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on recent developments in European high educations systems

Accompanying the document

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS

Supporting growth and jobs – an agenda for the modernisation of Europe's higher education systems

{COM(2011) 567}

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1. INTRODUCTION

Higher education plays an essential role in Europe's collective well-being, creating new knowledge, transmitting it to students and fostering innovation. Within Europe, national and regional governments are responsible for education and training systems and individual higher education institutions have considerable, albeit variable, autonomy in organising their own activities. However, many challenges facing higher education are similar across the EU and there are clear advantages in working together. The role of the European Commission is thus to support the efforts of public authorities and institutions themselves to modernise Europe's higher education systems to respond to today's social and economic challenges.

Against this backdrop, the Commission's Communication on Supporting growth and jobs – an agenda for the modernisation of Europe's higher education systems presents an updated reform agenda for higher education in Europe to help focus European support, as well as action at national and institutional level.

This Staff Working Paper provides background information and evidence to underpin the messages of the Communication, covering the following issues:

(1) The key characteristics of higher education in today's Europe;

(2) Evidence on the economic and social contribution of higher education

(3) The changing student population;

(4) The evolving skills requirements to which higher education needs to respond;

(5) The ways higher education institutions contribute to innovation;

(6) Funding and governance of higher education – at system and institutional level

(7) The internationalisation of higher education.

1. THE CHANGING FACE OF EUROPEAN HIGHER EDUCATION

1.1. European higher education: a diverse institutional landscape

Europe's higher education landscape is made up of more than four thousand higher education institutions, all operating within the legal and administrative frameworks of their national or regional higher education systems. Considerable diversity remains in European higher education, *between systems*, which retain their own characteristics, *between institutions*, which vary in size, mission and profile and even, *within institutions*[1].

Institutional diversity is one of the key strengths of higher education in Europe. From large, research-intensive universities, to small, specialised teaching colleges, different institutional forms all have their role to play. Experience from across the world has shown that diversity in

[1] Reichert, S (2009)

higher education systems has a positive impact on performance[2]. In comparison to more homogenous systems, diversified higher education systems are argued to:

(1) *Meet a wider range of student needs*: a more diversified system is better able to offer access to higher education to students with different educational backgrounds, with a positive influence on overall levels of access and on social mobility;

(2) *Respond better to labour market needs*: institutional diversity makes it easier to meet the requirements of a changing labour market, with an increasing variety of specialisations;

(3) *Be more effective*: diversity favours institutional specialisation, which allows higher education institutions to focus their attention and energy on what they do best;

(4) *Be more innovative*: diversity offers greater possibilities for exploring new approaches, without the need for all institutions to implement changes at the same time, reducing risks and favouring mutual learning.

Differences between higher education *systems* are also important. National and regional systems serve the needs of their own populations, societies and economies. There can be no "one size fits all" for the most appropriate mix of institutional types and forms. Those responsible for defining the legal and administrative frameworks for higher education across Europe face the challenge of creating the conditions for the most appropriate institutional mix for their specific requirements. But to do this, it is first important to understand the existing diversity that exists within and between individual systems.

Whereas the US has long had the Carnegie Classifications[3] as a tool to help understand the American higher education landscape and facilitate the task of taking a system-wide perspective, no such consistent overview currently exists in Europe, where the diversity of national systems makes such classification even more challenging. The EU-sponsored U-Map and U-Multirank projects have sought to address this gap in knowledge.

Box 1-1: Improving understanding of higher education systems: U-Map and U-Multirank

U-Map[4]

Started in 2005 and finalised in 2010, the U-Map project developed a classification model to categorise the rich diversity of higher education institutions, taking inspiration from the well-established Carnegie Classification used in the US. The project developed a categorisation of the different missions of higher education institutions, involving five dimensions: teaching and learning; research; innovation and knowledge transfer; regional engagement and internationalisation. A web-based tool was used to allow higher education institutions to categorise themselves according to their activities within the different dimensions. The development of the U-map classification model is ongoing, with four European countries currently testing the approach.

2 See van Vught, F.A.et al. (2010)
3 http://classifications.carnegiefoundation.org/
4 See http://www.u-map.eu/

U-Multirank[5]

Launched in May 2009, the U-Multirank feasibility study builds on the experience of the U-Map project. The core objective of the work has been to develop and test a tool to provide comparable and accurate information on higher education programmes and institutions, going beyond the research focus found in most existing comparisons and rankings. This has involved defining indicators and collecting data directly from 150 higher education institutions within and outside the EU on their activities and performance in the five areas used in the U-Map classification. The test phase has initially focused on the fields of engineering and business studies.

The data tool developed has been designed to allow users to generate personalised rankings, making it possible to compare institutions using a wider range of variables than used in existing university rankings. The results of the study, presented at a final conference on 9 June 2011, show that this multidimensional ranking concept is workable in practice, although further work will be needed to refine the indicators used in certain dimensions. As the Multirank concept relies on the new data and the voluntary participation of institutions, gaining the buy-in of institutions will be crucial. The European Commission is now working on proposals to further develop the information tool.

1.2. Convergence in European higher education systems

Although diversity remains a dominant characteristic of the higher education landscape in Europe, intensive cooperation between European countries over the last decade has also brought about a significant degree of convergence. Efforts have been focused on creating the European Higher Education and Research Areas, in which national higher education and research systems become more compatible and comparable, thus facilitating increased interaction and mobility of students, graduates and staff across borders.

The development of the European Higher Education Area

With the 1999 Bologna Declaration, the governments of 29 European countries agreed to establish a coherent and attractive European Higher Education Area (EHEA). Since extended to 47 countries[6], the core focus of the Bologna Process has been on structural reforms aimed at making European higher education systems more coherent and effective by establishing a set of common features:

(1) A three-cycle degree structure (with bachelor, master and doctoral qualifications);

(2) The generalisation of the European Credit Transfer and Accumulation System (ECTS)[7] and the Diploma Supplement (DS)[8];

(3) National Qualification Frameworks (NQF) to describe clearly the different cycles and qualifications in national education systems, based on learning outcomes

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5 See http://www.u-multirank.eu/

6 EU 27 + Iceland, Norway, Switzerland, Croatia, Liechtenstein, Turkey, Albania, Andorra, Bosnia and Herzegovina, The Holy See, Russia, Serbia, Macedonia, Armenia, Azerbaijan, Georgia, Moldova, Ukraine, Montenegro and Kazakhstan

7 A student-centred credit system based on the student workload required to achieve specified learning outcomes

8 A standardised template containing a description of the nature, level, context, content and status of studies completed by an individual student

achieved, thus allowing comparison with the Qualifications Framework for the European Higher Education Area (QF-EHEA)[9];

(4) Recognised national quality assurance systems, consistent with European Standards and Guidelines (ESG) for quality assurance adopted in 2005 and articulated at European level[10].

(5) Mutual recognition of qualifications and learning credits (supported by the elements above), in line with the Lisbon Recognition Convention[11].

In addition to these structural reforms, the initial scope of the Bologna Process was swiftly expanded to encompass the social dimension[12] of higher education - in particular widening access to under-represented groups - and measures to embed higher education into wider systems of lifelong learning. The Bologna Process has provided the EU's own higher education modernisation agenda with additional momentum. The European Commission has supported the work of the Bologna Follow-up Group (BFUG) and funded Bologna-related initiatives, notably under the centralised actions of the Erasmus strand of the Lifelong Learning Programme[13].

Implementation of the Bologna Process has been monitored closely by the main stakeholder groups[14]. While the different assessments of progress start from different perspectives, there is a broad consensus that Bologna has led to greater convergence in the architecture of national higher education systems and has achieved real impact in higher education institutions and systems across the EU.

9 Which has subsequently been linked to the wider European Qualifications Framework (EQF), launched by the EU and covering all levels of education and training

10 Notably through the European Quality Assurance Register for Higher Education (EQAR);

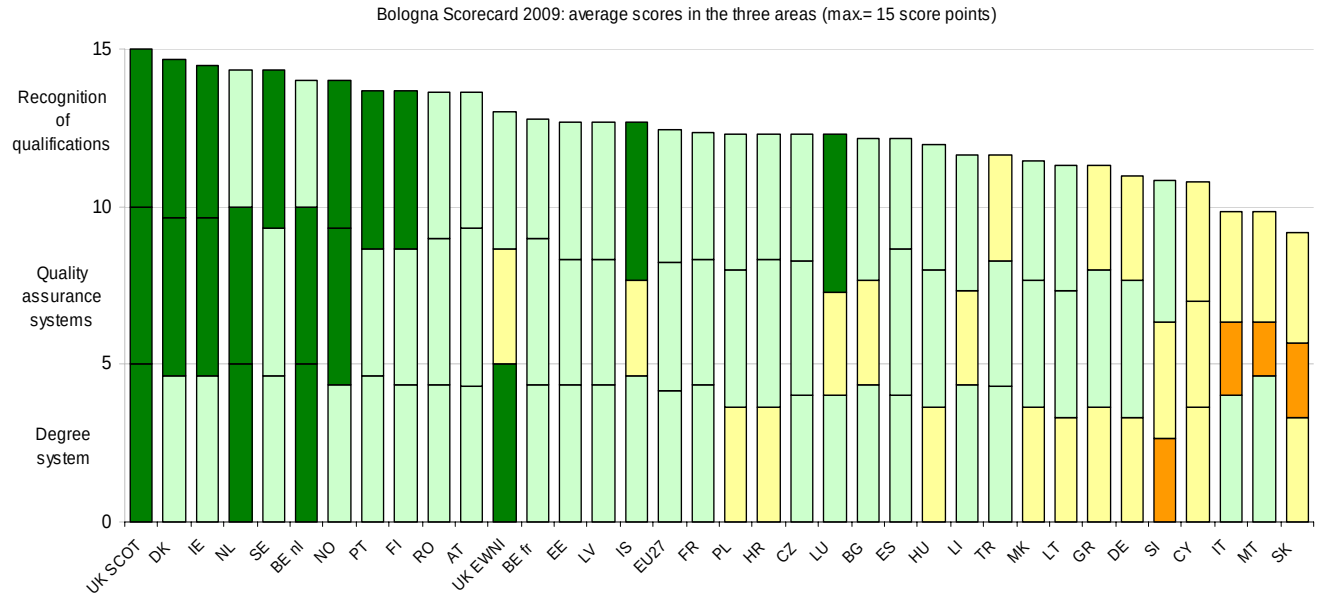
11 Council of Europe and UNESCO Convention on the Recognition of Qualifications concerning Higher Education in the European Region, April 1997

12 The London Communiqué of 2007 defines the social dimension as the "societal aspiration that the student body entering, participating in and completing higher education at all levels should reflect the diversity of our populations"

13 See European Commission (2010a)

14 See, for example, Rauhvargers, Deane and Pauwels (2009), ESU (2009), EUA (2010), Eurydice (2010)

Figure 1-1: Bologna "Scorecards" degree structure, quality assurance, recognition, 2009



Source: Bologna Stocktaking Report 2009

(UK SCOT: Scotland, UK EWNI: England, Wales and Northern Ireland)

As shown in Figure 1-1, based on the stock-taking exercise undertaken for the 2009 meeting of Bologna ministers in Leuven and Louvain-la-Neuve, nearly all EU Member States have made considerable progress in the core Bologna areas of degree structure reform, establishment of quality systems for higher education and recognition of learning outcomes gained abroad. This is a pattern confirmed by the European University Association's most recent *Trends* review, which found 95% of higher education institutions in Europe had implemented the Bologna degree structure[15]. However, the same review highlights ongoing variation between Member States in the implementation of structural reforms at system level. In particular, the Bologna Process reforms have not been applied consistently to all types of higher education programmes, with courses in specific professional fields, including medicine, veterinary science, architecture and law, have more frequently retained distinct degree structures. Moreover, as the Bologna Process focused on course structure, rather than the substance of what is taught, there has been limited convergence in the content education programmes in professional fields. This creates particular challenges for authorities at national level dealing with academic or professional recognition of diplomas obtained in other Member States.

The evidence from the range of reviews of the Bologna Process indicates a number of areas where further progress is required to fully achieve the objectives of the European Higher Education Area. In particular:

- Further progress is needed to achieve the comparable and consistent implementation of ECTS and the Diploma Supplement, including in relation to the content of specific professional fields, such as medicine, and the consistent allocation of credits to

15 EUA (2010)

student workload and learning outcomes: a 2010 study[16] found that full implementation had been achieved in only 12 countries in the EHEA.

