

JRC TECHNICAL REPORTS

Learning Mobility

Sara Flisi
Patrícia Dinis da Costa
Elena Soto-Calvo

December 2015



This publication is a Technical report by the Joint Research Centre, the European Commission's in-house science service. It aims to provide evidence-based scientific support to the European policy-making process. The scientific output expressed does not imply a policy position of the European Commission. Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use which might be made of this publication.

Contact information

Name: Sara Flisi

Address: Joint Research Centre, Unit DDG.01 - Econometrics and Applied Statistics

Via Enrico Fermi 2749, TP 361, I-21027 Ispra (VA), Italy

E-mail: Sara.Flisi@jrc.ec.europa.eu

Tel.: +39 0332 78 6238

JRC Science Hub

<https://ec.europa.eu/jrc>

JRC99969

EUR 27695 EN

ISBN 978-92-79-54574-0 (PDF)

ISBN 978-92-79-54573-3 (print)

ISSN 1831-9424 (online)

ISSN 1018-5593 (print)

doi:10.2760/590538 (online)

doi:10.2760/300265 (print)

© European Union, 2015

Reproduction is authorised provided the source is acknowledged.

All images © European Union 2015, except: Cover image, aboikis, Fotolia.com

How to cite: Flisi, S., Dinis da Costa, P., Soto-Calvo, E. (2015). Learning Mobility. EUR 27695. doi:10.2760/590538

TABLE OF CONTENTS

Acknowledgements.....	3
Abstract	4
1. Introduction and background.....	5
1.1 Policy context of learning mobility in higher education in Europe	6
1.2 A learning mobility indicator	8
1.3 Aims of the current technical briefing	10
2. Data sources and methodology	11
2.1 Graduates	11
2.2 Enrolments.....	15
2.3 Output tables	18
3. Results.....	19
3.1 Graduate learning mobility	19
3.2 Student learning mobility	23
4. Conclusions	27
References	28
List of abbreviations and definitions.....	29
List of tables.....	31

Acknowledgements

This report is part of the CRELL VII Administrative Arrangement agreed between DG EDUCATION and CULTURE (EAC) and DG JOINT RESEARCH CENTRE (JRC). Its content "*Learning Mobility*" is stipulated under point 3.4. of the Technical Annex accompanying CRELL VII.

Abstract

Studying abroad has positive effects at personal, social, professional, institutional and country level. On 29 November 2011, the Council of Ministers of Education, Youth, Culture & Sport agreed that "by 2020, an EU average of at least 20 % of higher education graduates should have had a period of higher education-related study or training (including work placements) abroad, representing a minimum of 15 ECTS credits or lasting a minimum of three months". However learning mobility barriers still exist and according to recent statistics from OECD and Eurostat the shares of mobile students vary widely across Member States. Eurostat has released this year information on the number of mobile graduates for the academic year 2012/2013. This technical briefing provides first estimates on learning mobility in tertiary education using available data on degree mobile graduates and mobile students for ISCED 5 to 8.

1. Introduction and background

Studying abroad for a period of time during higher education is an enriching experience that equips, develops and improves numerous personal, social and professional skills of the individual. With regards to personal skills, learning mobility has been found to be associated with positive outcomes such as future mobility, earnings and lower unemployment (Rodrigues, 2013; European Commission, 2014). Regarding professional skills, receiving structured higher instruction abroad improves competences such as foreign language skills, which are key for the individual's adaptation to the current globalised economy and labour market (Araújo, Dinis da Costa, Flisi, & Soto Calvo, 2015). Lastly, with regards to social skills, learning mobility enhances skills such as intercultural understanding and civic skills, which are important towards reducing social inequality and pursuing inclusive growth (OECD, 2014).

Moreover, learning mobility also has positive outcomes at institutional and at country level. First, students' exchanges between countries enhance opportunities for collaboration between academic institutions and organisations at an international level and help building a more united European identity. Additionally, hosting international students is a way to recruit highly skilled immigrants coming from different backgrounds and offers a chance to improve the cost-efficiency of the education system in developed as less-developed education systems.

Promoting student mobility has been a major focus in the European political agenda over the last decades. The number of students enrolled in education in a country different from their country of citizenship has been steadily rising worldwide over the last three decades. By 2012, the internalization of tertiary education had grown by 4.5 million since 1975 (OECD, 2014). Strategic objectives and specific benchmarks have been proposed to maintain and increase learning mobility across the European Union and policy and programme initiatives have been set up to achieve these targets (e.g. Europe 2020 Strategy, Erasmus + 2014-2020 Programme). According to the OECD (2014), 48% of students who have moved from their country of origin to study tertiary education abroad are in Europe. However, despite these learning mobility initiatives to promote students' mobility across Europe, a recent report from the European Commission/EACEA/Eurydice (2013) suggests that there are still large differences in the facilitators and constraints for mobility among the Member States. Supporting these findings, the OECD (2014) reported that the number of international or foreign students in tertiary education varies widely across Member States; from 1% or 2% in PL, SI and SK to 15% or above in AT, UK and LU.

As learning mobility is a growing phenomenon in Europe of a strong academic, cultural, social and political interest, it is worthwhile examining ways to maintain and further promote these international students' exchanges. Knowledge of student and graduate flows is therefore essential for providing the evidence which can support the analysis of learning mobility.

The current report provides the first estimates on learning mobility in tertiary/higher education using data from UNESCO, OECD and Eurostat (hereafter UOE) (2013) for benchmarking purposes.

1.1 Policy context of learning mobility in higher education in Europe

Specific European policies have aimed to foster student mobility over the last decades, starting with the Youth for Europe I programme in 1988, which promoted exchanges in the Community among young people¹. A decade later, in the Sorbonne Declaration (1998)², European countries were called to enhance mobility for teaching and learning. Ever since, a proliferation of European policies giving priority to mobility in higher education has taken place, including:

- The 14th of December 2000 Resolution of the Council and of the Representatives of the Governments of the Member States concerning an action plan for mobility³: where an action plan to define and democratise mobility in Europe, promote appropriate forms of funding, increase mobility and improve learning mobility conditions was approved.
- The 10th of July 2001 Recommendation of the European Parliament and the Council on mobility within the Community for students, persons undergoing training, volunteers, teachers and trainers⁴: Where the Member States were recommended to take the appropriate measures to remove obstacles and provide facilities for learning mobility to students, persons undergoing training, volunteers, teachers and trainers by (among others) setting up a group of experts, continuing the cooperation with the Member States and the social partners and periodically reporting on the progress of the adoption of these measures to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions.
- The 18th of December 2006 Recommendation of the European Parliament and of the Council on transnational mobility within the Community for education and training purposes⁵: where the adoption and promotion of the European Quality Charter for Mobility⁶ and other mobility initiatives was recommended to the Member States.
- The 25th of May 2007 Council conclusions on a coherent framework of indicators and benchmarks for monitoring progress towards the Lisbon objectives⁷ in education and training⁸: where, regarding the indicators and benchmark for monitoring progress towards the Lisbon objectives in Education and Training, the Commission was invited to make full use of the existing data on (among other topics) cross-national mobility of students in higher education.
- The 21st of November 2007 conclusions of the Council and of the Representatives of the Governments of the Member States on youth mobility⁹: where Member States were invited to develop the scope for mobility for all young persons, provide better information about existing mobility programmes, simplify procedures, widen and diversify the sources of funding for youth mobility, apply the principles enshrined in the European Quality Charter for Mobility in education and training to all forms of youth mobility.

¹ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31988D0348&from=EN>

² http://www.ehea.info/uploads/declarations/sorbonne_declaration1.pdf

³ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:42000Y1223%2801%29&from=EN>

⁴ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32001H0613&from=EN>

⁵ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006H0961&from=EN>

⁶ <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=URISERV:c11085&from=EN>

⁷ http://www.europarl.europa.eu/summits/lis1_en.htm

⁸ http://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/educ/94290.pdf

⁹ http://pjp-eu.coe.int/documents/1017981/1663188/Council-Conclusions-on-youth-mobility_2008.pdf/4ef23593-8c19-49d2-abef-a89213b9b051

More recently, the European Education and Training 2020 framework (ET 2020) proposed by the Council in 2009¹⁰ set up four strategic objectives to support the improvement of national education systems in Europe:

- Making lifelong learning and **mobility** a reality
- Improving quality and efficiency of education and training
- Promoting equity, social cohesion and active citizenship
- Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training

The 2009 Council Conclusions also called for the submission of a proposal for a learning mobility benchmark, focusing on higher education, but also inviting the Commission to study the possibility of extending the benchmark to include vocational education and training and teacher mobility.

The September 2011 Communication on an agenda for the modernisation of Europe's higher education system (COM(2011) 567) also identified the promotion of mobility and cross-border cooperation as one of the main targets to strengthen the quality of higher education.

