics Bulletin (n°29 and 31 and further explanations from Marius Demers (Ministère de l'Éducation, du Loisir et du Sport, Québec, Canada).

For example, for two countries (Country 1 and Country 2):

$$\begin{aligned} X_1 &\equiv Q_1 \times R_1 \times S_1 \times T_1 \\ X_2 &\equiv Q_2 \times R_2 \times S_2 \times T_2 \end{aligned}$$

then:

$$\frac{X_2}{X_1} = \frac{Q_2 \times R_2 \times S_2 \times T_2}{Q_1 \times R_1 \times S_1 \times T_1}$$

and,

$$1 + \frac{X_2 - X_1}{X_1} = \left(1 + \frac{Q_2 - Q_1}{Q_1}\right) \times \left(1 + \frac{R_2 - R_1}{R_1}\right) \times \left(1 + \frac{S_2 - S_1}{S_1}\right) \times \left(1 + \frac{T_2 - T_1}{T_1}\right)$$

Which can also be written as:

$$1 + V = (1 + U) \times (1 + W) \times (1 + Y) \times (1 + Z)$$

where:

$$V = \frac{X_2 - X_1}{X_1}, \quad U = \frac{Q_2 - Q_1}{Q_1}, \quad W = \frac{R_2 - R_1}{R_1}, \quad Y = \frac{S_2 - S_1}{S_1}, \quad Z = \frac{T_2 - T_1}{T_1}$$

The right part of the equation can also be written as:

$$V = U + W + Y + Z + UW + UY + UZ + WY + WZ + YZ + UWY + UWZ + UYZ + WYZ + UWYZ$$

where, « V » is the relative variation between X<sub>2</sub> and X<sub>1</sub> (V = (X<sub>2</sub> - X<sub>1</sub>)/X<sub>1</sub>).

Then, the contribution of the different explanatory factors to the relative variation between X<sub>2</sub> and X<sub>1</sub> is:

i) for factor « Q »:

$$U + \frac{UW}{2} + \frac{UY}{2} + \frac{UZ}{2} + \frac{UWY}{3} + \frac{UWZ}{3} + \frac{UYZ}{3} + \frac{UWYZ}{4} = A$$

ii) for factor « R »:

$$W + \frac{UW}{2} + \frac{WY}{2} + \frac{WZ}{2} + \frac{UWY}{3} + \frac{UWZ}{3} + \frac{WYZ}{3} + \frac{UWYZ}{4} = B$$

iii) for factor « S »:

$$Y + \frac{UY}{2} + \frac{WY}{2} + \frac{YZ}{2} + \frac{UWY}{3} + \frac{UYZ}{3} + \frac{WYZ}{3} + \frac{UWYZ}{4} = C$$

iv) for factor « T »:

$$Z + \frac{UZ}{2} + \frac{WZ}{2} + \frac{YZ}{2} + \frac{UWZ}{3} + \frac{UYZ}{3} + \frac{WYZ}{3} + \frac{UWYZ}{4} = D$$

where:  $A + B + C + D = V$

With this method, we measure the direct and indirect contribution of each factor to the variation of the variable between the two countries. For example, if a worker receives a 10% increase of the hourly wage and increases the number of hours of work from 20%, his earnings will increase from 32%, resulting from the direct contribution of each of these variations (0.1 +0.2) and the indirect contribution of these variations due to the combination for these two factors (0.1\*0.2).

The contribution of explanatory factors to the absolute difference between the two variables ( $X_2 - X_1$ ) is:

i) factor « U »:

$$\frac{A}{V} \times (X_2 - X_1) = AX_1 = a$$

ii) factor « R »:

$$\frac{B}{V} \times (X_2 - X_1) = BX_1 = b$$

iii) factor « S »:

$$\frac{C}{V} \times (X_2 - X_1) = CX_1 = c$$

iv) factor « T »:

$$\frac{D}{V} \times (X_2 - X_1) = DX_1 = d$$

with

$$a + b + c + d = X_2 - X_1$$

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### Notes on specific countries

**Australia:** The methodology for *Education at a Glance 2012* was revised to include capital expenditure that was not captured in previous years. Comparisons with previous publications are inadvisable. For more information, see the notes on the coverage of all indicators. Australian Bureau of Statistics Government Finance Statistics has been used wherever possible. [Back to table](#)

**Norway:** Values for the ratio of student to teaching staff in 2005 have been estimated based on the values for 2006. [Back to table](#)

**United States:** Instruction time at the primary and lower secondary levels reported for 2000, 2005, 2008, 2010 and 2011 and at the upper secondary level reported for 2011 is an estimation based on state requirements of the minimum length of time that constitutes as an instructional day. The source information

for these estimates is: *Number of Instruction Days/Hours in the School Year, 2005 and 2013*. Education Commission of the States (ECS): <http://www.ecs.org/clearinghouse/01/06/68/10668.pdf>. Methodology: The U.S. average instructional time data are a weighted average of state policies related to instructional time. State averages are calculated as either the minimum amount of instruction time a year, or the minimum time for any day to count as an instructional day multiplied by the minimum amount of instructional days per year.

Teaching time for the United States at the primary and lower secondary levels reported for 2000 and 2005 is an estimate using 2003-04 teacher self-reported instructional hours per week multiplied by the typical number of instructional weeks per year. Teaching time for the United States at the primary, lower secondary, and upper secondary levels reported for 2010 is an estimate using 2007-08 teacher self-reported instructional hours per week multiplied by the typical number of instructional weeks per year. Teaching time for the United States at the primary, lower secondary, and upper secondary levels reported for 2012 is an estimate using 2011-12 teacher self-reported instructional hours per week multiplied by the typical number of instructional weeks per year. [Back to table](#)