- The development of National Qualifications Frameworks has proved to be challenging, leading to an extension of the deadline for implementation until 2012: the existence of NQFs, linked to the overarching Qualifications Framework for the European Higher Education Area[17] and the European Qualifications Framework (EQF)[18], is an important pre-requisite for smooth recognition of learning outcomes across borders;

- There is evidence of students and graduates still facing considerable difficulties in achieving recognition for qualifications and credits gained abroad[19];

- Quality assurance systems frequently focus on the accreditation of specific programmes based on minimum quality thresholds, rather than actively seeking to stimulate continuous improvement in the programmes that meet the minimum standards. Studies have highlighted an ongoing perception of variation in the quality of higher education between countries, which undermines the effective functioning of the EHEA[20];

- Progression routes into higher education from other parts of the education system and well developed procedures for Recognition of Prior Learning (RPL) are absent or in need of improvement in many Member States[21];

- Considerable differences exist in Member States' interpretation of the social dimension of the Bologna Process and there are comparatively few examples of significant policy reform in this area (see below[22]);

- While the place of higher education in lifelong learning systems is recognised as a relevant policy issue in most Member States, this remains a peripheral concern in many countries[23].

2. THE CONTRIBUTION OF HIGHER EDUCATION TO SMART, SUSTAINABLE AND INCLUSIVE GROWTH

2.1. Higher education's contribution to the EU growth agenda

Although the interaction between higher education systems and the wider society and economy is complex, it is clear that higher education institutions contribute to socio-economic development in two principal ways. First, they contribute to human capital development by allowing individuals to acquire and develop a wide range of knowledge and skills, which they

16 CHEPS 2010a
17 Agreed by European Ministers of Higher Education at their meeting in Bergen 2005
18 Adopted for all strands of education and training by the EU Council and Parliament
19 See, for example, ESU (2009)
20 CHEPS 2010a
21 Eurydice (2010)
22 Also refer to Eurydice (2011)
23 Eurydice (2010)

can subsequently draw upon as individuals (creating "individual returns" in terms of personal fulfilment and income) and for the good of society and economy more generally (so-called "societal returns"). Second, as centres of knowledge creation, higher education institutions are able to contribute to innovation in the wider economy, notably through exchanging expertise, knowledge and research findings with other economic actors.

These two main processes are closely inter-linked. For example, human capital development is a pre-requisite for excellent basic and applied research and effective knowledge transfer activities. At the same time, the quality and relevance of higher education institutions' human capital development activities - essentially their study programmes – is influenced by inputs from the world of research and from actors in the wider economy.

As stressed in the Europe 2020 Strategy, the availability of highly skilled human capital and well-functioning innovation systems are crucial perquisites for Europe's future well-being.

As discussed in more depth in Section 4, a significant body of evidence underlines the importance of a skilled workforce in underpinning the type of knowledge-based economy that will allow the EU to compete effectively with other world regions. Highly skilled, creative individuals with critical mindsets are needed to create the businesses of the future and more generally to help business and the public sector to innovate. Within this context, higher education staff play a crucial role in transmitting knowledge through well-designed and structured programmes of education and research. At the same time, programmes need to be based on scientific excellence and can benefit from insights from business and other organisations external to higher education. As discussed in more detail below, higher education increases the employment and earnings potential of individuals, which, in turn, has positive impacts on social inclusion.

Better exploitation of the expertise and knowledge found in higher education institutions can strengthen innovation potential and, thus, economic performance at regional, national and European level. Research and development work in higher education institutions also makes a decisive contribution to Europe's response to environmental challenges and the EU's long-term environmental sustainability.

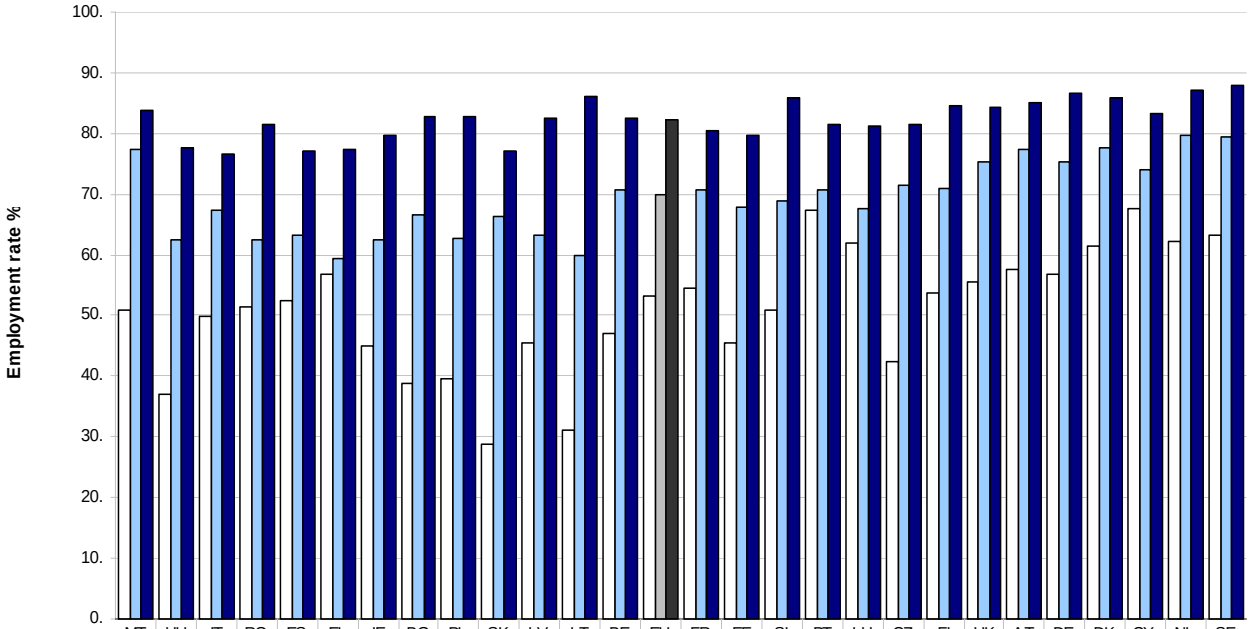
2.2. Higher education and employment

Evidence from across the world illustrates the positive impact of higher education attainment on employment outcomes, at both individual and societal level. European higher education graduates, in common with their counterparts in other developed economies, have significantly higher rates of employment than those with less advanced levels of qualification. Projections of skills requirements in the European economy in the coming decade (see Section 4.1) highlight increasing demand for the skills types provided by both higher education and high-quality vocational education and training. Education and training systems must thus cater to the needs of the economy as a whole. Nevertheless, the positive employment outcomes for higher education graduates illustrate the clear demand for such highly qualified individuals in the European economy.

As shown in Figure 2-1, based on the latest quarterly employment figures, the employment rate of those aged 20-64 with tertiary education qualifications is higher than the overall employment rate and the rate for individuals with only upper secondary qualifications in all EU Member States. Furthermore, the EU average employment rate for tertiary graduates

stands at over 82% and is above 75% (the Europe 2020 employment target) in all Member States.

Figure 2-1: Employment rates by level of educational attainment - 20-64 years (2010 Q4)



	MT	HU	IT	RO	ES	EL	IE	BG	PL	SK	LV	LT	BE	EU	FR	EE	SI	PT	LU	CZ	FI	UK	AT	DE	DK	CY	NL	SE
Low er Secondary	51	37	49.8	51.5	52.5	56.7	45	38.7	39.7	28.7	45.5	31.2	47.1	53.3	54.6	45.5	50.8	67.3	62	42.3	53.8	55.4	57.6	56.7	61.5	67.7	62.2	63.3
Upper Secondary	77.3	62.4	67.3	62.4	63.2	59.4	62.4	66.6	62.8	66.4	63.3	59.9	70.8	69.9	70.6	67.9	69	70.6	67.6	71.4	71	75.3	77.4	75.4	77.6	74.1	79.6	79.5
Tertiary	83.9	77.7	76.6	81.5	77.1	77.5	79.8	82.8	82.9	77.0	82.4	86	82.6	82.3	80.4	79.6	85.9	81.5	81.3	81.5	84.6	84.2	85.1	86.7	85.8	83.2	87.1	88

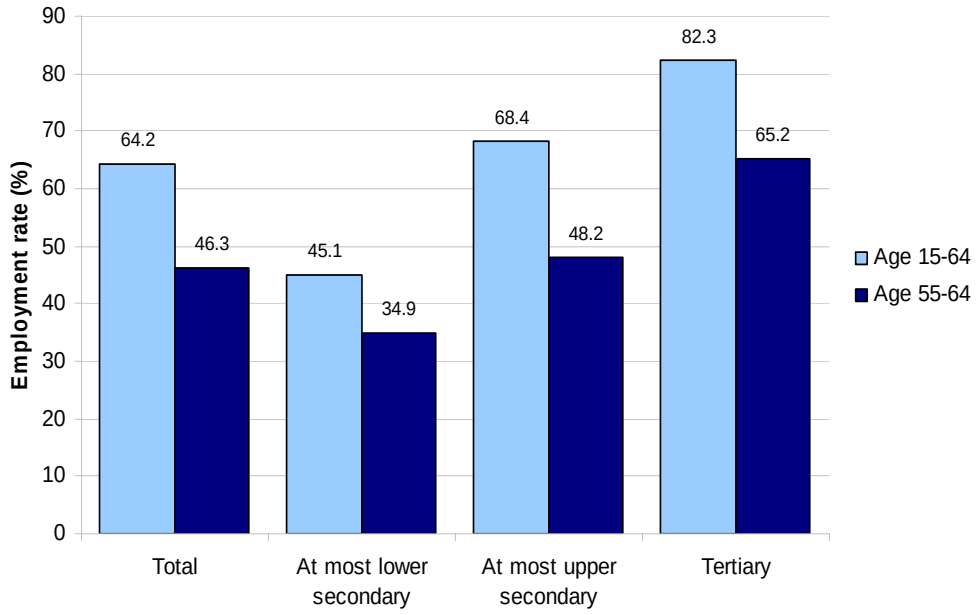
Source: Eurostat, EU Labour Force Survey

The "employment advantage" of tertiary graduates over those with only upper secondary qualifications is highest in central and eastern European Member States[24], along with Greece and Ireland, where employment rates for tertiary education graduates remain near the EU average, but rates for the less qualified population are comparatively low. Even in countries such as Austria, the Netherlands, Denmark and Sweden where the labour market participation differences between qualification groups are lowest, employment rates among tertiary graduates still exceed those among upper secondary graduates by at least 7.5 percentage points.

The difference in labour force participation between those with high and lower qualification levels is especially marked in older age groups. Those with a tertiary level qualification are almost twice as likely to be economically active beyond the age of 55 as those who did not complete upper secondary school: over 65% of 55-64 year olds with higher education are employed, compared to less than 35% of the same age group without upper secondary qualifications. These patterns to some extent reflect a tendency for lower qualified populations to work in more physically demanding jobs, in which is it more difficult to continue working to the age of 65, although the relative decline in manual occupations is likely to have decreased this difference between qualification groups.

[24] Employment rates for tertiary graduates are over 15 percentage points higher than rates among upper secondary graduates in LT, PL, LV, RO, SI, BU and HU.

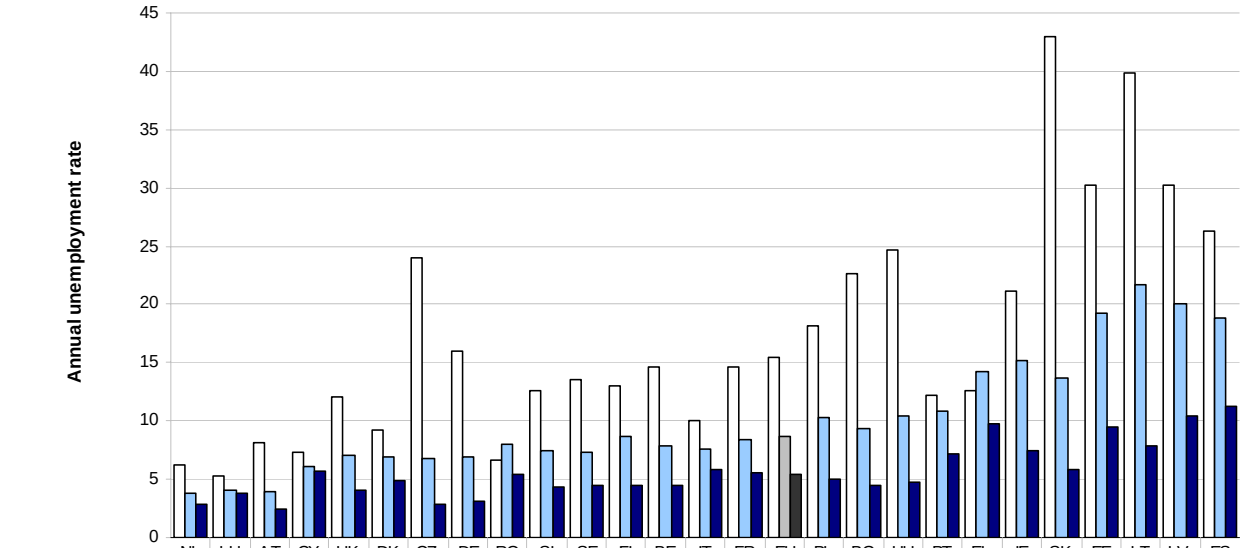
Figure 2-2: Employment rates by age group (2010 Q4)



Source: Eurostat, EU Labour Force Survey

While the effects of the recent economic crisis on employment in the EU have been severe, the impact on tertiary education graduates has been less dramatic than on those with lower levels of qualification. At the end of 2010, the average unemployment rate among graduates in the EU was 5.4%, compared to an overall unemployment rate of 9.3%. Moreover, as shown in Figure 2-3, graduate unemployment remains significantly below that experienced by those with lower levels of qualification in all Member States. This said, (tertiary) graduate unemployment is around or above 6% in eight Member States (Greece, Estonia, Lithuania, Ireland, Portugal and Slovakia) and is running at over 10% in two (Spain and Latvia).