In the 29th of November 2011 meeting¹¹, the Council of Ministers of Education, Youth, Culture and Sport agreed on a specific benchmark for learning mobility, which differentiates between two main areas – higher education and initial VET. The benchmark consists of two indicators:

- By 2020, an EU average of at least 20 % of higher education graduates should have had a period of higher education-related study or training (including work placements) abroad, representing a minimum of 15 ECTS credits or lasting a minimum of three months.
- By 2020, an EU average of at least 6 % of 18-34 year-olds with an initial vocational education and training (IVET) qualification should have had an IVET-related study or training period (including work placements) abroad lasting a minimum of two weeks, or less if documented by Europass.

Additionally, in the same meeting it was also agreed that: "it is also important to accompany the benchmark with an indicator covering any type of learning mobility experienced by young people, including mobility which takes place in formal and non-formal settings" (Council of the European Union, 2011, p.4).

The same Council conclusions (2011/C 372/08) also invited Member States to "improve data collection on learning mobility within all cycles of higher education, initial vocational education and training, and youth learning mobility in general, in order to measure progress against the European benchmark".

Within the same document, the Commission was invited to:

1. Work with and support the Member States, in particular with the help of Eurostat, to improve the availability of relevant indicators and statistics during the period up to 2020. In doing so, the best possible use should be made of the statistical data and household surveys available, with a view to minimising administrative burdens and costs.
2. Examine, in particular by means of regular progress reports, the degree to which the mobility objectives set under the "ET 2020" framework are being met.

¹⁰ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52009XG0528%2801%29&from=EN>

¹¹ http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/educ/126380.pdf

3. Report back to the Council by the end of 2015, with a view to reviewing and, if necessary, revising the European benchmark on learning mobility [...].

1.2 A learning mobility indicator

This briefing will focus on the first of the two benchmark indicators, namely learning mobility in higher education¹². Data to monitor this indicator was not available at the time the benchmark was set. While the UOE¹³, i.e. the joint UIS (UNESCO Institute of Statistics)/OECD/Eurostat data collection on education statistics, has been collecting data on student mobility already from the 1990s, information on graduate mobility was not collected. A Eurostat Task Force was set up to work on the development of a methodology and harmonization of concepts for collecting learning mobility statistics. This resulted in a methodological manual on learning mobility (last updated in 2015¹⁴), which details the scope and the types of learning mobility in higher education; further defines (in statistical terms) the EU benchmark on learning mobility in tertiary education; and specifies additional data needs as expressed by EU policy-makers regarding learning mobility statistics.

In the manual, **learning mobility** is defined as the physical crossing of national borders between a country of origin and a country of destination and subsequent participation in activities relevant to tertiary education (in the country of destination)¹⁵.

As reported in the manual: "Mobile students/graduates are defined by their country of origin. The country of origin is defined as the country of prior education i.e. country where upper secondary diploma was obtained¹⁶. If the information on country of upper secondary diploma is not available, the country of prior residence can be used as a proxy. Citizenship is the least preferred option as a proxy of country of origin. Before 2016, data on mobile students/graduates shall be provided using the national definition of "country of origin" (preference to prior education, vs. residence, vs. citizenship). Starting in 2016, the definition of country of origin to be used should be the country where the upper secondary diploma was awarded or the best national estimate."¹⁷

Two types of mobility are identified, namely degree mobility and credit mobility, both of which are included in the benchmark.

Degree mobility is defined as the physical crossing of a national border to enrol in a degree programme at tertiary-level in the country of destination. The degree programme would require the students' presence for the majority of courses taught.

Degree mobile graduates are graduates whose country of origin (preference to prior education, vs. residence, vs. citizenship) is different from the country where the graduation at the given tertiary ISCED level is obtained.

¹² In order to gather data for the benchmark indicator on IVET mobility, a pilot data collection was carried out in 2014, with the use of household surveys. Results became available in 2015; and on basis of these it was concluded that IVET mobility is such a rare phenomenon that household surveys cannot be considered as a suitable tool to capture it (see Eurostat document 'ETS WG 2015 Doc 05 Item 61').

¹³ More precisely, the UOE is a joint data collection of international statistics on education and training systems administrated by the three international organisations: the United Nations Educational, Scientific, and Cultural Organisation Institute for Statistics (UNESCO-UIS), the Organisation for Economic Co-operation and Development (OECD) and the Statistical Office of the European Union (EUROSTAT). Commission Regulation (EU) No 912/2013 of 23 September 2013 specifies the details for data collection.

¹⁴ The manual can be found [here](#).

¹⁵ The change between different (sub-) national learning systems which does not involve the physical crossing of a national boundary is not considered as learning mobility.

¹⁶ ISCED level 3 or 4 completion with access to tertiary education programmes.

¹⁷ A graduate is a person who, during the reference school or academic year, has successfully completed an education programme.

Degree mobile students are enrolled as regular students in any semester/term of a degree programme taught in the country of destination, which is different from their country of origin (preference to prior education, vs. residence, vs. citizenship) with the intention of graduating from the programme in the country of destination.

Tertiary degree mobile students/graduates are defined as students/graduates:

- In formal education as defined in the ISCED 2011 classification¹⁸;
- In a tertiary-level study programme. Tertiary-level study covers programmes classified in ISCED levels 5, 6, 7 or 8 according to the ISCED 2011 classification;

and

- Having received the leaving certificate of their upper secondary programme (ISCED level 3 or 4 completion with access to tertiary education programmes) in a country different from the one where their institution of tertiary degree study/graduation is located.

The country where they received their upper secondary leaving certificate is defined as their **country of origin** and the country where the tertiary programme is provided is the **country of destination**.

Credit mobility is defined as temporary tertiary education or/and study-related traineeship abroad within the framework of enrolment in a tertiary education programme at a "home institution" (usually) for the purpose of gaining academic credit (i.e. credit that will be recognised in that home institution).

Graduates who have had a credit mobility stay are graduates from a given tertiary ISCED level programme who have had a temporary tertiary education study period and/or work placement abroad within the ISCED level programme.

Tertiary credit mobile graduates are graduates:

- in formal education as defined in the ISCED 2011 classification;
- in a tertiary-level study programme. Tertiary-level study covers programmes classified in ISCED levels 5, 6, 7 or 8 according to the ISCED 2011 classification;

and

- who spend an education and training period in a country different from their country of full registration/graduation (i.e. the country where they are regularly enrolled/obtain their diploma) in the perspective of making those credits gained abroad recognised in the institution of full registration ("home institution"). This period of tertiary level study or training abroad should take place during the ISCED tertiary level programme from which the student graduates and should be recognised towards a degree by the home institution.

In practical terms, data on these two types of mobility included in the mobility benchmark are collected through two distinct datasets:

- Degree mobile graduates: each country should provide data by ISCED 2011 level on graduates who are degree mobile (i.e. having completed their upper secondary education in another country);
- Credit mobile graduates: each country should provide data on students who graduate in the country and who have had a period of study or training abroad.

The **Learning Mobility in Higher Education 2020 benchmark (LMHE2020)** focuses on outward mobility (to anywhere in the world) of graduates (not students enrolled).

¹⁸ <http://www.uis.unesco.org/Education/Documents/isced-2011-en.pdf>

The manual establishes that the benchmark is computed at the EU level as the number of EU originated mobile graduates (as defined in the benchmark, i.e. either credit or degree mobility categories, with a minimum length of stay abroad) expressed as a percentage of all graduates whose origin (i.e. country of upper secondary diploma) is in the EU, following this formula:

$$\text{LMHE 2020} = \frac{\text{number of EU originated mobile graduates}}{\text{number of EU originated graduates}} \times 100$$

According to the manual, the denominator of this ratio is the population of graduates with country of origin in the EU. The numerator is the total number of graduates with country of origin in the EU who were mobile. It includes those who are exclusively credit mobile; those who are exclusively degree mobile within the EU and from the EU to the rest of the world¹⁹; and those who are dual mobile graduates.

In order to calculate the benchmark, the following data is therefore needed:

- Outward mobility data on tertiary graduates (ISCED 5-8) of an EU origin (their country of upper secondary diploma was in an EU country) who took their degree abroad. These are the degree mobile graduates. Data on outward degree mobile graduates from a country are not reported by the country itself, but based on the data on inward degree mobile graduates from the country reported by each of the possible destination countries.
- Outward mobility data on tertiary graduates (ISCED 5-8) of an EU origin (their country of upper secondary diploma was in an EU country) who graduated in their country of origin, but took part of their degree abroad. These are the credit mobile graduates. Unlike degree mobility, information on outward credit mobile graduates from a EU country is reported by the country itself.