Figure 2-3: Annual unemployment rates by highest level of education attained 2010



	NL	LU	AT	CY	UK	DK	CZ	DE	RO	SI	SE	FI	BE	IT	FR	EU	PL	BG	HU	PT	EL	IE	SK	EE	LT	LV	ES
Low er Secondary	6.2	5.3	8.2	7.3	12	9.2	24	16	6.7	12.6	13.5	13.0	14.7	10.0	14.6	15.4	18.2	22.7	24.7	12.2	12.6	21.1	43	30.2	39.8	30.2	26.3
Upper Secondary	3.8	4	3.9	6.1	7	6.9	6.8	6.9	8	7.5	7.3	8.7	7.9	7.6	8.4	8.7	10.3	9.3	10.5	10.9	14.2	15.2	13.7	19.3	21.7	20.1	18.8
Tertiary	2.8	3.8	2.4	5.7	4.1	4.9	2.8	3.1	5.4	4.3	4.5	4.5	4.5	5.8	5.5	5.4	5	4.5	4.7	7.2	9.8	7.5	5.8	9.5	7.8	10.5	11.3

Source: Eurostat, EU Labour Force Survey

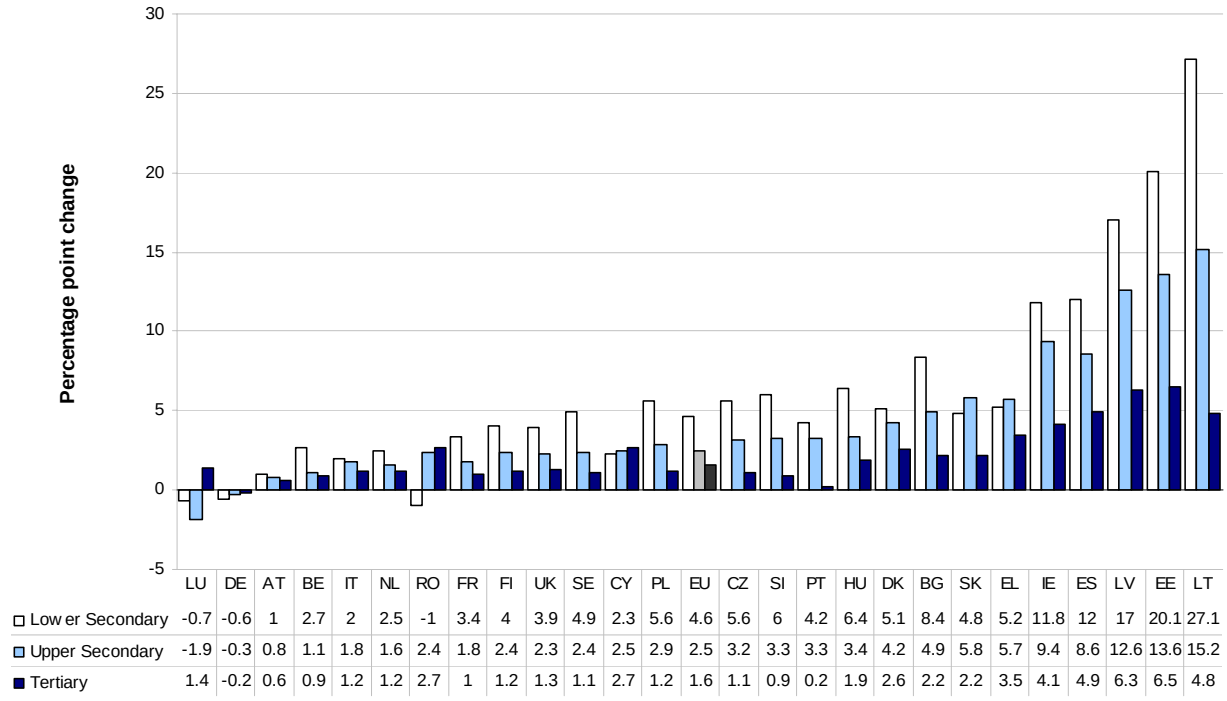
Comparing unemployment rates among the different qualification groups before and after the height of the economic crisis (average rates for the years 2008 and 2010 – See Figure 2-4), serves to confirm the general pattern that higher education graduates have been comparatively protected from unemployment. However, two main caveats should be highlighted. Firstly, although unemployment among graduates has increased far less dramatically than among lower qualified groups in most Member States, there have been increases in 26 EU countries and the rate has more than doubled in six (the three Baltic States, Ireland, Romania and Denmark), with the attendant social consequences. Secondly, in a small number of Member States graduate unemployment rates have bucked the general trend, with either increases higher than for other qualification groups (Romania and Cyprus) or lower rates of decline (Germany and Luxembourg).

A complex range of factors have affected changes in graduate unemployment rates. National economic structures and the extent to which different sectors of the economy have been affected by the economic downturn have undoubtedly played an important role. For example, the financial services industry, which traditionally recruits a relatively higher proportion of its staff among higher education graduates, has been particularly hard hit by the economic crisis, with consequent impacts on employment and new recruitment[25]. In some cases, graduate unemployment may be explained by mismatches between the number of graduates in particular disciplines and the relevance of their qualifications and skills and current labour market requirements. More detailed analysis of labour market trends – including through tools

[25] The most recent job vacancy data shows an increase in recruitment in the finance sector – see, for example, European Commission (2011d)

such as the new European Vacancy Monitor[26] – as well as future skills requirements is required to fully understand the extent of such mismatches.

Figure 2-4: Percentage point change in unemployment rates by educational attainment - 2008 to 2010



	LU	DE	AT	BE	IT	NL	RO	FR	FI	UK	SE	CY	PL	EU	CZ	SI	PT	HU	DK	BG	SK	EL	IE	ES	LV	EE	LT
Lower Secondary	-0.7	-0.6	1	2.7	2	2.5	-1	3.4	4	3.9	4.9	2.3	5.6	4.6	5.6	6	4.2	6.4	5.1	8.4	4.8	5.2	11.8	12	17	20.1	27.1
Upper Secondary	-1.9	-0.3	0.8	1.1	1.8	1.6	2.4	1.8	2.4	2.3	2.4	2.5	2.9	2.5	3.2	3.3	3.3	3.4	4.2	4.9	5.8	5.7	9.4	8.6	12.6	13.6	15.2
Tertiary	1.4	-0.2	0.6	0.9	1.2	1.2	2.7	1	1.2	1.3	1.1	2.7	1.2	1.6	1.1	0.9	0.2	1.9	2.6	2.2	2.2	3.5	4.1	4.9	6.3	6.5	4.8

Source: Eurostat, EU Labour Force Survey

Notwithstanding the more negative graduate employment trends observed recently in certain Member States, the private returns for higher education graduates in terms of earnings potential remain good. Table 2-1, showing the median net income in EU Member States for the population aged 18-64, with different levels of qualification. It highlights that those with higher educational attainment earn more in all Member States (despite very large variation in average earnings between countries). The highest income premiums for tertiary graduates, compared to those with only upper secondary qualifications are found in Central and Eastern Europe, Portugal and Greece and the lowest in the Nordic countries, Austria, the Netherlands and Belgium. These aggregate figures naturally hide variations in the earning outcomes of graduates from different disciplines. While *on average* a higher education qualification is likely to allow an individual to achieve higher earnings than someone with a lower level of qualification, this is naturally not always the case.

[26] See http://ec.europa.eu/social/main.jsp?catId=955&langId=en

Table 2-1: Annual median equivalised net income for the population aged 18-64 by educational attainment (2009)

Figures in Euro	Below upper secondary education	Upper secondary education	Tertiary education
EU 27	12,700	14,800	21,500
Belgium	15,400	19,800	25,000
Bulgaria	1,900	3,100	4,100
Czech Republic	5,900	7,400	9,700
Denmark	21,000	25,400	30,600
Germany	15,500	18,300	23,200
Estonia	4,500	6,000	8,100
Ireland	17,700	23,800	32,100
Greece	9,700	11,900	17,600
Spain	11,500	14,800	19,500
France	17,600	20,200	25,900
Italy	13,800	18,200	24,500
Cyprus	13,100	17,700	23,600
Latvia	3,700	5,600	8,200
Lithuania	3,500	4,700	7,400
Luxembourg	27,100	32,800	46,400
Hungary	4,000	4,900	6,800
Malta	9,100	12,200	15,500
Netherlands	17,400	20,500	26,200
Austria	16,100	20,900	25,300
Poland	4,000	5,100	8,100
Portugal	7,900	10,700	17,900
Romania	1,600	2,500	4,400
Slovenia	9,900	11,900	16,500
Slovakia	4,500	5,700	7,500
Finland	16,700	20,600	26,900
Sweden	17,100	21,500	25,100
United Kingdom	12,800	16,300	22,900

Source: Eurostat, EU-SILC, 2009 (dataset: ilc_di08).

Comparing the average income levels of graduates with those of individuals who did not pursue higher education is a key component in assessing the private returns to higher education. However, the other side of the equation – the private costs of pursuing higher education resulting from living expenses and, increasingly, tuition or registration fees – also plays an important role in calculating rates of return and affects individual decisions on whether or not to continue studying[27].

There is a compelling body of evidence to show that the average private returns on pursuing higher education are positive and substantial across the developed world[28]. CEGES (2007), calculated private rates of return to higher education of between 4.3% and 14.8% in a selection of EU countries and the US.

2.3. Higher education, social returns and economic performance

Importantly for those making public spending decisions, investment in higher education has also been shown to deliver positive returns for the wider society and economy, even though

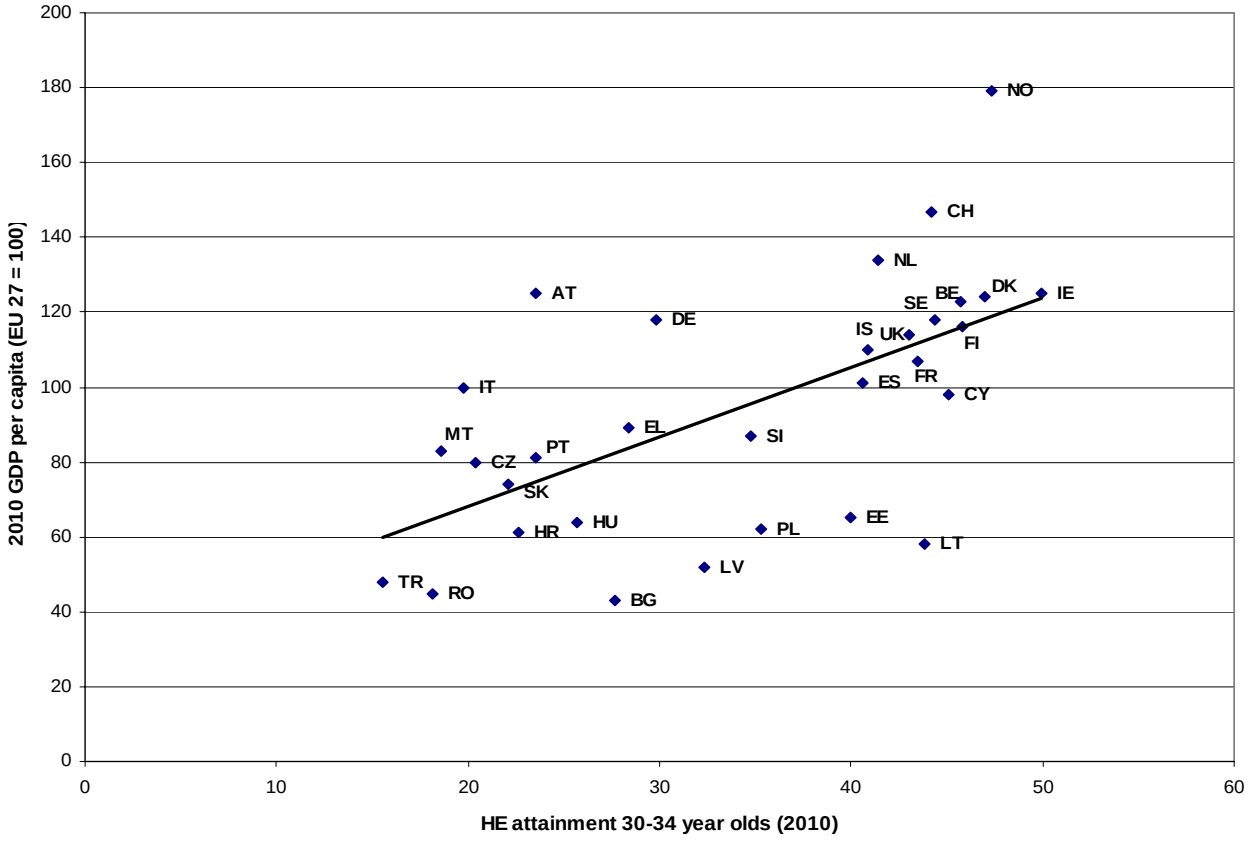
[27] These costs are examined in more detail in Section 7 on higher education funding.