While it became mandatory to provide the first data on degree mobile graduates in 2015 (although with some derogations that will be explained later), data on credit mobility will be collected in 2017 (reference period 2015/2016) and released only in 2018. As a consequence, **this briefing will take into account degree mobile graduates only.**

1.3 Aims of the current technical briefing

From this overview, it is clear that learning mobility data currently available can provide only a partial picture of the situation. For the time being, Eurostat is releasing only information on the absolute number of degree mobile graduates and of mobile students (as will be explained in more detail in the following section).

Using this information, the main purpose of this technical briefing is to provide the Commission with:

1. First estimates on the tertiary education outward mobility benchmark indicator, overall (ISCED 5 to 8) and by each ISCED level (i.e. ISCED 5, ISCED 6, ISCED 7 and ISCED 8).
2. Estimates of outbound learning mobility for students enrolled in tertiary education, overall and by ISCED level).
3. Estimates of inward graduate and student mobility indicators.

¹⁹ As a consequence of this, data from non-EU destination countries is fundamental for the calculation of the benchmark.

2. Data sources and methodology

2.1 Graduates

2.1.1 Data sources and preparation

The data source for the briefing is the UOE. The reference academic year is 2012/2013.

As far as graduates are concerned, the base dataset used is the one on "Degree mobile graduates from abroad by education level, sex and country of origin" (Eurostat online data code *educ_uoe_mobg02*; last update considered: 16 November 2015), which provides information on the number of degree mobile graduates at tertiary education level (overall – i.e. for ISCED 5-8 – and for the individual ISCED levels) in each destination country. In this dataset, information is therefore provided by the host country of mobile graduates, and disaggregated by country of origin²⁰. The dataset covers EU countries, NO, CH and MK²¹.

Information on a set of non-European destinations was added from a special extraction provided by Eurostat. This additional dataset covered AUS, BR, CAN, CL, IL, NZ and RUS, and also provides figures by country of origin and single level of educational attainment.

Combining both datasets, home/host country matrices were created – for ISCED 5-8 together, and for the single ISCED levels –, with origin countries on the rows (where the origin countries available are those from Eurostat *educ_uoe_mobg02* dataset), and destination countries in the columns (coming from Eurostat *educ_uoe_mobg02* for European countries, and from the special extraction for non-European ones).

2.1.2 Computation of general mobility indicators

Starting from these matrices, **general mobility** figures were calculated in the following ways.

For each host country, the total number of inward mobile graduates is the sum of graduates in country X from all source countries available; for *educ_uoe_mobg02* data, this is the value of WRL_X_REP for each column of the matrix.

For each country of origin, the number of outward mobile graduates is the sum of all destinations available for each row of the abovementioned matrix – so it includes all graduates from country X that graduated in countries other than country X (i.e. including

²⁰ While country of origin would ideally be defined as country of prior education, i.e. "country where upper secondary diploma was awarded", the data collection for the academic year 2012/2013 allowed countries to use the national definition of country of origin, which can be either country of prior education, country of usual residence, or country of citizenship.

According to Eurostat, the countries covered in the *educ_uoe_mobg02* dataset adopted the following definitions of country of origin:

- country of prior education: DK, DE, LV, FI and CH;
- country of upper secondary diploma: BE, HR, NL, AT, PL, PT and NO;
- country of usual residence: EE, IE (Domicillary origin, which is close to the concept of usual residence), ES, CY, LT, RO, SI, UK, LI and MK;
- country of previous residence: SE;
- country of citizenship: BG, CZ, IT, LU, HU, MT and SK.

The full list can be found [here](#).

²¹ For the list of country codes used in this briefing, see the Section "List of abbreviations and definitions".

both European and non-European countries, whenever available). This is therefore the sum of figures provided by each host country separately²².

The total absolute number of inward and outward mobile graduates per country is then used to calculate the two mobility indicators, where the mobile graduates are expressed as a share of total graduates in the country. These two values are used at the numerator of the respective ratios.

The denominator is the same for both outward and inward mobility indicators; according to the official definition of the mobility indicator, this should be the number of graduates originated in the country that is taken into account. However, these values are currently not available. In order to build the closest possible proxy for it, the main dataset used is "Graduates by education level, programme orientation, completion, sex and age" from Eurostat (online data code *educ_uoe_grad01*; last update considered: 01 December 2015), which provides the number of total graduates in each country by level of educational attainment. Since these figures include also inward mobile graduates, and exclude outward mobile ones, in order to correct the figure we calculated the denominator for country X as follows:

$$\begin{aligned} &\text{Number of graduates in country X (from } educ_uoe_grad01) \\ &\quad - \text{Net mobile graduates} \end{aligned}$$

Where net mobile graduates are defined as:

$$\begin{aligned} &\text{Inward mobile graduates from any other country to country X} \\ &\quad - \text{Outward mobile graduates from country X to any other country} \end{aligned}$$

Indicators are computed by country (for each EU28 country, and for the other European countries available), as well as for EU28 and Europe as a whole.

For the aggregate indicators, the following procedures were adopted:

The total number of inward mobile graduates for EU28 (Europe) is computed as the sum of inward mobile graduates who graduated in EU28 (European) countries. Given data availability for destination countries reported in Section 2.1.1, Europe is here defined as the sum of EU28 countries, CH, MK and NO.

The total number of outward mobile graduates for EU28 is computed as the sum of outward mobile graduates (to all destination countries available, i.e. EU28, CH, MK, NO, AUS, BR, CAN, CL, IL, NZ and RUS) whose country of origin is a EU28 country. For Europe, this figure is built by summing up the "Europe" value provided by Eurostat and the one for CY²³.

The denominators are computed with a procedure similar to the one for the individual countries, that is:

²² It should be noted that, since each destination country can use a different definition of country of origin, some mismatch may occur in the figures. Moreover, this way of calculating the total number of outward mobile graduates implies that all caveats and notes related to data coming from each destination country, applies to the other countries considered.

²³ The "Europe" figure provided by Eurostat in the online dataset includes more countries than those available individually (since it can include figures relative to e.g. "Europe not specified"), but excludes CY, that is considered a non-European country.

Number of graduates in EU (European) countries
(from *educ_uoe_grad01* – summed up manually²⁴)
- Net mobile graduates

Where net mobile graduates are defined as:

Inward mobile graduates from non-EU (non-European) to EU (European) countries
- Outward mobile graduates from EU (European) to non-EU (non-European) countries

2.1.3 Computation of intra-EU mobility indicators

A second set of mobility indicators was computed for ***intra-EU mobility*** only. In this case, only EU28 origin and destination countries were considered. Indicators were computed in a way similar to that presented above, with the exclusion of the EU28 average, where net mobile graduates were calculated as the difference between total inward and outward mobile graduates in EU28 countries to, and from, other Member States²⁵. As a consequence, intra-EU mobility indicators for the EU28 are not comparable to those on general mobility.

2.1.4 Data issues and caveats

When computing mobility indicators, some issues and caveats need to be taken into account.

The first one concerns the fact that, as previously mentioned, the information on mobile graduates is collected at the level of the destination country (see Section 2.1.1). As a consequence, the computation of the total number of outward mobile graduates, by country of origin, takes into account figures provided by all the other countries. This implies that the reliability of the outward indicator for a country depends on the quality and detail of the information provided by other countries²⁶.

This issue becomes particularly relevant when countries of destination do not provide complete or detailed information on the country of origin of the graduates. Three main situations may occur in this respect:

1. Countries that do not provide information for all applicable ISCED levels;
2. Countries that do not provide detailed information on the country of origin of mobile graduates;
3. Countries that received derogations in the transmission of data.

As far as the first point is concerned, it should be pointed out that BE, ES and IT do not provide information on inward mobile graduates at ISCED 5 level. Also, ES and PL produce no figures for ISCED 8²⁷. As a consequence of this:

²⁴ Since not all European countries are available, this implies that the absolute value of outward mobile graduates potentially includes more origin countries than this figure on the total number of graduates in Europe.

²⁵ In the calculations for the general indicators, this was the difference between inward mobile graduates from non-EU to EU countries, and outward mobile graduates from EU to non-EU (non-European) countries.

²⁶ Another implication is that to have a complete picture of outward mobility, ideally all destination countries should be available. In this dataset, the main missing destinations are probably China, Japan, Mexico, South Korea and USA.

²⁷ For these countries, the total number of tertiary graduates (ISCED 5-8) is not produced by Eurostat, but is calculated as the sum of the available ISCED levels.

- a. Inward mobility indicators for these ISCED levels in these countries cannot be computed;
- b. Outward mobility indicators for these ISCED levels in these countries are not computed either, since it is not possible to calculate the number of net mobile graduates;
- c. Outward mobility indicators for all other countries are based on an incomplete set of information, therefore potentially underestimating the real incidence of outward mobility.

Concerning point 2, this issue applies in particular to SK. For each ISCED level, this country provides only the total number of mobile graduates in the country, without any disaggregation by country of origin (except for ISCED 5). This means that:

- a. The general inward mobility indicator can be calculated for the country (although without making any distinction between EU and non-EU countries of origin),
- b. The almost 3,000 mobile graduates in SK cannot be “imputed” back to the country of origin when calculating the outward mobility indicator, therefore potentially underestimating the figure.

In order to improve the coverage of the mobility indicators, the distribution by country of origin of mobile graduates in SK was estimated. The procedure is described in more detail below.

The third issue, which is the most concerning one, is the presence of derogations for some countries in the transmission of data about mobile graduates. As a matter of fact, derogations²⁸ in the transmission of data on degree mobile graduates were granted until 31 December 2016 to EL and FR²⁹. On one hand, this makes it impossible to estimate an inward mobility indicator for these countries; on the other hand, this creates the same problem mentioned above for the calculation of outward mobility, since all mobile graduates who graduated in FR and EL cannot be considered in the computations; again, this may result in an underestimation of the indicators.

In order to limit the impact of the problems created by missing information for EL and FR, and missing distribution by country of origin for SK, estimates were carried out aiming at filling in the major gaps. This was done by inferring the levels and distribution by country of origin of inward mobile graduates for these countries, either based on the levels and distribution of similar countries (where similar countries are identified on the basis of mobile students³⁰), or on student mobility for the same countries.

More in detail, for SK, the distribution of mobile graduates by country of origin was estimated starting from the distribution observed for CZ (and imputing to CZ the share of mobile graduates that for CZ is observed to come from SK). As a matter of fact, a comparison between the distributions of mobile students by country of origin in the two countries revealed similar patterns, so CZ was deemed to be a suitable term of comparison for estimates for SK. For each of the ISCED levels where the SK distribution was missing (i.e. all but ISCED 5), the CZ one was applied for the estimation.

For EL and FR, the estimates required a further step, as no total number of mobile graduates in the country was available. To estimate the absolute value of inward mobile graduates by ISCED level, the levels of inward mobile students were again taken as reference; by comparing the two countries of interest with other EU countries, the most

²⁸ See Commission Implementing Decision 2013/472/EU of 23.9.2013, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:253:0024:0026:EN:PDF>

²⁹ Spain was granted a derogation concerning the definition of mobile graduates according to prior country of education, allowing data to be delivered using national definition. A derogation has been granted also to PL for the transmission of data on ISCED 6 to 8 by 31 December 2018.

³⁰ From Eurostat database *educ_uoe_mobs02*. See Section 2.2 on enrolments.

similar ones were identified and used as benchmark to estimate the overall number of inward mobile graduates in EL and FR³¹.

For FR, the most comparable country appeared to be DE, and the total number of inward mobile graduates was computed by comparison to the DE level. In a second step, this total figure was allocated to the different ISCED levels on the basis of the distribution of inward mobile students in FR; starting from the total by ISCED level, distributions by country of origin were estimated, again based on the distribution found among mobile students in FR.

For EL, information on mobile students is available only at ISCED 6, so estimates for mobile graduates were carried out only for this level³². The country with the closest absolute value of inward mobile students at ISCED 6 was BE; the BE absolute number of inward mobile graduates was therefore taken as reference to compute the corresponding figure for EL. In the second step, the distribution by country of origin of mobile students in EL was used to estimate the allocation of graduates to home countries.

A final remark concerns the computation of ISCED 5-8 values. Eurostat generally does not provide the total number of inward mobile graduates for the aggregate ISCED 5-8 category in *educ_uoe_mobg02* for countries where one of the ISCED levels is missing. For all these countries (i.e. BE, ES, IT, PL), and for those for which estimates were carried out (i.e. EL, FR, SK), the total number of tertiary graduates was calculated as the sum of the available ISCED levels³³. The lack of information for some ISCED levels at the numerator produces some mismatch between the levels covered at the numerator (that can have missing information) and those at the denominator (that cover all applicable ISCED levels). This is specified in the tables produced in this briefing, and should be considered as a consequence of the data quality issues that concern learning mobility figures provided by the countries.

2.2 Enrolments

2.2.1 Data sources and preparation

As previously mentioned, the data source for the briefing is the UOE database on education statistics (see Section 2.1.1). The reference academic year is 2012/2013. Regarding the enrolment data the main dataset used is "Mobile students from abroad enrolled by education level, sex and country of origin" (Eurostat online code *educ_uoe_mobs02*; update considered: 16 November 2015). The database provides information on the number of mobile students enrolled in tertiary education (ISCED levels 5-8), short-cycle tertiary education (ISCED 5), bachelor's or equivalent level (ISCED 6), master's or equivalent level (ISCED 7) and doctoral or equivalent level (ISCED 8). The information is presented according to the number of mobile students in the host country disaggregated by country of origin³⁴ and includes data for the EU

³¹ Unlike SK, the comparison with other countries was used for EL and FR only to compute the levels, not the distribution of graduates by country of origin, for which the mobile students' distribution of the respective countries was used. This is because both countries have quite unique inward mobility patterns (dominated by students from CY for EL, and African students for FR, both shares being above 40%), that cannot be found in other EU Member States, so the option of using the national enrolments distribution was deemed more reliable.

³² As a consequence, ISCED 5-8 for EL is the same as ISCED 6, which is the only available.

³³ The same procedure was applied to the total number of graduates in the country for the denominator, since in *educ_uoe_grad01* Eurostat does not compute ISCED 5-8 totals for countries for which one of the ISCED levels is not applicable. This situation is however different from that of the numerator, since for total graduates there are no real "missing" values at applicable ISCED levels.

³⁴ For 2012/2013 UOE data the country of origin could be either country of prior education, country of usual residence, or country of citizenship.

countries plus IS, LI, NO, CH, MK, TR and JP³⁵. As for mobile graduates, the structure of the data used in the computation of the indicators is a matrix for ISCED 5-8 combined, and for each one of the ISCED levels separately, with countries of origin appearing in rows and destination countries in columns. In addition, for countries of origin the Eurostat database on mobile students includes also the number of mobile students from EUR, AFR, AME_N, CAN, US, AME_C_S, MX, BR, CL, ASI, CN, JP, KR, IN, IL, OCE, AU, TR and NZ.

2.2.2 Computation of general mobility indicators

For each host country the number of inward mobile students is the sum of students from all the countries available in the *educ_uoe_mobs02* data, which corresponds to the value presented for World total (WRL_X_REP) for each column of the matrix. For each country of origin, the number of outward mobile students is the sum of all destinations available for each row of the abovementioned matrix. This includes both European and non-European countries available in the data, which is the sum of figures provided by each host country separately³⁶.

The calculation of the mobility indicators for students is the same as the one presented in the previous section for graduates. The total absolute numbers of inward and outward mobile students are used for the numerator of the formula in order to calculate the respective ratios.

As for graduates, the total number of inward mobile students for EU28 (Europe) is computed as the sum of inward mobile students enrolled in EU28 (European) countries. Given data availability for destination countries reported in Section 2.2.1, Europe is here defined as the sum of EU28 countries, CH, IS, LI, MK and NO; the coverage of the "Europe" area is therefore wider than for graduates (no information on IS and LI is available, though).

The total number of outward mobile students for EU28 is computed as the sum of outward mobile students (to all destination countries available, i.e. EU28, CH, IS, LI, MK, NO, TR and JP) whose country of origin is a EU28 country. For Europe, this figure is built by summing up the "Europe" value provided by Eurostat and the one for CY³⁷.

For enrolments, the denominator is defined as the number of students originated in the country that is taken into account. As previously mentioned for the graduate mobility indicators, at the moment there are no data available for this figure (see Section 2.1.2). As a proxy of the denominator for enrolments, data that provides the number of total students enrolled in each country is used. This data is available on the Eurostat website and is called "Students enrolled in tertiary education by education level, programme orientation, sex, type of institution and intensity of participation" (online data code *educ_uoe_enrt01*; update considered 16 November 2015). As for graduates, these

According to Eurostat, the countries covered in the *educ_uoe_mobs02* dataset adopted the following definitions of country of origin:

- country of prior education: DK, DE, LV, PT, FI and CH;
- country of upper secondary diploma: BE, HR, NL, AT, PL and IS;
- country of usual residence: EE, IE, ES, CY, LT, RO, SI, UK, LI, NO and MK;
- country of previous residence: SE;
- country of citizenship: BG, CZ, EL, FR, IT, LU, HU, MT, SK and TR.

The full list can be found [here](#).

³⁵ For the list of country codes used in this briefing, see the Section "List of abbreviations and definitions".