[28] See, for example CEGES (2007), OECD (2010a)

accurate estimation of the scale of such social returns is far more complex than for individuals. In the narrowest sense, social rates of return to investment in the teaching function of higher education focus on the productivity of graduates compared to those with lower levels of qualification. Ideally, estimation of social returns should also include a wider set of external benefits that higher education graduates bring to society (social externalities). Research into the effect of investment in higher education on productivity has revealed a clear positive correlation and overall positive rates of "social return": in other words, investment in higher education is "profitable", once the costs of investment and social opportunity costs have been factored in. Further progress is required in order to be able to assess the wider social impacts of higher education, which are inherently more difficult to measure.

The positive impact of higher education attainment on productivity is an important explanatory factor in the relatively strong correlation between levels of higher education attainment and overall economic output (GDP) per capita, as illustrated in Figure 2-5.

Figure 2-5: Higher education attainment (30-34 year olds) and GDP per capita in 2010



Source: Eurostat (Data for EU-27 + Norway, Switzerland, Croatia and Turkey)

While the relationship between educational attainment and GDP per capita is clear, two main groups of "outlier" states can be observed in Europe. Firstly, there are countries (notably Italy, Austria and Germany) where economic output per capita is comparatively high in relation to the level of higher education attainment. In Germany and Austria in particular, this is partly explained by the existence of a strong high-level vocational educational offer, which is not categorised as tertiary education but provides comparatively high-level skills for the economy

(ISCED 4[29]). A second group includes EU Member States where higher education attainment rates are comparatively high in relation to current levels of GDP per capita. These are all Central and Eastern European Member States (notably the three Baltic States and Poland) which have seen a transition from centrally planned to market-based economies in the last two decades. The ongoing process of economic restructuring means the economic benefits of a highly qualified workforce are not yet fully reflected in output levels.

3. THE CHANGING DEMOGRAPHICS OF HIGHER EDUCATION

Having examined the influence of higher education and related research activities on employment and economic performance at a "macro" level, it is useful to examine different aspects of Europe's higher education systems in more depth. This section focuses on human capital development and, more specifically Europe's population of students and graduates.

3.1. The massification of higher education

Between 2000 and 2009, the number of higher education students in the EU increased by 22.3% to reach over 19.4 million. This trend – corresponding to an average annual growth rate of 2.3% - occurred against the backdrop of a slowly decreasing population of 20-24 year olds in the EU (the typical student age cohort) and is explained by significant growth in higher education participation rates in the EU population and an increase in the number of students from outside Europe studying in the EU[30].

Table 3-1: Tertiary students by country (2000-2009)

	Number of tertiary students (in 1000)			Growth per year
	2000	2008	2009	2000-09
EU-27	15921	19040	19473	2.3
Belgium	356	402	425	2.0
Bulgaria	261	264	274	0.5
Czech Republic	254	393	417	5.7
Denmark	189	231	235	2.4
Germany	2055	2245	2439	1.9
Estonia	54	68	68	2.7
Ireland	161	179	183	1.4
Greece	422	638	:	:
Spain	1829	1781	1801	-0.2
France	2015	2165	2173	0.8
Italy	1770	2014	2012	1.4
Cyprus	10	26	31	12.9
Latvia	91	128	125	3.6
Lithuania	122	205	211	6.3
Luxembourg	2	:	:	:
Hungary	307	414	398	2.9
Malta	6	9	10	5.6
Netherlands	488	602	619	2.7

29 Post secondary, non-tertiary education.

30 In 2008, almost 1 million of the 19 million students in the EU (5.2%) were nationals of non-EU countries.

	Number of tertiary students (in 1000)			Growth per year
	2000	2008	2009	2000-09
Austria	261	285	308	1.9
Poland	1580	2166	2150	3.5
Portugal	374	377	373	0.0
Romania	453	1057	1098	10.3
Slovenia	84	115	114	3.5
Slovakia	136	229	235	6.3
Finland	270	310	297	1.0
Sweden	347	407	423	2.2
United Kingdom	2024	2329	2415	2.0

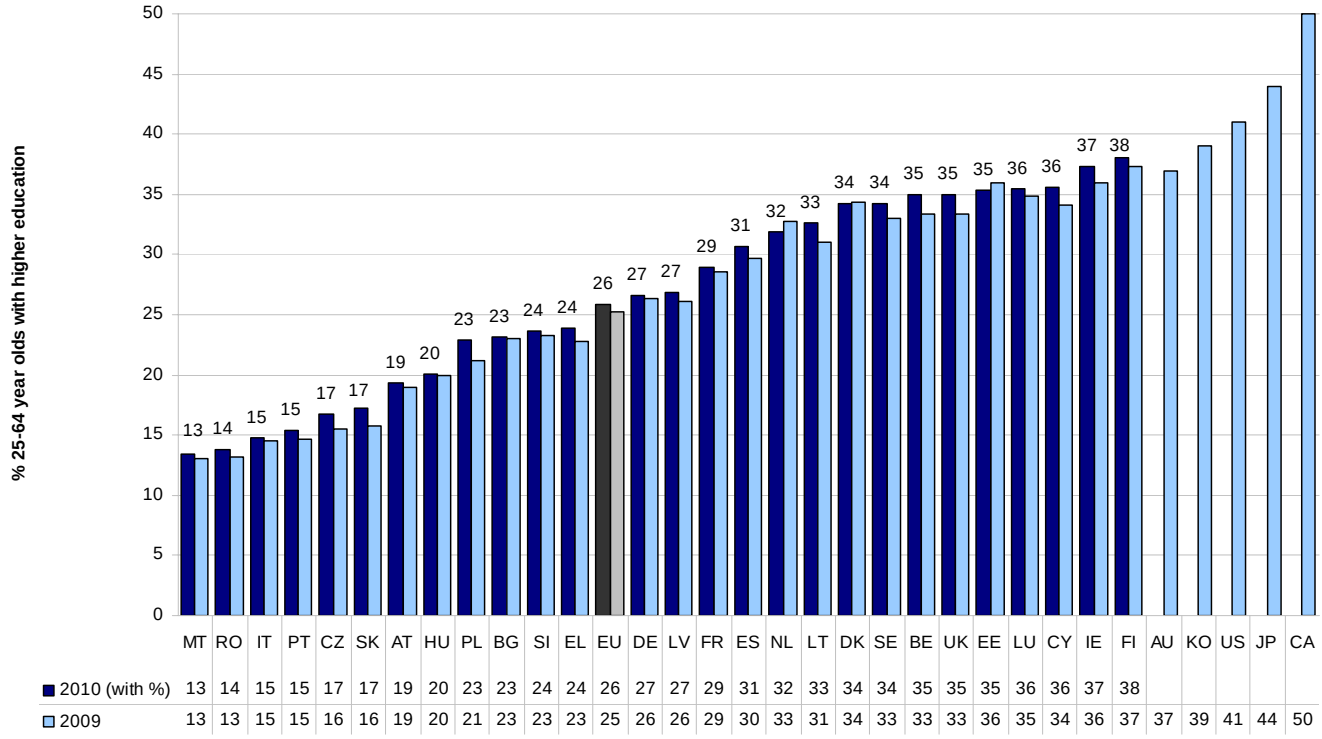
Source: Eurostat, UOE

As shown in **Table 3-1**, the highest rates of increase in student numbers have been seen in the newer EU Member States (EU-12), which, with the exception of Bulgaria, have all seen growth rates in enrolment figures in excess of the EU-27 average. Romania and Cyprus have both seen annual increases in student numbers of over 10%, reflecting the large-scale expansion of higher education provision in both countries from 2000 onwards. In contrast, countries in Northern, Western and Southern Europe – most of which already had higher rates of higher education participation – saw lower levels of growth. Spain was the only country to register a small decrease in student numbers over the same period.

Despite the large-scale expansion of higher education in the last decade, the EU as a whole still lags behind many of its competitors in terms of the proportion of the active population with a tertiary education qualification. As shown in Figure 3-1, despite increases in recent years[31], only 26% of the population aged between 25 and 64 in the EU has a tertiary education qualification, compared with 37% of the equivalent Australian population, over 40% of US and Japanese residents and 50% of those living in Canada. Although the best performing EU Member States have higher or similar levels of higher education attainment to the US, attainment levels in Central and Eastern European Member States (except Estonia and Lithuania), Italy, Malta and Greece remain below 25% (less than half the 2008 Canadian rate).

[31] With the exception of Lithuania, which historically had very high levels of tertiary attainment.

Figure 3-1: Tertiary graduates as a share of the working age population (25-64)[32]

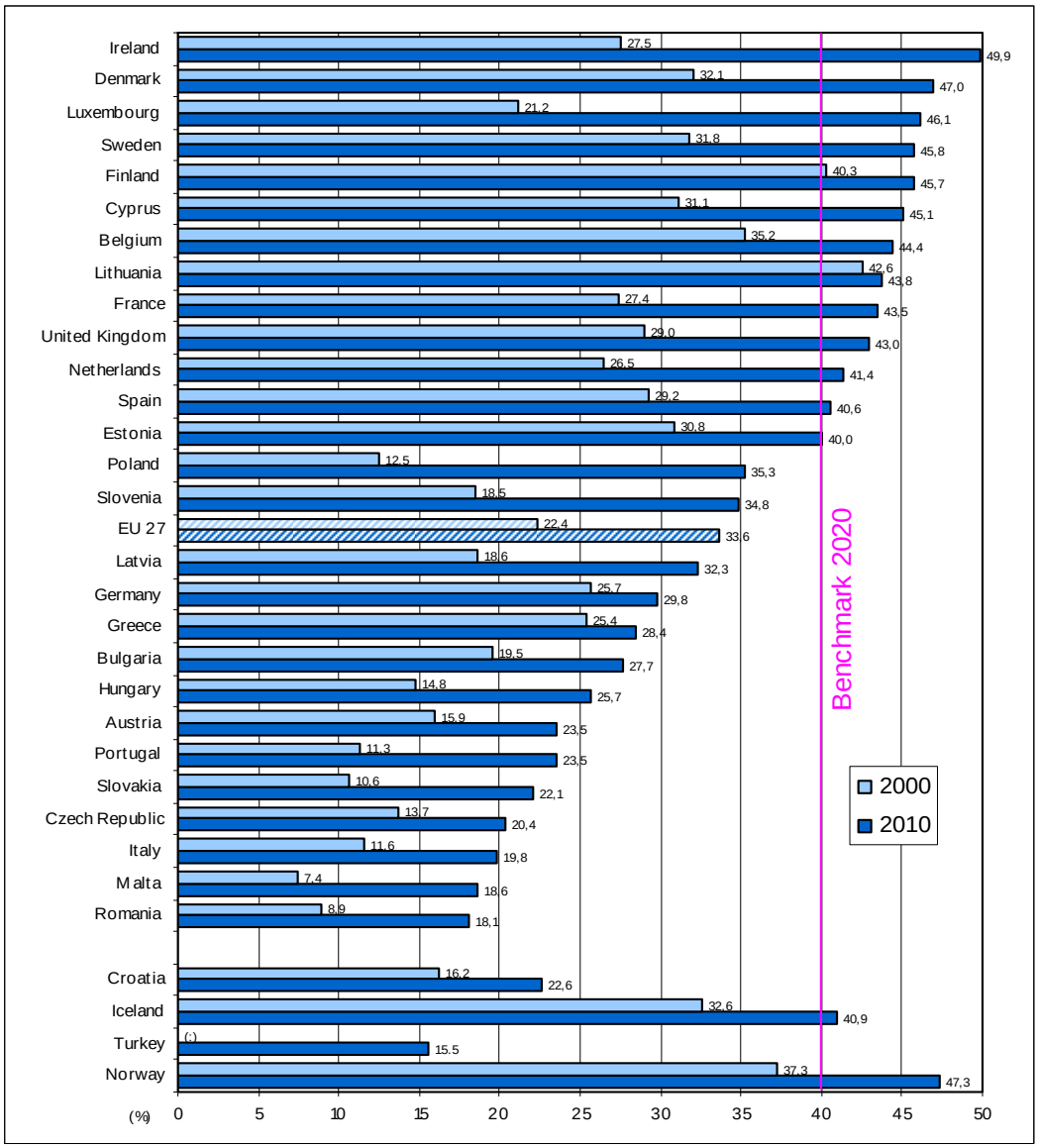


Source: Eurostat (EU-27) OECD 2011b (US, Australia [AU], Korea [KO], Japan [JP], Canada [CA])

As part of the Europe 2020 Strategy, EU governments have agreed an attainment target for higher education among those aged 30-34 of 40% by 2020. This more specific age range was chosen to make it easier to chart progress, by focusing on the typical age cohort for recent graduates. As shown in Figure 3-2, there has been a sharp increase in higher education attainment rates among this age cohort across the EU, with the EU average for the Europe 2020 benchmark rising from 22.4% in 2000 to 33.6% in 2010.