³⁶ As for graduates, since each destination country can use a different definition of country of origin, some mismatch can occur in the figures. Moreover, this way of calculating the total number of outward mobile students implies that all caveats and notes related to data coming from each destination country, applies to the other countries considered.

³⁷ The "Europe" figure provided by Eurostat in the online dataset includes more countries than those available individually (since it can include figures relative to e.g. "Europe not specified"), but excludes CY, that is considered a non-European country.

figures were adjusted subtracting the number of net mobile students (*Inward mobile students from any other country to country X minus Outward mobile students from country X to any other country*)³⁸.

The enrolments indicators are presented for each EU28 country, for other European countries available, for the EU28 as a whole and for Europe combined.

For the aggregated indicators on enrolments, the same procedure was followed as described previously for graduates, using data for students.

2.2.3 Computation of intra-EU mobility indicators

As previously stated for graduates (see Section 2.1.3), the intra-EU mobility indicators for enrolments were based only on data from the EU28 origin and destination countries. To compute the indicators, the number of net mobile student is equal to the difference between total inward and outward mobile students in EU28 countries to and from other Member States. As for intra-EU mobility graduates, it is not possible to compare the intra-EU mobility indicators for enrolments for the EU28 with the indicators on general mobility.

2.2.4 Data issues and caveats

Data issues for student mobility indicators are in general similar to those for graduate mobility.

First of all, the information on mobile students is collected at the level of the destination country, meaning that the reliability of the outward indicator for a country rests on the quality and level of detail of the information provided by other countries. There are two main issues for the lack of reliability of countries' data: 1) not providing information for all ISCED levels and 2) derogations in some countries for the transmission of data.

In what concerns the first issue, in HR, IT, LI, CH and MK Eurostat does not provide information on inward mobile students at ISCED 5 level. Therefore, it is not possible to compute inward and outward mobility indicators for all these countries for ISCED 5. Additionally, in SK there is no information on inward mobile students for ISCED 7, therefore mobility indicators were not computed for this ISCED level. Regarding the data on students enrolled in tertiary education (*educ_uoe_enrt01*), in BG, EE, EL, HR, LT, NL, PT, RO, LI and MK Eurostat does not provide information for ISCED level 5. In LU data is available only for ISCED 5 and in NL the same is true for ISCED 8. In EL, LU and NL the information on the number of students enrolled in ISCED5 to 8 aggregated is also missing. Thus, the mobility indicators for the countries where the data is missing were not computed as one component of the denominator is missing.

As far as the second point is concerned, in EL there is a derogation in the transmission of data on number of mobile students enrolled, by ISCED levels 5 to 8 until 31 December 2016. However, data for inward mobile students for EL is available for ISCED 6.

Finally, concerning the computation of ISCED 5-8 aggregated values, as in *educ_uoe_mobs02* Eurostat does not provide the total number of inward mobile students enrolled for countries where one of the ISCED levels is missing, the sum of the number of students of the available ISCED levels was calculated (BG, EL, IT). As previously mentioned for the mobility indicators on graduates (see Section 2.1.4), the lack of information for some ISCED levels at the numerator produces some mismatch between

³⁸ It should be noted that student mobility figures published by Eurostat (tables *educ_uoe_mobs03* and *educ_uoe_mobs04*) and OECD (Education at a Glance 2015, indicator C4, table C4.1) use the total student population in the country of origin as the denominator, and therefore do not apply the UOE manual on learning mobility (see footnote 14). For inward mobility, this means that OECD and Eurostat figures are lower than figures in this briefing for countries which host many mobile students but send few abroad (examples are AT and UK). It works the opposite way for countries sending many students abroad but hosting a few (for example BG and IS).

the levels covered at the numerator and those at the denominator (that covers different ISCED levels). This caveat on data quality should be taken in consideration for the interpretation the learning mobility figures provided by the countries.

2.3 Output tables

The Statistical Annex to this briefing, which is available online³⁹, includes five groups of tables for graduates and five groups of tables for enrolments (one for each of the ISCED level from 5 to 8, and one for ISCED 5-8 combined); each group of tables includes:

1. The home/host country matrix;
2. A table showing, for each country, for the EU28 and for Europe, the absolute number of inward and outward mobile graduates/students; the total number of graduates/students in the country; the computations for net mobile graduates/students and the denominator; outward and inward mobile indicators, and the balance of net mobile graduates/students as a share of total graduates/students;
3. A table similar to the second one, but for intra-EU mobility only.

In Section 3, outward and inward mobile indicators are reported, for graduates (Section 3.1) and enrolments (Section 3.2).

³⁹ <http://publications.jrc.ec.europa.eu/repository/handle/JRC99969>

3. Results

3.1 Graduate learning mobility

Table 1 presents outward graduate mobility indicators, both general and intra-EU, for each of the ISCED levels separately, and for ISCED 5-8 as a whole. Indicators are presented both by country, and at an aggregate level, for Europe and for the EU28. The latter value for ISCED 5-8 is the closest proxy of the benchmark indicator. In Table 2, inward mobility rates are shown for comparison purposes.

According to the data currently available, and the estimates carried out as explained in the Section 2.1.2, the EU benchmark for the reference period 2013 (which refers to the academic year 2012/2013) is 2.9%. While this is very far from the 2020 target of 20%, it should be again highlighted that this heavily depends on data availability, which currently provides a limited picture of the phenomenon. In particular, the entire credit mobility component of the benchmark is missing, so the indicators presented here can be considered as estimates of degree mobility only.

When comparing figures at the country level, the only two countries that appear to be above the benchmark are CY and LU, both with shares above 60%⁴⁰. This is likely explained by the size of the countries and the structure of their education system, pushing individuals to graduate in universities in neighbouring countries (BE, DE and FR for students from LU; EL for students from CY⁴¹). After these two extreme cases, there is however a consistent group of countries, namely BG, EE, EL, IE, LT, LV, MT, SK, MK and NO, where a significant share of graduates – between 6 and 13% – decided to take a degree in a different country. At the opposite end, ES, PL and UK have shares around or below 1%.

And interesting result is that mobility is higher at higher levels of education. In most countries, the highest incidence of mobility is found at doctoral level, followed by master's level. In the EU on average, the share at ISCED 8 level is 8.5%, almost three times as high as for ISCED 5-8 overall.

Results are similar for intra-EU mobility, although by definition the relative figures are somewhat lower than for general mobility. Differences between general and intra-EU indicators appear to be mostly driven by individuals from DE, FR, IT and UK graduating in CH, AUS and CAN, which are not captured by intra-EU figures, which therefore are lower.

⁴⁰ High shares of outward mobile graduates are found also for other countries, at specific ISCED levels, e.g. for DE, FI and HR at ISCED 5 level; this is generally explained by the very low number of graduates in these countries at these ISCED levels. This type of result could be partly due to the different structure of the educational systems in the home/host countries.

⁴¹ The result for CY is also driven by the results of estimates carried out for EL, where a consistent share of inward mobile students appears to be from CY.

Table 1. Outward mobility indicators for graduate learning mobility (% of graduates), 2013