[32] Tertiary educational attainment measured with reference to ISCED 5 and 6

Figure 3-2: Tertiary educational attainment among those aged 30-34 (2000-2010)[33]

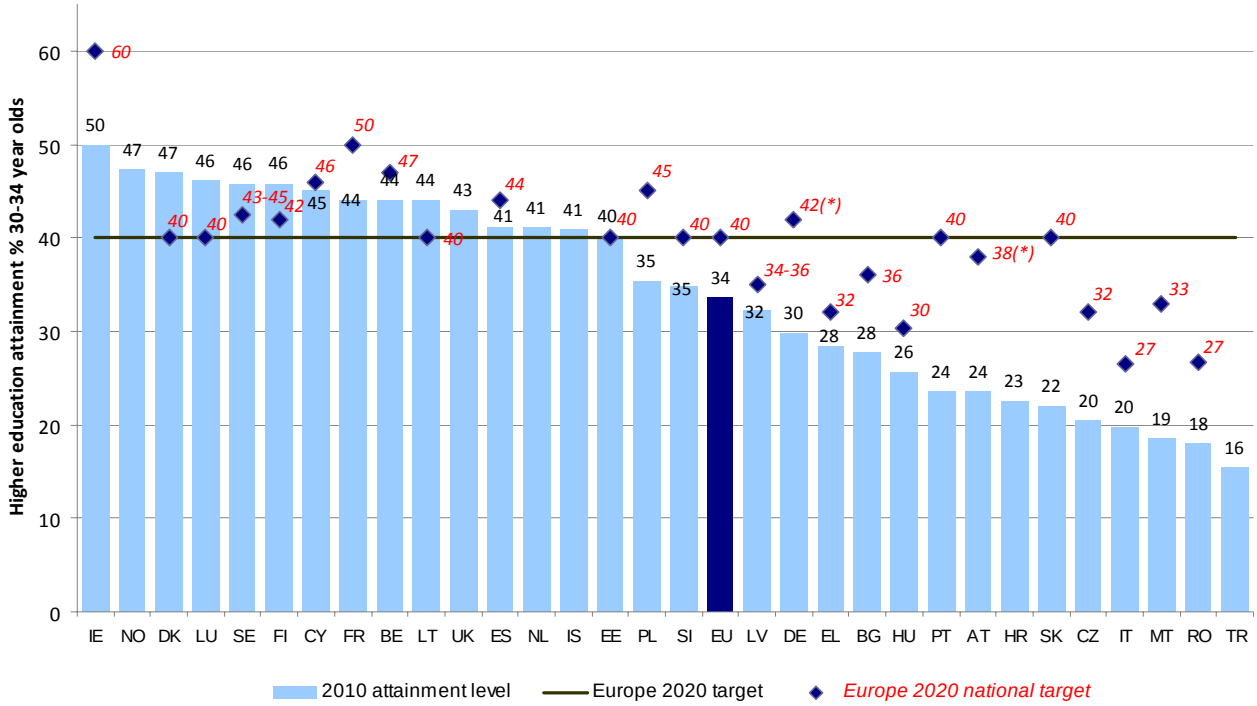


Source: Eurostat, EU Labour Force Survey

13 Member States have now reached or exceeded the 40% attainment level and on current trends. As part of the National Reform Programmes prepared as part of the implementation of Europe 2020, Member States have established national targets for higher education attainment, some of which go exceed the 40% level, as shown in Figure 3-3.

33 Tertiary educational attainment measured with reference to ISCED 5 and 6

Figure 3-3: Tertiary education attainment: 2010 levels and national targets [34]



Source: Eurostat, EU Labour Force Survey

Nine Member States[35] have set national targets at levels above the 40% EU target; seven[36] have set national targets at the level of the EU target, while nine Member States[37] have targets below 40%. The Netherlands and the UK have not set national targets. On the basis of the 2010 figures, six Member States (DK, EE, FI, LT, LU, SE) have already reached their national target and the EU as a whole is on course to meet the Europe 2020 target by 2020[38]. Nevertheless, particular efforts will be required to increase higher education participation and graduation levels in the other Member States, and in particular the 11 countries where attainment rates currently remain below 30% of the relevant age cohort.

Although in the context of Europe 2020 higher education is defined - in line with standard classifications - as ISCED[39] level 5 and 6, some Member States have argued that qualifications at ISCED level 4 – post-secondary, non-tertiary studies – should be viewed as equivalent to higher education. Both Germany and Austria have included ISCED level 4 graduates in their national targets for higher education attainment[40].

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34 Note that AT and DE define attainment by referring, respectively, to ISCED level 4a (AT) and ISCED level 4 (DE), which they consider equivalent to tertiary degrees (see below)

35 BE, CY, DE, ES, FI, FR, IE, PL, SE

36 DK, LU, LT, EE, SI, PT, SK

37 AT, BG, CZ, EL, HU, IT, LV, MT, RO

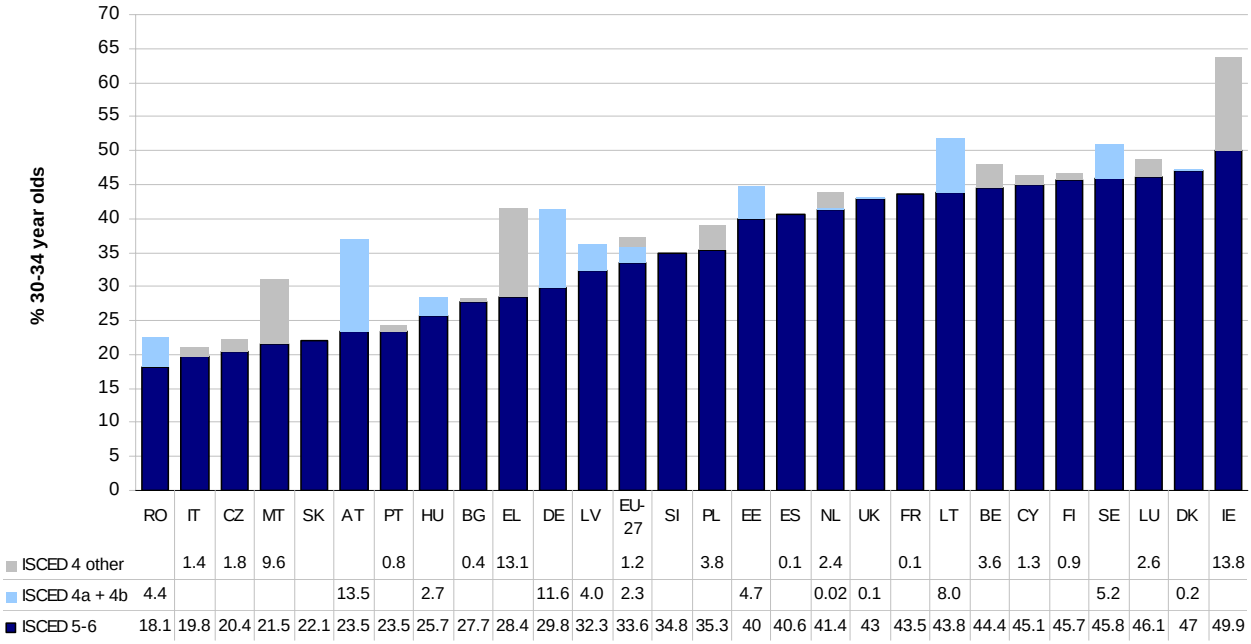
38 See European Commission (2011c)

39 International Standard Classification of Education

40 Austria has set a higher education attainment target of 38% by 2020, including ISCED 4a, while Germany has established a target of 42% including ISCED 4a and 4b. See European Commission (2011c)

Figure 3-4 shows, in addition to the higher education attainment indicator presented above, the proportion of 30-34 year olds with different forms of post secondary, non tertiary education (ISCED 4) qualifications in the Member States. This distinguishes between attainment of qualifications classed as ISCED 4a or 4b, which typically give access to higher education studies (and can often count as credits towards a higher education qualification) and other types of post secondary, non tertiary qualification, which generally do not give access to higher education. Figure 3-4 illustrates the scale of the particular ISCED 4a and 4b qualification systems in Germany and Austria (reflected in national Europe 2020 targets[41]), but also highlights the prevalence of similar qualification types in the Baltic States, Sweden, Romania and Hungary. For a number of other Member States[42] it is not possible to make a clear distinction between types of ISCED 4 education. Other Member States, including Ireland, Poland and Greece have substantial ISCED 4 sectors, the qualifications from which do not generally give direct access to ISCED 5.

Figure 3-4: Tertiary and "post secondary, non tertiary" attainment levels for 30-34 year olds in 2010[43]



	RO	IT	CZ	MT	SK	AT	PT	HU	BG	EL	DE	LV	EU-27	SI	PL	EE	ES	NL	UK	FR	LT	BE	CY	FI	SE	LU	DK	IE
ISCED 4 other		1.4	1.8	9.6			0.8		0.4	13.1			1.2		3.8		0.1	2.4		0.1		3.6	1.3	0.9		2.6		13.8
ISCED 4a + 4b	4.4					13.5		2.7			11.6	4.0	2.3			4.7		0.02	0.1		8.0				5.2		0.2	
ISCED 5-6	18.1	19.8	20.4	21.5	22.1	23.5	23.5	25.7	27.7	28.4	29.8	32.3	33.6	34.8	35.3	40	40.6	41.4	43	43.5	43.8	44.4	45.1	45.7	45.8	46.1	47	49.9

Source: Eurostat, EU Labour Force Survey

3.2. The social dimension of higher education: who are today's students?

Alongside an increased focus on absolute levels of higher education participation and attainment in society, the last decade has seen far greater attention paid to the social composition of the populations entering and graduating from European higher education institutions. In the context of the Bologna Process in 2007, ministers responsible for higher education agreed the specific objective that the student body entering, participating in and completing higher education at all levels "should reflect the diversity of our populations"[44].

41 ISCED 4a and 4b in Germany and ISCED 4a in Austria

42 BE, CZ, FR, CY, LU, MT and PT

43 Note that ISCED 4 data for MT, BG, ES, NL, UK, FR, CY, FI, LU and DK lack reliability due to the small sample size in these countries

44 London Communiqué of 2007

The underlying rationale for this commitment was broadly twofold. Firstly, there is what can be termed the "social justice argument"[45], which emphasises the need to ensure equity in access to higher education as part of fostering a balanced, socially cohesive society. Secondly, there is the more pragmatic "human capital argument", which stresses the need to maximise the development of talent as a means to meet increasing skills demand from the labour market. Both these arguments are fundamentally consistent with the EU's Europe 2020 goals of smart, sustainable and inclusive growth.

From a policy perspective, realising the goal of a socially representative student cohort requires both a good understanding of the current make-up of the student population in Europe and well-tailored action to increase higher education participation among currently under-represented groups. Policy across the EU has tended to focus on three main areas: a) gender, b) socio-economically disadvantaged groups (including minority ethnic groups and the disabled) and c) older age cohorts wishing to enter (or return to) higher education.

The gender balance within the student population

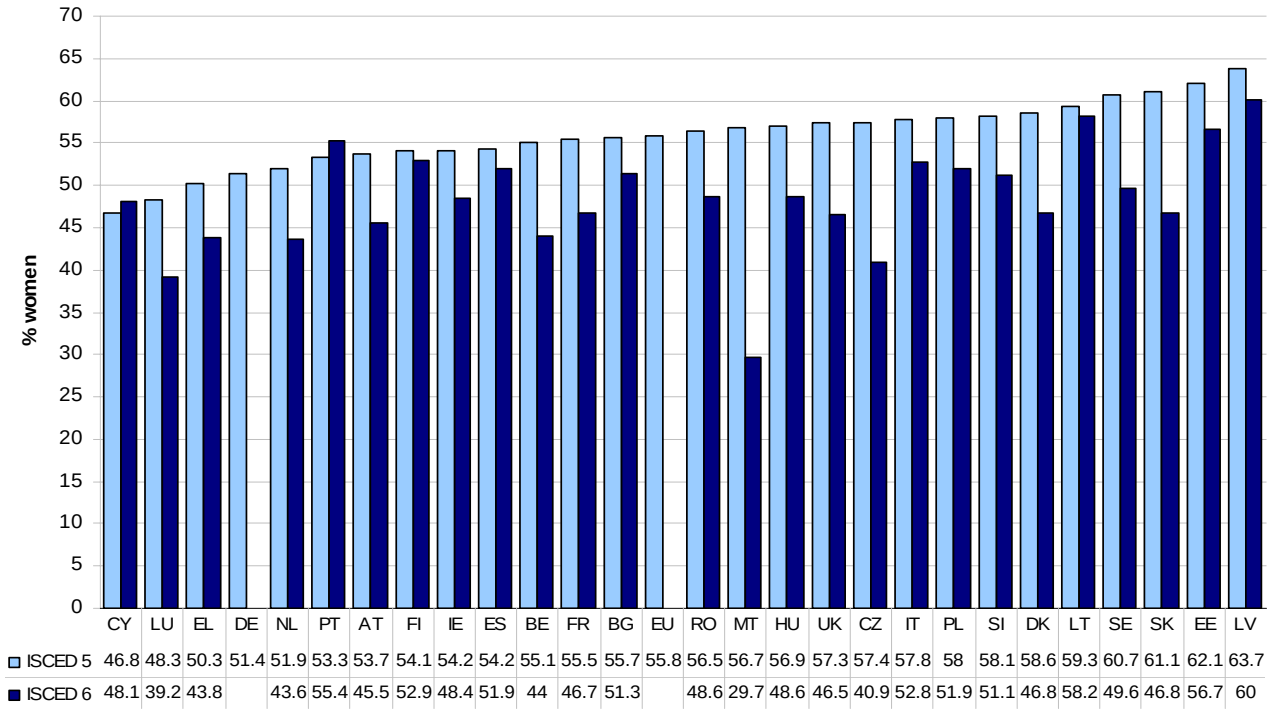
The most recent data on the student population in EU Member States confirms the well established pattern that women are proportionally more likely than men to enter higher education. Women account for more than half the student cohort at pre-doctoral level (ISCED 5) in all but two Member States (Cyprus and Luxembourg). This pattern is reflected in the higher education attainment figures, which show that female graduates outnumber male graduates the 25-35 age cohort in all Member States[46] and in the overall working age population (25-64) in 22 of the 27 Member States[47].

45 Eurostudent (2011)

46 The average higher education attainment rate in the EU-27 for those aged 30-34 is 37.2% for women and 30% for men.

47 The exceptions (where male graduates outnumber female graduates in the population 25-64) are LU, DE, AT, NL and CZ.

Figure 3-5: Proportion of female students at ISCED 5 and ISCED 6 in 2009



	CY	LU	EL	DE	NL	PT	AT	FI	IE	ES	BE	FR	BG	EU	RO	MT	HU	UK	CZ	IT	PL	SI	DK	LT	SE	SK	EE	LV
ISCED 5	46.8	48.3	50.3	51.4	51.9	53.3	53.7	54.1	54.2	54.2	55.1	55.5	55.7	55.8	56.5	56.7	56.9	57.3	57.4	57.8	58	58.1	58.6	59.3	60.7	61.1	62.1	63.7
ISCED 6	48.1	39.2	43.8		43.6	55.4	45.5	52.9	48.4	51.9	44	46.7	51.3		48.6	29.7	48.6	46.5	40.9	52.8	51.9	51.1	46.8	58.2	49.6	46.8	56.7	60

Source: Eurostat. Data for GR and LU are for 2008. No ISCED 6 data for DE

The overall pattern of higher education participation at ISCED 5 level shown in Figure 3-5 conceals considerable differences in the gender balance within specific disciplines and study fields. Thus, on an EU level, women are over-represented to an even greater extent than in the general student population in both the humanities and law[48], while men account for a majority of students in the fields of "science, maths and computing" and "engineering, manufacturing and construction"[49]. Furthermore, although women outnumber men in the pre-doctoral levels of higher education, the reverse is true for doctoral students in 16 of the 26 Member States for which relevant data are available. Given the importance of doctoral-level education as a pre-requisite for research careers, this comparative under-representation of women in the highest levels of study has an impact on the numbers of women in university faculty and in research professions.

The social background of students

Increasing the numbers of students and graduates from "under-represented" social groups is a core objective of the "social dimension" of the Bologna Process and a well-established policy goal in many EU Member States. However, different national population profiles and traditions mean that national definitions of under-represented societal groups vary from country to country, which complicates cross-country comparison of higher education participation rates and policy responses. Research by Eurydice[50] highlights the diversity of national student classification and monitoring systems. For example, while Austria, Germany

48 Respectively 68% and 58% female students in 2009

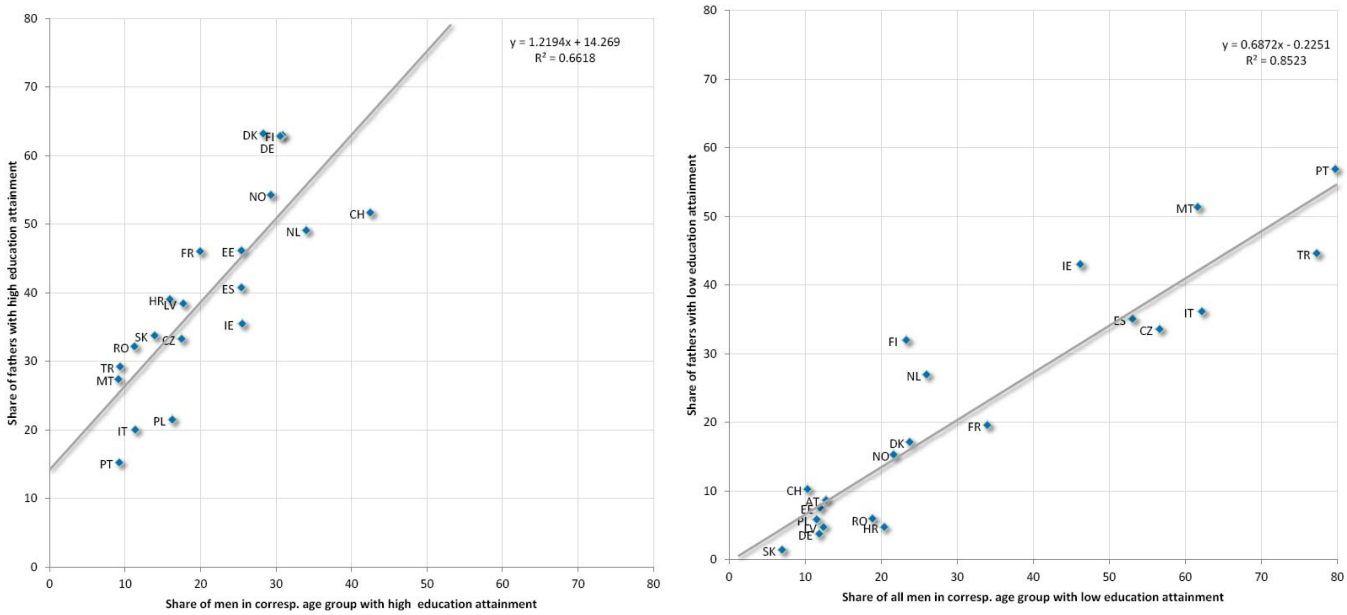
49 Respectively 62% and 75% male students in 2009

50 Eurydice (2011)

and the United Kingdom routinely use more than five distinct categories for monitoring student participation, France, Luxembourg and Sweden focus only on students from low income backgrounds.

Across the EU, under-representation in higher education is most often linked to socio-economic background or parents' educational attainment, or to minority status or disability. The latest report of the Eurostudent project[51], based on surveys of students in a majority of EU Member States and other European countries[52], examines a number of measures of the social background of students, including the educational and occupational profile of their parents.

Figure 3-6: Educational profile of students' fathers



Source: Eurostudent (2011), p.50 No data for England and Wales, SI, SE, LT

The educational attainment of students' parents is often viewed as a useful proxy indicator of students' socio-economic background[53]. Figure 3-6 plots the share of students whose fathers have a) higher education qualifications and b) at most lower secondary school qualifications against the equivalent shares for all men in the national populations aged 40-60. This shows that individuals' whose fathers have higher education qualifications are proportionally over-represented in the student cohort in all countries surveyed. In the Netherlands, for example, 50% of students surveyed have a father with a degree, whiles only 34% of Dutch men in the age group 40-60 have a similar level of qualification.

At the same time, individuals whose fathers have a low level of qualification are proportionally under-represented in higher education in most countries, although to differing degrees and with some exceptions. Thus, in Finland, the Eurostudent results suggest

51 Eurostudent (2011)

52 Does not cover BE, HU, BU, GR and Scotland (Observers) or Cyprus and Northern Ireland (non Members)

53 In particular because educational attainment levels are closely correlated to occupational status and, to a lesser extent, income and educational attainment levels are objective and easily comparable across countries.

individuals with fathers with low levels of qualification are proportionally over-represented in higher education, while in the Netherlands and Ireland the proportion of students with such fathers is almost exactly in line with the pattern in the national population as a whole. The higher education systems in these countries could thus be seen to be relatively inclusive and to have a high potential to influence social mobility. In contrast, while over 60% of the Italian and 35% of the French male populations aged 40-60 have no more than lower secondary qualifications, fewer than 40% of Italian students and under 20% of French students report having a father with this level of qualification. Such patterns suggest a greater level of inter-generational reproduction in terms of educational attainment and a lower potential impact on social mobility.

The relative under-representation of students from disadvantaged socio-economic backgrounds in higher education is related to a complex set of factors of which lower levels of attainment in secondary education and more limited educational aspirations are the most frequently cited. Lower levels of the educational system have an important influence on the likelihood of individuals from different backgrounds to enter higher education. Evidence shows[54] that in systems that tend towards early educational streaming and selection, students from lower socio-economic status backgrounds are statistically more likely to 'opt for' (or have no option but to opt for) a vocational training route, from where it is more difficult to continue to higher education. As a consequence, some countries (for example Finland, Ireland and Sweden) have sought to introduce more flexibility in progression routes, making it easier to move from forms of education and training that do not traditionally lead to higher education[55]. This is also an important element in attracting older learners to higher education (see below).

A 2010 Eurydice survey showed that most EU Member States have expressed an intention in their policies to promote the "social dimension" of higher education in line with the broad objectives of the Bologna Process. However, very few appear to have translated this into formal commitments to raising the participation of under-represented groups to the point where the higher education population mirrors the overall societal distribution of such groups. Indeed, it is more common for countries to take measures to increase overall participation in higher education and to hope that in so doing the numbers of students from under-represented groups will also rise. Targets, where they do exist, tend to relate to increasing participation of individuals with lower socio-economic status and/or students whose parents have relatively low educational attainment levels. Eurydice found that Belgium (Flemish Community) France, Ireland and the United Kingdom (Scotland) have implemented measures in this respect.

The age profile of higher education students

The twin objectives of social equity and increasing the overall stock of human capital also underpin measures to increase higher education participation among older age groups, who did not benefit from higher education as part of their initial educational pathway or who wish to *return* to higher education to upgrade their skills. In addition to encouraging such older learners to undertake mainstream higher education programmes, there is a related, but distinct,

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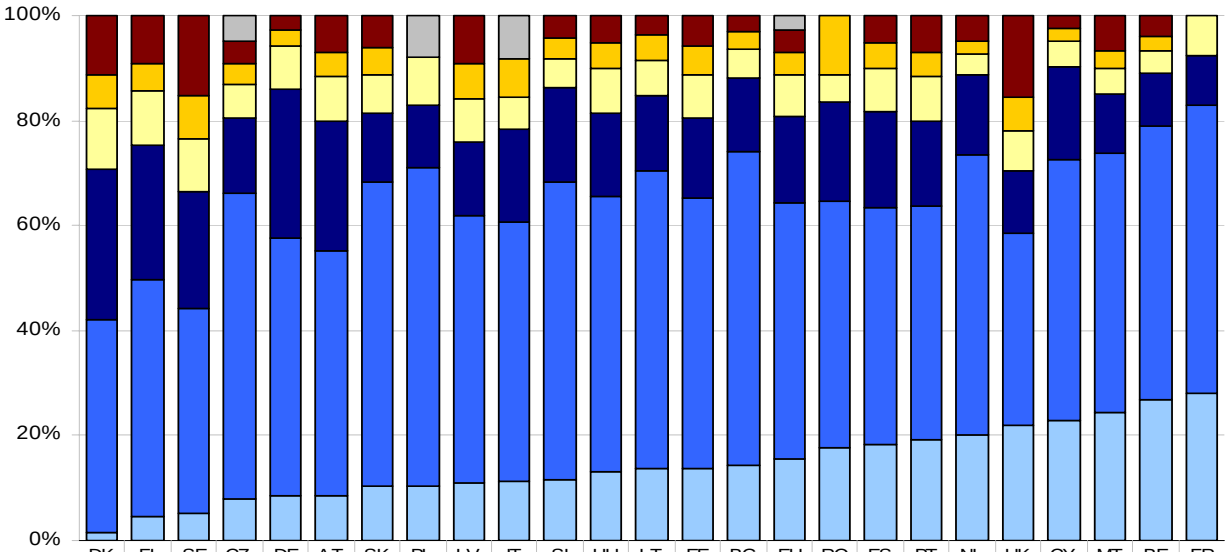
54 For example, OECD (2010a) Eurydice (2010)

55 This is also a key objective of the Copenhagen Process in the field of Vocational Educational and Training, which aims to create flexible learning pathways, which allow permeability between the different parts of the education and training system. See Copenhagen Process 2010.

trend in strategic policy and at institutional level to develop the role of higher education institutions as providers of shorter continuing education programmes to those already in the labour market.