Country	General					Intra-EU				
	ISCED 5-8	ISCED 5	ISCED 6	ISCED 7	ISCED 8	ISCED 5-8	ISCED 5	ISCED 6	ISCED 7	ISCED 8
AT	3.67	0.16	5.67	4.81	12.26	3.11	0.12	5.01	4.00	7.58
BE	3.30	:	2.00	5.19	12.92	2.89	:	1.82	4.35	7.70
BG	6.62	:(z)	5.82	6.68	10.54	6.29	:(z)	5.55	6.42	9.73
CY	62.97	14.82	58.66	49.45	72.86	49.63	12.90	55.66	48.66	72.71
CZ	3.53	14.09	2.76	4.14	6.89	3.28	13.05	2.65	3.94	5.77
DE	5.14	72.91	4.10	5.96	8.81	4.17	71.67	3.51	4.80	4.91
DK	1.72	0.64	1.01	3.63	5.08	1.39	0.38	0.82	2.97	3.09
EE	7.96	:(z)	4.72	11.39	14.17	6.85	:(z)	4.42	8.85	12.18
EL	11.42	:	3.57	:	:	11.49	:	3.38	:	:
ES	1.22	:	1.44	1.57	:	1.14	:	1.35	1.44	:
FI	4.89	93.87	3.59	5.35	7.69	2.45	75.73	1.86	3.12	3.57
FR	2.01	0.39	2.87	2.35	7.58	1.36	0.22	1.89	1.69	3.35
HR	2.11	53.73	1.45	2.40	10.06	1.95	41.75	1.37	2.25	8.36
HU	1.96	1.06	1.36	3.21	10.57	1.81	1.04	1.26	2.95	9.13
IE	9.94	8.34	6.66	16.12	21.73	9.29	8.12	6.22	14.75	17.41
IT	2.47	:	1.29	3.17	12.35	2.06	:	1.04	2.70	9.87
LT	6.45	:(z)	4.79	8.27	13.31	6.06	:(z)	4.69	7.23	12.71
LU	68.09	21.70	63.20	64.54	81.78	56.02	19.44	60.48	54.24	63.99
LV	6.35	4.38	5.81	9.61	9.37	5.74	4.06	5.64	7.48	8.31
MT	13.00	5.53	5.55	26.75	72.62	12.37	5.37	4.98	24.89	72.62
NL	2.13	6.74	1.05	4.17	7.84	1.88	6.11	0.96	3.60	4.79
PL	0.86	:(z)	0.55	1.10	:	0.81	:(z)	0.52	1.03	:
PT	2.76	:(z)	1.63	3.16	7.45	1.97	:(z)	0.85	2.60	6.46
RO	3.37	:(z)	2.69	3.51	5.82	3.11	:(z)	2.53	3.26	5.30
SE	4.33	1.42	3.94	5.86	7.35	3.51	1.14	3.36	4.37	4.74
SI	2.58	1.08	1.53	4.61	3.64	2.22	0.87	1.29	4.03	3.16
SK	10.46	11.29	11.16	9.76	10.03	10.28	11.08	11.01	9.62	9.28
UK	0.47	0.18	0.32	1.01	1.75	0.23	0.09	0.14	0.45	0.54
CH	3.23	2.67	1.99	6.15	9.05					
MK	6.78	:(z)	3.13	17.42	25.13					
NO	7.89	5.32	5.67	13.84	7.86					
EU28	2.91	1.25	2.40	3.87	8.49	2.42	1.02	2.04	3.18	5.72
Europe	3.48	1.38	2.90	4.69	9.36					

Notes: ":" = Not available; "z" = Not applicable. Europe is the sum of the "Europe" value provided by Eurostat and CY (see Section 2.1.2). All figures for outward mobile graduates include estimates for outward mobile graduates to EL, FR and SK. For each country, outward mobility indicators are computed for the ISCED levels for which inward mobility indicators can be computed. For more details, see flags and footnotes for inward mobility indicators. Source: Eurostat UOE data. Datasets: *educ_uoe_mobg02* for mobile graduates (update considered: 16.11.2015); *educ_uoe_grad01* for total graduates in the country (update considered: 01.12.2015).

According to Table 2, the average share of inward mobile graduates in the EU28 as a whole is 8.5%. The country with the highest rate is the UK⁴² (31.9%), closely followed by LU (29.6%). The former is obviously one of the most preferred destinations for foreign students/graduates, especially from outside the EU: more than half inward mobile graduates in the country are from Asia. This is reflected in the intra-EU indicator (right-hand panel of the table), which is around 1/5 of the general one. Other countries where the incidence of foreign mobile graduates is considerably large are NL and CH (both slightly above 15%). At the bottom of the ranking in terms of share of inward mobile graduates are HR and PL.

As for outward mobility, also inward mobility is increasing at higher educational levels. In the EU as a whole, the share of inward mobile graduates is around three times as high at ISCED 8 level than for ISCED 5-8 overall. Particularly high shares at doctoral level are found in CH, LU, UK and NL.

⁴² Once again, the lack of information on destination countries such as the US, might be artificially lowering the size of the denominator in the calculation of the indicator, therefore increasing the indicator itself.

Table 2. Inward mobility indicator for graduate learning mobility (% of graduates), 2013

Country	General					Intra-EU				
	ISCED 5-8	ISCED 5	ISCED 6	ISCED 7	ISCED 8	ISCED 5-8	ISCED 5	ISCED 6	ISCED 7	ISCED 8
AT	11.53	0.88	14.47	18.45	35.75	8.71	0.75	11.93	13.09	19.25
BE ¹	11.19	:	6.72	18.16	56.92	2.66	:	2.60	2.82	4.40
BG ²	3.32	:(z)	3.85	2.56	3.32	0.69	:(z)	0.53	0.94	0.68
CY	7.66	15.26	7.06	2.46	1.09	1.30	0.33	1.61	1.02	1.09
CZ	9.00	2.77	7.73	10.22	13.35	6.69	1.92	5.85	7.95	7.80
DE	6.59	0.00	3.30	10.49	16.46	1.51	0.00	1.06	2.23	1.28
DK	13.39	19.35	7.89	21.29	42.61	8.01	13.88	5.13	11.17	15.82
EE	2.22	:(z)	1.11	4.68	4.66	1.37	:(z)	0.86	2.53	2.32
EL ^{e 3}	6.01	:	8.81	:	:	3.20	:	4.37	:	:
ES ⁴	2.10	:	0.56	4.81	:	0.54	:	0.22	1.17	:
FI	7.01	0.00	5.23	9.20	22.04	1.27	0.00	0.79	1.65	6.56
FR ^e	5.31	1.63	4.91	7.21	47.24	0.84	0.31	0.92	0.95	5.71
HR	0.38	0.00	0.17	0.50	2.45	0.13	0.00	0.05	0.20	0.44
HU	3.79	0.39	2.87	7.34	6.65	1.99	0.25	1.60	3.54	4.18
IE	5.95	3.99	4.49	8.58	25.91	1.41	2.03	1.04	0.94	7.34
IT ^{1 5}	4.10	:	2.95	5.24	9.90	1.04	:	0.69	1.43	2.11
LT	1.33	:(z)	1.11	2.09	0.99	0.21	:(z)	0.13	0.44	0.40
LU	29.58	18.57	9.54	50.18	78.95	20.27	17.09	8.67	33.04	64.20
LV	1.56	0.32	1.59	2.79	0.29	0.50	0.09	0.54	0.80	0.29
MT	4.81	1.05	3.08	10.53	0.00	2.10	0.75	2.03	3.09	0.00
NL	15.28	0.00	10.28	24.63	62.31	8.85	0.00	6.77	13.04	19.64
PL ⁶	0.79	:(z)	0.56	1.29	:	0.14	:(z)	0.08	0.25	:
PT	3.76	:(z)	1.67	5.63	12.80	0.61	:(z)	0.37	0.77	2.07
RO	1.96	:(z)	1.55	2.44	2.99	0.36	:(z)	0.12	0.65	1.20
SE	12.24	0.15	2.43	29.75	42.98	2.23	0.08	0.79	4.15	8.10
SI	1.85	0.25	1.54	2.58	3.78	1.02	0.17	0.71	1.69	1.86
SK ^{e 7}	3.64	0.68	3.89	3.31	6.12	2.79	0.56	2.97	2.61	3.67
UK	31.90	7.88	18.54	84.74	76.35	6.65	2.60	5.28	10.55	15.74
CH	15.44	0.00	7.29	31.78	95.84					
MK	3.60	:(z)	3.43	4.27	3.58					
NO	5.54	0.18	2.19	11.62	40.26					
EU28	8.51	2.87	5.68	13.65	25.32	2.42	1.02	2.04	3.18	5.72
Europe	8.53	2.84	5.64	13.73	26.36					

Notes: ":" = Not available; "z" = Not applicable; "e" = Estimates for inward mobile graduates, 1 = Inward mobile graduates for ISCED 5 missing; 2 = Definition for inward mobile graduates differs for all ISCED levels, see Eurostat metadata; 3 = Inward mobile graduates estimated for ISCED 6 only. Other ISCED levels missing; 4 = Inward mobile graduates missing for ISCED 5 and 8; 5 = Definition for inward mobile graduates differs for ISCED 6 and 7, see Eurostat metadata; 6 = Inward mobile graduates for ISCED 8 missing; 7 = Estimates for inward mobile graduates for intra-EU. Europe is the sum of EU28 countries, CH, MK and NO. Source: Eurostat UOE data. Datasets: *educ_uoe_mobg02* for mobile graduates (update considered: 16.11.2015); *educ_uoe_grad01* for total graduates in the country (update considered: 01.12.2015).

3.2 Student learning mobility

Table 3 presents the outward mobility indicator, as percentage of students, for general and for intra-EU considering ISCED 5 to 8 as a whole and ISCED 5, ISCED 6, ISCED 7, ISCED 8 separately. In addition, the indicator is presented by country, and aggregated for Europe (see Section 2.2.2) and the EU28.

The estimates are based on the data currently available referring to the academic year 2012/2013. More detailed information can be found in Section 2.2 of this briefing. The table shows that the estimates for the outward mobility indicator at the tertiary education level vary from less than 1% in UK to almost 87% in LI. Shares for this indicator above 20% are only found in CY and LI. In MT, SK and IS the share of students is higher than 10%. In contrast, DK, ES, PL and UK have shares below 2%. For the EU28 and Europe aggregated figures, the outward mobility indicator presents a share of 3% and 4% of students, respectively. The estimates for the EU28 are in line with the ones found for the outward graduate mobility indicator which are very far from the 2020 target of 20%. However, these estimates depend on data availability, which currently presents some limitations, as previously stated (see Section 2.2.4).