Figure 3-7 shows the age profile of the student populations in mainstream pre-doctoral programmes (ISCED 5a and 5b) in the EU Member States. This serves to illustrate two main patterns. Firstly – and less directly relevant here - those countries where students typically enter (and complete) higher education at a comparatively young age[56]. Secondly, as reflected in the order of the countries in the figure, the proportion of older learners (those over 35) in the overall student population at undergraduate or masters level. In this context, Sweden and the UK stand out as particularly successful systems in attracting older learners, with over 20% of their ISCED 5 students over 35. The same age cohort makes up over 14% of the student populations in Denmark, Latvia and Finland and accounts for over 10% of students in a further eight Member States.

Figure 3-7: Age profile of higher education students (ISCED 5a and 5b) - 2009



	DK	FI	SE	CZ	DE	AT	SK	PL	LV	IT	SI	HU	LT	EE	BG	EU	RO	ES	PT	NL	UK	CY	MT	BE	FR
not accounted				4.9				8.0		8.1						2.8									
40+	11.4	9.3	15.4	4.1	2.7	7	6	0	9.2	0	4.4	5.1	3.7	5.7	3.0	4.3	0	5.1	6.9	4.8	15.5	2.5	6.8	3.9	0
35-39	6.5	5.1	8	4	3.2	4.7	5.3	0	6.7	7.6	3.9	4.9	4.9	5.6	3.3	4.1	11.2	5	4.7	2.5	6.6	2.3	3.2	2.6	0
30-34	11.5	10.5	10.3	6.4	8.1	8.4	7.4	9	8.1	6.1	5.5	8.7	6.6	8.2	5.6	7.9	5.3	8.3	8.5	4	7.4	4.9	5	4.3	7.8
25-29	28.5	25.3	22.1	14.3	28.3	24.8	13.1	12.1	14.3	17.5	17.7	15.9	14.2	15.2	14.2	16.5	18.7	18.3	16.0	15.4	12	17.7	11.1	10.1	9.3
20-24	40.6	45.1	39.2	58.2	48.8	46.6	58.0	60.7	50.8	49.5	56.7	52.2	56.8	51.5	59.6	48.7	47.1	45.1	44.7	53.4	36.4	49.8	49.5	52.1	55
15-19	1.6	4.7	5.1	8	8.5	8.5	10.3	10.3	10.9	11.2	11.7	13.2	13.8	13.9	14.3	15.6	17.7	18.2	19.1	20	22	22.8	24.4	26.9	28

Source: Eurostat, UOE. No data for Ireland, Greece or Luxembourg

3.3. Entry routes to higher education

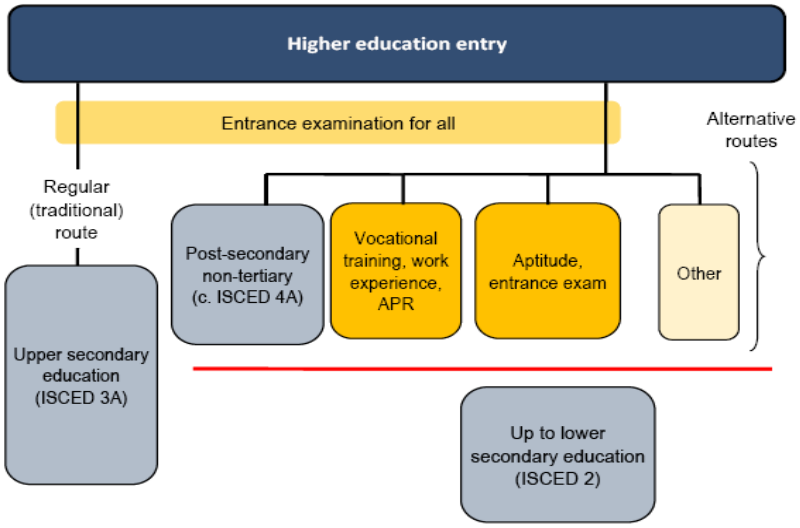
Across the EU, the most widespread pathway to higher education has traditionally been to follow a general or academic route through secondary education (ISCED 3A), to pass final exams at upper secondary level (and in some cases higher education entry exams) and to move directly to higher education after high school. The expansion of higher education in

[56] In particular FR, BE, MT, CY, UK and NL, where over 20% of students in 2009 were 19 or younger.

recent decades often introduced more vocationally oriented pathways to university, while the increasing preoccupation with widening access and ensuring social equity has ensured the issue of "progression routes" remains high on the policy agenda[57]. There is a growing recognition that secondary education systems tend to reinforce existing socio-economic differences between pupils and work against equal access to higher education[58]. In recognition of the importance of up-skilling the labour force and to encourage lifelong learning, national and EU policy has sought to prevent "dead-ends" in educational systems, which prevent individuals from progressing to higher levels.

As illustrated in Figure 3-8 - a conceptual framework for entry routes to higher education developed as part of the Eurostudent project – alongside the traditional route from academic upper secondary (ISCED 3A) level to higher education (ISCED 5), a range of alternative routes may exist. These include more vocational streams, including foundation courses or similar programmes at post-secondary, non-tertiary level (ISCED 4a or b) as well as mechanisms to assess and validate prior learning gained in other settings, including work experience and education and training options that do not traditionally lead to higher education.

Figure 3-8: Eurostudent framework for routes to higher education



Source Eurostudent IV, p25

The latest Eurostudent survey found that the vast majority of students in the EU enter higher education through the traditional route described above. However, in the Nordic countries, Ireland and the United Kingdom, over 20% of the students surveyed reported having followed alternative routes to higher education, from vocational courses or through accreditation of prior learning and experience[59]. The students in this group were more likely than average to come from low educational backgrounds, to be older and to have delayed entry to higher education. This suggests the use of alternative progression routes can support the goal of widening access to higher education to under-represented target groups, including those from lower income backgrounds and older learners.

57 See also Eurydice (2011), Section 1.3
58 See OECD 2010a
59 Eurostudent (2011), pp.26-28

The latest EUA Trends report[60] , surveying 821 higher education institutions in Europe, found an increasing number of institutions were introducing policies on widening access, but also notes that national authorities and institutions need to do more (and be allowed to do more) to collect relevant data on the social background of students and their attainment.

3.4. The impact of demographic aging

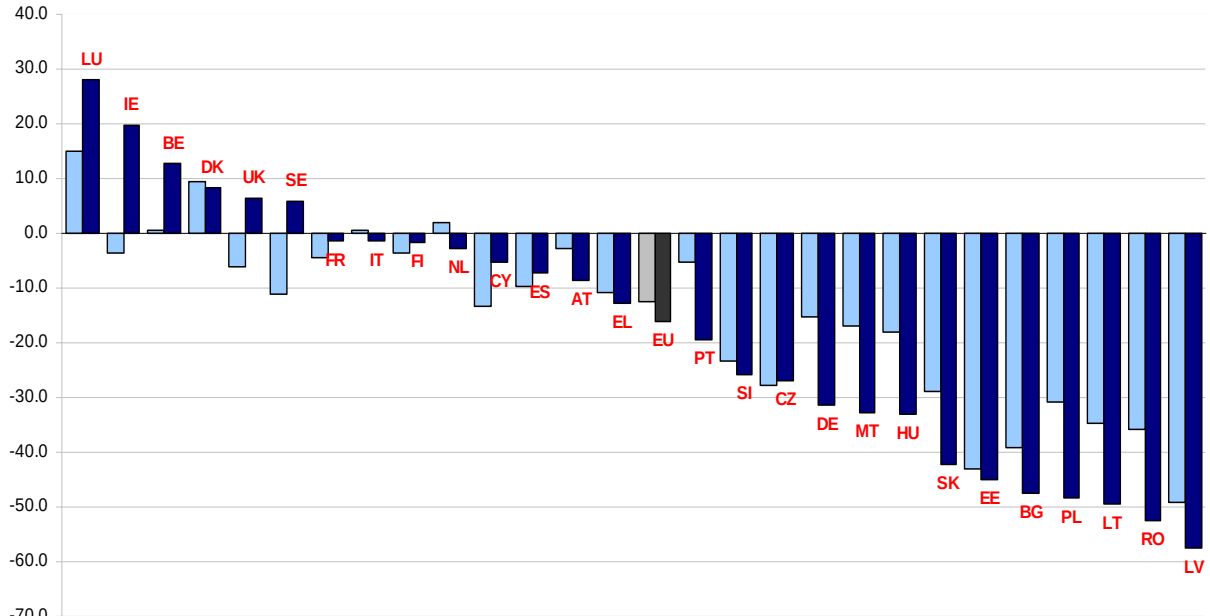
The European population is getting older. Not only are Europeans living longer than ever before, but with falling birth rates, the number of young people in the European Union has declined steadily in the last two decades. In the EU between 1990 and 2009, the population aged 10-19 fell by 15.4% and the population aged 20-29 by 10%[61]. Although migration and increased birth rates in some EU countries mean the population decline has now been reversed at EU level in the youngest age cohorts (the number of 0-4 olds in the EU increased by 3.7% between 2000 and 2010), many EU Member States – particularly in Central and Eastern Europe will continue to see their younger population shrink in the coming decades. As well as their implications for economic development and the sustainability of social security systems, these demographic trends naturally have an impact on education and training systems, including higher education.

The increased higher education participation rates across the EU in the last decade discussed above have hitherto masked the impact of declining younger age cohorts on higher education institutions, as student numbers have continued to increase. However, current EU population projections show a significant decline in the typical age cohort for higher education students (20-24) over the next 40 years in a majority of Member States. As shown in Figure 3-9, while the student age cohort is projected to increase or remain broadly stable in the coming decades in 10 Member States, the remaining 17 countries will see the 20-24 age group shrink compared to 2010 levels. Declines range from 5% in Cyprus to over 50% in Romania and Latvia, with the greatest demographic contraction seen in Central and Eastern Europe.

60 EUA (2010)

61 Eurostat calculations

Figure 3-9: Evolution in population aged 20-24 in the EU - 2020 and 2050



	LU	IE	BE	DK	UK	SE	FR	IT	FI	NL	CY	ES	AT	EL	EU	PT	SI	CZ	DE	MT	HU	SK	EE	BG	PL	LT	RO	LV
2020	15.0	-3.5	0.5	9.5	-6.0	-11.1	-4.4	0.5	-3.6	1.9	-13.4	-9.9	-2.8	-10.9	-12.6	-5.4	-23.3	-27.8	-15.2	-16.9	-17.9	-29.0	-42.9	-39.2	-30.9	-34.8	-35.9	-49.1
2050	28.1	19.7	12.8	8.3	6.5	5.9	-1.4	-1.5	-1.6	-2.7	-5.3	-7.2	-8.7	-12.7	-16.1	-19.4	-25.9	-26.9	-31.4	-32.8	-33.0	-42.3	-45.0	-47.4	-48.4	-49.5	-52.5	-57.4

Source: Eurostat

From a socio-economic development perspective, the decline in the student age cohort provides an increased incentive to increase higher education participation and attainment levels in the population as a whole. This is necessary not only to meet future predicted skills requirements (see next section), but also to maintain the supply of graduates at current levels.

4. RESPONDING TO THE SKILLS CHALLENGE

4.1. Europe's changing skills requirements

The requirements of the European economy in terms of human capital are changing. As the EU recovers from the worst economic crisis for decades, the latest analysis points to a number of trends in Europe's economic structure with important implications for employment patterns and skills needs.

(1) An ongoing decline in employment in primary sectors and basic manufacturing sectors, with increased employment in services. This trend has been accelerated by increased competition from Asia, which has seen many manufacturing and processing jobs move to the east during the last 10 years.

(2) A focus within the EU on "high-end", knowledge-intensive activities, such as research and development, marketing and sales, value chain management and financial services, which generate high added value – and require highly skilled labour.

(3) An increasing need for skills related to the development and implementation of climate and environmentally friendly solutions, technology and services.

(4) Some degree of polarisation in employment types at sector level, particularly in areas such as distribution and transport, with increased employment in both high-skill posts and in low-skilled positions which cannot easily be transferred to other locations in the world[62]. At the same time, there is likely to be an overall decline in demand for skilled manual workers, as improvements in productivity reduce employment needs and competition intensifies from workers in this skill category in other world regions[63].