Looking at the estimates by ISCED level it is clear that, as for graduates, the highest shares are found in the ISCED level 8 (Doctoral or equivalent level) followed by the master's level.

Comparing the estimates of the general mobility indicator with the ones for the Intra-EU indicator the table illustrates that slightly lower estimates are found for the latter. However these results are not directly comparable as it was explained in the previous section.

Table 3. Outward mobility indicator for student learning mobility (% of students), 2013

Country	General					Intra-EU				
	ISCED 5-8	ISCED 5	ISCED 6	ISCED 7	ISCED 8	ISCED 5-8	ISCED 5	ISCED 6	ISCED 7	ISCED 8
AT	3.85	0.16	5.58	3.81	4.87	3.18	0.13	4.63	3.25	2.67
BE ¹	2.39	1.59	1.66	5.04	8.88	2.19	1.51	1.54	4.47	6.00
BG	7.80	: (z)	7.15	8.03	10.27	7.11	: (z)	6.45	7.58	8.87
CY	47.60	7.79	55.47	30.05	48.40	44.84	6.72	52.23	28.89	47.78
CZ	2.88	20.24	3.05	2.34	2.88	2.72	19.18	2.92	2.19	2.41
DE	3.89	82.68	3.58	3.76	5.59	3.18	81.89	3.04	3.08	3.57
DK	1.26	0.32	0.91	2.39	4.54	1.05	0.26	0.73	2.06	3.24
EE	5.29	: (z)	4.36	5.80	8.37	5.08	: (z)	4.24	5.44	7.68
EL ²	:	: (z)	2.02	:	:	:	: (z)	1.77	:	:
ES	1.22	0.34	0.83	2.28	10.12	1.15	0.32	0.78	2.13	8.16
FI	2.39	62.14	1.90	4.26	1.88	2.15	61.18	1.73	3.73	1.35
FR	2.46	0.30	3.41	2.42	7.49	1.87	0.28	2.61	1.87	3.32
HR ^{3 9 10}	2.47	:	1.78	2.91	12.12	2.35	:	1.72	2.81	10.30
HU	2.26	1.14	1.60	4.47	8.26	2.09	1.12	1.50	3.97	6.94
IE	7.25	3.08	5.48	17.12	18.63	6.92	3.03	5.24	16.10	16.04
IT ³	2.33	:	1.34	2.73	18.89	2.01	:	1.13	2.46	14.68
LT	6.63	: (z)	5.79	7.39	12.87	6.34	: (z)	5.58	6.98	11.49
LU ⁴	:	18.95	:	:	:	:	18.42	:	:	:
LV	5.53	2.27	5.61	9.43	7.31	5.25	2.22	5.37	8.79	6.32
MT	12.41	3.62	9.70	17.59	80.38	8.79	1.37	3.80	16.52	79.89
NL ⁵	:	:	:	:	13.16	:	:	:	:	9.33
PL ⁶	1.12	: (z)	0.79	1.39	5.26	1.06	: (z)	0.75	1.34	4.82
PT	2.46	: (z)	1.20	3.18	8.88	2.25	: (z)	1.10	2.93	7.08
RO	4.90	: (z)	4.02	5.23	7.66	4.66	: (z)	3.90	4.85	6.59
SE	2.83	1.29	2.53	3.42	5.46	2.43	0.95	2.16	3.03	3.60
SI	2.25	0.57	1.52	3.95	7.26	2.12	0.56	1.43	3.73	6.66
SK ⁷	13.97	12.63	13.75	:	17.71	13.71	12.21	13.42	:	17.06
UK	0.66	0.25	0.39	2.02	2.27	0.52	0.23	0.32	1.34	1.31
IS	11.78	24.42	6.63	22.28	29.27					
LI ^{8 10}	86.65	:	84.79	93.66	75.00					
NO	5.40	2.72	4.33	9.14	6.94					
CH ^{8 10}	3.79	:	2.75	7.39	5.79					
MK ^{8 10}	5.66	:	3.29	27.32	57.86					
EU28	3.09	1.36	2.58	3.78	7.40	2.70	1.26	2.28	3.20	5.27
Europe	3.88	1.61	3.25	4.73	9.39					

Notes: ":" = Not available; "z" = Not applicable. For each country, outward mobility indicators are computed for the ISCED levels for which inward mobility indicators can be computed. For more details, see flags and footnotes for inward mobility indicators. 1= For ISCED 5 to 7: Data for higher adult education is not included for the Flemish Community & in ISCED 6 the definition for students enrolled differs, see Eurostat metadata; 2= Inward mobile students missing for ISCED 7 and 8 & in ISCED 7 and ISCED 5-8 data is not available for total students enrolled in the country; 3 = Inward mobile students missing for ISCED 5; 4 = Data is not available for total students enrolled in the country for ISCED 6, 7, 8 and ISCED 5-8; 5 = Data is not available for total students enrolled in the country for ISCED 5, 6, 7 and ISCED 5-8; 6 = Eurostat estimates for inward mobile students in ISCED 6 and 7; 7 = Inward mobile students missing for ISCED 7; 8= Inward mobile students missing for ISCED 5; 9 = Data on ISCED5 is included in ISCED6; 10=Data in ISCED 5 is not available for total students enrolled in the country. Europe is the sum of the "Europe" value provided by Eurostat and CY (see Section 2.2.2). Source: Eurostat UOE data. Datasets: *educ_uae_mobs02* for mobile students (update considered: 16.11.2015); *educ_uae_enrt01* for total students in the country (update considered: 20.11.2015).

Table 4 shows the shares of inward mobile students for general and for intra-EU considering ISCED 5 to 8 as a whole and ISCED 5, ISCED 6, ISCED 7, ISCED 8 alone. It also includes the indicator presented by country, and aggregated for Europe and the EU28. The share of inward mobile students for the EU28 aggregated is 8.3%. The shares for this indicator vary from 0.3% in HR to 62.9% in LI. There is a group of countries with quite high shares of mobile students, from 7% to 20%, namely AT, BE, CY, CZ, DE, DK, FI, FR, UK and CH. As for the outward mobile students, an interesting finding is that inward mobility is higher at higher educational levels, with the highest incidence at doctoral level. The analysis of the Intra-EU figures for the EU28 as a whole indicates that the inward indicator decreases significantly (to 2.7%) comparing with the general figure. The results at the country level indicate also a decrease of the share of inward mobile students for intra-EU mobility. This might be due to the very high percentage of inward mobile students coming from Asia in the general figures; in the UK, for example, more than half of the mobile students come from Asia, which explains the drop in the ISCED 5-8 indicator from the overall 21% to the 5.4% for intra-EU mobility.

Table 4. Inward mobility indicator for student learning mobility (% of students), 2013

Country	General					Intra-EU				
	ISCED 5-8	ISCED 5	ISCED 6	ISCED 7	ISCED 8	ISCED 5-8	ISCED 5	ISCED 6	ISCED 7	ISCED 8
AT	19.36	1.50	23.23	23.03	36.11	13.05	1.05	15.88	15.57	19.44
BE ¹	9.84	6.14	7.40	16.33	51.21	5.24	2.58	4.96	6.11	11.66
BG	3.92	: (z)	2.95	6.36	3.72	1.05	: (z)	0.47	2.45	0.87
CY	9.16	16.45	8.97	8.70	2.62	2.90	0.46	2.63	4.86	1.89
CZ	10.07	3.53	8.51	12.60	14.31	6.72	2.26	5.45	9.03	8.83
DE	7.32	0.00	4.46	12.79	7.25	2.01	0.00	1.34	3.70	0.00
DK	11.12	15.33	6.08	20.84	40.02	6.76	11.12	3.87	11.69	16.37
EE	2.82	: (z)	2.13	3.94	7.07	1.86	: (z)	1.67	2.23	2.68
EL ²	:	: (z)	4.70	:	:	:	: (z)	2.38	:	:
ES	2.91	5.80	0.77	5.01	17.32	0.85	1.11	0.34	1.62	3.70
FI	7.43	0.00	5.21	12.41	19.82	1.27	0.00	0.69	2.00	5.86
FR	10.57	4.34	7.91	14.76	61.50	1.59	0.80	1.44	1.83	6.81
HR ^{3 9 10}	0.30	:	0.18	0.37	2.33	0.11	:	0.04	0.22	0.20
HU	5.98	0.46	3.80	16.13	7.40	2.97	0.32	1.90	7.61	4.01
IE	6.39	2.05	5.81	9.45	27.59	2.11	0.60	1.64	3.36	11.71
IT ^{3 11}	4.50	:	4.34	4.39	11.55	1.01	:	0.92	1.10	2.08
LT	2.35	: (z)	2.17	3.07	2.47	0.41	: (z)	0.20	1.13	1.31
LU ⁴	:	14.87	:	:	:	:	14.62	:	:	:
LV	3.64	0.77	4.43	3.20	5.79	1.61	0.13	2.06	1.10	2.84
MT	4.67	1.75	2.98	10.93	1.63	2.50	0.85	2.16	4.49	1.09
NL ⁵	:	:	:	:	52.81	:	:	:	:	18.64
PL ^{6 12}	1.46	: (z)	1.15	2.18	1.54	0.31	: (z)	0.25	0.45	0.26
PT	3.98	: (z)	2.64	4.74	16.08	0.80	: (z)	0.44	1.00	3.75
RO	3.44	: (z)	1.96	6.87	3.15	0.92	: (z)	0.18	2.58	0.86
SE	6.01	0.17	2.36	9.88	43.55	1.80	0.08	0.79	2.98	8.75
SI	2.63	0.88	2.30	3.55	7.63	1.24	0.32	1.07	1.84	2.74
SK ⁷	4.39	0.43	7.13	:	7.79	3.53	0.34	5.71	:	6.11
UK	21.02	5.25	15.21	55.41	68.94	5.43	1.68	4.97	7.95	14.52
IS	6.17	19.58	5.90	4.58	17.45					
LI ^{8 10}	62.85	:	59.15	76.06	69.32					
NO	3.55	5.55	1.71	6.88	24.61					
CH ^{8 10}	19.51	:	10.96	35.00	102.67					
MK ^{8 10}	2.07	:	2.07	2.15	1.75					
EU28	8.34	4.58	5.98	11.85	21.65	2.70	1.26	2.28	3.30	5.27
Europe	8.33	4.55	5.93	11.89	22.59					

Notes: ":" = Not available; "z" = Not applicable; 1 = For ISCED 5 to 7: Data for higher adult education is not included for the Flemish Community & in ISCED 6 the definition for students enrolled differs, see Eurostat metadata; 2 = Inward mobile students missing for ISCED 7 and 8 & in ISCED 7 and ISCED 5-8 data is not available for total students enrolled in the country; 3 = Inward mobile students missing for ISCED 5; 4 = Data is not available for total students enrolled in the country for ISCED 6, 7, 8 and ISCED 5-8; 5 = Data is not available for total students enrolled in the country for ISCED 5, 6, 7 and ISCED 5-8; 6 = Eurostat estimates for inward mobile students in ISCED 6 and 7; 7 = Inward mobile students missing for ISCED 7; 8 = Inward mobile students missing for ISCED 5; 9 = Data on ISCED5 is included in ISCED6; 10 = Data in ISCED 5 is not available for total students enrolled in the country; 11 = For ISCED 6 and 7 the definition for inward mobile students differs, see Eurostat metadata; 12 = For ISCED 5 to 7 the definition for inward mobile students differs, see Eurostat metadata. Europe is the sum of EU28, CH, IS, LI, MK and NO. Source: Eurostat UOE data. Datasets: *educ_uoe_mobs02* for mobile students (update considered: 16.11.2015); *educ_uoe_enrt01* for total students in the country (update considered: 20.11.2015)

4. Conclusions

According to the benchmark for mobility in higher education (Learning Mobility in Higher Education benchmark, LMHE), agreed by the Council of Ministers of Education, Youth, Culture & Sport during its meeting on 29 November 2011: “by 2020, an EU average of at least 20 % of higher education graduates⁴³ should have had a period of higher education-related study or training (including work placements) abroad, representing a minimum of 15 ECTS credits or lasting a minimum of three months”. The first information on the number of mobile graduates was released by Eurostat during 2015, based on UOE data for the academic year 2012/2013. Starting from these data, this technical briefing provides the first estimates of the learning mobility in higher education indicators. The estimates were computed for both degree mobile graduates and mobile students, for ISCED 5 to 8 as a whole, and for the single ISCED levels. Both outward and inward mobility indicators were produced, either considering a general picture of countries for which data is available, or considering intra-EU mobility only.

According to the estimates, the LMHE indicator for the reference period is 3.5%. While this is very far from the 2020 target of 20%, it should be highlighted that this heavily depends on data availability, which currently provides a limited picture of the phenomenon. In particular, on one hand, the entire credit mobility component of the benchmark is missing, so the indicators presented in this briefing can be considered as estimates of degree mobility only; on the other hand, the lack of information on some important destination countries (e.g. the US) is likely producing a further underestimation of the phenomenon. The outward mobility indicator for students is estimated around 3% as well. A consistent cross-country variation for both indicators is however registered. In general, a higher educational level is associated with higher shares of learning mobility, with the highest shares found at the doctoral level.

⁴³ This refers to people graduating in 2020.

References

Araújo, L., Dinis da Costa, P., Flisi, S., Soto Calvo, E. (2015). *Languages and Employability*. Publications Office of the European Union; 2015; JRC97544

European Commission (2014). *The Erasmus Impact Study. Effects of mobility on the skills and employability of students and the internationalisation of higher education institutions*. Luxembourg: Publications Office of the European Union, 2014. http://ec.europa.eu/education/library/study/2014/erasmus-impact_en.pdf

European Commission (2015). *Methodological Manual on Learning Mobility in Tertiary Education*. Available [here](#).

European Commission/EACEA/Eurydice (2013). *Towards a Mobility Scoreboard: Conditions for Learning Abroad in Europe*. Luxembourg: Publications Office of the European Union, 2013.

OECD (2014). *Education at a Glance 2014: OECD Indicators*, OECD Publishing. <http://dx.doi.org/10.1787/eag-2014-en>

Rodrigues, M. (2013). *Does Student Mobility During Higher Education Pay? Evidence From 16 European Countries*. Publications Office of the European Union, 2013; JRC83872

List of abbreviations and definitions

Country	Country code
Austria	AT
Belgium	BE
Bulgaria	BG
Cyprus	CY
Czech Republic	CZ
Germany	DE
Denmark	DK
Estonia	EE
Greece	EL
Spain	ES
Finland	FI
France	FR
Croatia	HR
Hungary	HU
Ireland	IE
Italy	IT
Lithuania	LT
Luxembourg	LU
Latvia	LV
Malta	MT
Netherlands	NL
Poland	PL
Portugal	PT
Romania	RO
Sweden	SE
Slovenia	SI
Slovakia	SK
United Kingdom	UK
Switzerland	CH
Iceland	IS
Liechtenstein	LI
Former Yugoslav Republic of Macedonia	MK
Norway	NO
Turkey	TR
Europe	EUR
Russia	RUS
Australia	AUS
Canada	CAN
Japan	JP
Africa	AFR
Northern America	AME_N
United States	US
Central and South America	AME_C_S
Mexico	MX
Brazil	BR
Chile	CL
Asia	ASI
China (including Hong Kong)	CN
Japan	JP
South Korea	KR

India	IN
Israel	IL
Oceania	OCE
Australia	AU
New Zealand	NZ
World total except for the reporting country	WRL_X_REP

ISCED 2011 levels

ISCED5-8	Tertiary education (levels 5-8)
ISCED5	Short-cycle tertiary education
ISCED6	Bachelor's or equivalent level
ISCED7	Master's or equivalent level
ISCED8	Doctoral or equivalent level

List of tables

Table 1. Outward mobility indicators for graduate learning mobility (% of graduates), 2013

Table 2. Inward mobility indicator for graduate learning mobility (% of graduates), 2013

Table 3. Outward mobility indicator for student learning mobility (% of students), 2013

Table 4. Inward mobility indicator for student learning mobility (% of students), 2013

Europe Direct is a service to help you find answers to your questions about the European Union
Free phone number (*): 00 800 6 7 8 9 10 11
(*) Certain mobile telephone operators do not allow access to 00 800 numbers or these calls may be billed.

A great deal of additional information on the European Union is available on the Internet.
It can be accessed through the Europa server <http://europa.eu>

How to obtain EU publications

Our publications are available from EU Bookshop (<http://bookshop.europa.eu>),
where you can place an order with the sales agent of your choice.

The Publications Office has a worldwide network of sales agents.
You can obtain their contact details by sending a fax to (352) 29 29-42758.

JRC Mission

As the Commission's in-house science service, the Joint Research Centre's mission is to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle.

Working in close cooperation with policy Directorates-General, the JRC addresses key societal challenges while stimulating innovation through developing new methods, tools and standards, and sharing its know-how with the Member States, the scientific community and international partners.

*Serving society
Stimulating innovation
Supporting legislation*