In the context of a complex, interdependent global economy, Europe is thus increasingly specialising in services and high value added production sectors. This shift will generate an increasing number of knowledge and skills intensive jobs for managers, professionals and technicians. As a result, demand for highly-qualified people is projected to rise by almost 16 million in the period up to 2020. The share of highly-qualified jobs in the labour market as a whole will thus increase from 29% in 2010 to about 35% in 2020. At the same time, the share of jobs employing those with medium-level qualifications will remain broadly stable (at around 50%) and the share of jobs employing those with low qualifications will decrease from 20% to less than 15%[64].

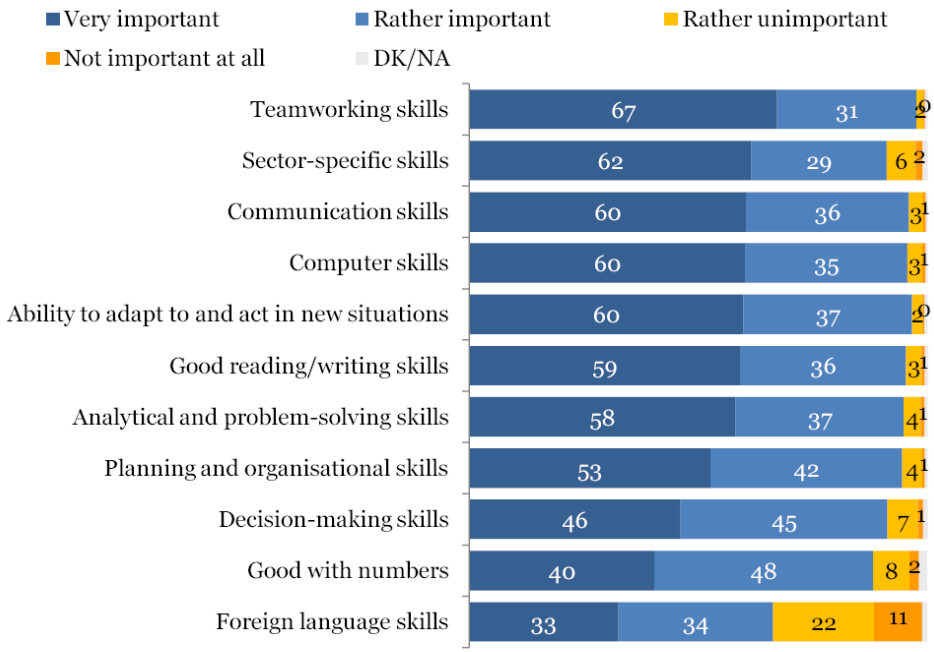
Studies of current and future skills requirements highlight the importance of both transversal core skills and subject or sector-specific skills for all individuals. "Transversal core skills" can be conceived of as a set of knowledge, skills and attitudes that allow people to lead a successful life in a modern knowledge society. The European Key Competences Reference

62 See Oxford Research (2010)
63 See European Commission (2010b)
64 CEDEFOP (2010a)

Framework[65] defines eight core competences[66] - including communication and ICT skills, an ability to learn, and initiative and entrepreneurship - which all individuals should seek to develop.

These core competences correspond closely to the skills employers consistently say they seek in their employees. In a recent Eurobarometer survey[67] (See Figure 4-1), employers from across Europe ranked transversal competences such as team-working, communication skills, computer skills and adaptability, alongside sector-specific skills, among the most important attributes they look for in graduate recruits.

Figure 4-1: Importance of skills for employers in recruiting graduates



Q3.2. Please rate the following skills and competencies in terms of how important they are when recruiting higher education graduates in your company.
Base: all companies , % TOTAL

Source: Flash Eurobarometer 304, 2010

As noted by the EU's Expert Group on New Skills for New Jobs[68], today's knowledge society and economy call for individuals to develop "T-shaped" skills profiles, in which they combine transversal core skills (the horizontal bar) with the specific skills needed for particular occupations or jobs (the vertical bar). The Expert Group argues these competences should be acquired as soon as possible by everyone and developed throughout life. This model of skills

65 European Commission (2006)

66 1. Communication in the mother tongue; 2. Communication in foreign languages; 3. Mathematical competence and basic competences in science and technology; 4. Digital competence; 5. Learning to learn; 6. Social and civic competences; 7. Sense of initiative and entrepreneurship; 8. Cultural awareness and expression.

67 Eurobarometer (2010a)

68 European Commission (2010b)

development holds for those seeking to develop the highest levels of skills and thus has direct implications for Europe's higher education systems[69].

4.2. Key implications for higher education

The predicted growth in demand for high-level skills in the European economy means the EU needs more skilled graduates in absolute terms and for these graduates to have the right mix of skills to allow them to succeed in the changing economic environment. As a result of the continuing growth in student and graduate numbers in all Member States highlighted in Section 3, the EU appears to be on the right path in terms of producing the right quantity of graduates, even if widening access to higher education to under-represented groups remains a challenge. Judging the quality of the education received by higher education students in the EU and the relevance of the knowledge and skills they acquire is inherently more difficult.

The rapid expansion of quality assurance in higher education over the last decade, accelerated in Europe by the Bologna Process, has stimulated a wide-ranging debate on how best to assess the quality of higher education programmes. Views on the components of quality, and on the best approaches to guaranteeing it, vary across the EU. However, the Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG), developed as a common framework by the European Association for Quality Assurance in Higher Education (ENQA)[70], place emphasis on ensuring the inherent intellectual quality of programmes and teaching, their relevance to students and society in terms of learning outcomes and the importance of creating a "culture of quality" that promotes continuous improvement. As reflected in the ESG, there is a broad consensus that high quality higher education programmes combine a number of core features:

- The programme is defined in terms of clear *learning outcomes*, which allow students to understand the knowledge and skills they should acquire, form the basis for student assessment and quality assurance and provide employers and other stakeholders a clear idea of the skills set graduates should possess;

- The content draws on the *best available knowledge* in the subject field concerned, including insights from the latest research and the world outside academia;

- The *staff teaching the programme* are well qualified and have the right training and skills set to fulfil their pedagogical role;

- The *structure, teaching or delivery methods* are appropriate to the subject matter and tailored to the needs of the target student group and adequate *learning resources* (research and computer facilities[71], libraries etc) are available;

- The programme is subject to *quality assurance procedures* from the outset, including formal, up-front approval for the course and regular periodic reviews by external

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69 The OECD's Programme for the International Assessment of Adult Competencies (PIAAC) is undertaking a new wide-ranging survey of adult skills in order to assess the skills competencies needed for individual success. The outcomes are intended to inform education practitioners and policy makers on appropriate ways to develop these skills and competencies. http://www.oecd.org/document/35/0,3746,en_2649_201185_40277475_1_1_1_1,00.html

70 ENQA (2005). Developed by ENQA in cooperation with EUA, EURASHE and ESIB

71 See Section 4.3

experts, taking into account the views of students and employers, labour market representatives and other relevant organisations.

1. The focus on learning outcomes

Reformulating study programmes in terms of defined learning outcomes for students represents a significant cultural shift for European higher education. It requires the core focus of programme design to move away from inputs (the qualifications of teachers, hours studied) – the means through which programme objectives are achieved - and onto outputs, defined in terms of knowledge, skills and attitudes acquired by the learners. This shift lies at the heart of the move towards "student-centred learning" – wherein the results and impacts of the study experience *for students* are attributed utmost importance at programme and institutional level.

The focus on learning outcomes in higher education is part of a wider trend within education and training more generally, spurred on by the development of National Qualifications Frameworks (NQFs) in the context of the Bologna Process[72] and the development of the European Qualifications Framework (EQF). Initially focusing on the level of higher education, NQFs show what learners may be expected to know, understand and be able to do on the basis of a given qualification (ie the learning outcomes expected from these qualifications). They also show how learners may move between qualification levels and types in an education system[73]. At EU level, the European Qualifications Framework (EQF), agreed in 2008, provides a standardised set out learning outcomes organised into eight levels, to which national qualifications can be linked. The objective is now to relate all existing and new qualifications – at all levels of the education and training systems - to the appropriate EQF level, to allow employers and others to better understand the learning outcomes expected from qualifications gained in another EU Member State[74].

The balance of evidence from recent analysis of the situation in Europe shows that the concept of learning outcomes has not yet become established in many higher education institutions[75]. As noted by the OECD's current AHELO project[76], formulating programmes in terms of learning outcomes is challenging, and represents a particularly significant departure for universities accustomed to delivering courses defined centrally in national systems. In such cases, academic staff have to take on a range of new responsibilities for the design and implementation of the courses they deliver. The European University Association argues the shift to a student-centred learning outcomes approach in many cases requires further resources to support smaller staff-student ratios, better learning facilities and staff training[77].

In addition to the shift to learning outcomes, higher education institutions are also adapting to the increased focus on transversal competences. This implies that higher education programmes should seek not only to impart subject-specific knowledge and skills, but also help individuals to develop their core transversal competences, notably in terms of critical thinking and learning, communication, entrepreneurship and creativity. This development brings with it its own challenges. In particular, there is an ongoing debate about, firstly, the

72 See 2005 Bergen Communiqué

73 http://www.ehea.info/article-details.aspx?ArticleId=69

74 See http://ec.europa.eu/education/lifelong-learning-policy/doc44_en.htm

75 See for example, EUA (2010), GHK (2011)

76 *Assessing Higher Education Learning Outcomes* (AHELO) www.oecd.org/edu/ahelo

77 EUA (2010)

extent to which higher education can be expected to develop core competences if these have been neglected in earlier stages of the education system and, secondly, the best way to measure and assess such competences, which have not always been a focus of many higher education programmes.

Box 4-1: Policy and practice: The Nexus project, Germany[78]

The German Federal Government is funding a project to support higher education institutions in their efforts to modernise their study programmes, teaching, examination and recognition procedures. 'Nexus', which has been funded for the period 2010 to 2014, is coordinated by the German Rectors' Conference (HRK) and has a core focus on student-centred learning, modularisation and ensuring employability of graduates. The project involves dissemination of good practice from within Germany and beyond though through workshops, seminars and publications.

2. Better links to research, innovation and the world of work

Higher education systems must continue to evolve if they are to respond effectively to the skills needs of a knowledge economy and challenges related to delivering high quality education to an even larger proportion of the population. At a fundamental level, this implies complementing the traditional academic culture in universities with a focus on delivering a highly skilled, enterprising and flexible workforce – which in turn requires increased interaction between higher education institutions and the world around them. Experience from around the world has shown the benefits of cooperation with external partners, including employers, innovative businesses and local and regional authorities. As the Expert Group on New Skills for New Jobs put it, "education and training can be effective and innovative only if the institutions themselves are innovative, "learning organisations" open to interactions with the world of business and work"[79].

In order to support the development of closer cooperation between higher education institutions and companies in Europe, the Commission has launched the University-Business Forum[80], a platform on European level for a structured dialogue between the stakeholders. The exchanges and discussions are based on real cases and address university-business cooperation related topics from the business and higher education perspectives, including governance, curriculum development and delivery, mobility, lifelong learning, knowledge transfer, entrepreneurship, etc. The Forum has opened a dialogue between the two worlds about how they can work more closely together. It has demonstrated that there is an appetite on both sides for working in partnership focused on education, with the common goal to ensuring that education delivers high-level and highly valued skills, underpinned at all times by high levels of adaptability, entrepreneurship and creative and innovative capacities.

In order to support implementation, a pilot action called "knowledge alliances" was launched in April 2011[81]. The overall objective of this action is to ensure stronger societal and economic relevance and outreach of higher education through strengthening the employability, creativity and innovative potential of graduates and professors and the role of higher education institutions as engines of innovation.

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78 See: http://www.hrk.de/de/projekte_und_initiativen/5913.php

79 European Commission (2010b)

80 University-Business Forum, see http://ec.europa.eu/education/higher-education/doc1261_en.htm

81 Call for proposals: http://ec.europa.eu/education/calls/doc2905_en.htm

At the same time, it is important that teaching programmes in universities benefit as much as possible from new insights from the world of research – research which may be undertaken in the same organisation, but does not always feed into the programmes delivered to students. In this context, the concept of the "knowledge triangle" – comprising education, research and innovation – is important. To optimise skills, innovation and research outcomes, it is important for these three domains to work closely together. This in many cases requires changes in the traditional approaches to designing and delivering education programmes. As noted by in Council Conclusions on the role of education in the knowledge triangle:

for education to fulfil its role in the knowledge triangle, research and innovation objectives and outcomes need to feed back into education, with teaching and learning underpinned by a strong research base, and with teaching and learning environments developed and improved through greater incorporation of creative thinking and innovative attitudes and approaches[82].

Turning the theoretical concept of a strengthened knowledge triangle into reality in teaching, research and innovation is a complex task, but an area where progress is being made. Public authorities can play an important role in supporting higher education institutions to form closer links with employers and employer's organisations, external research organisations and innovative businesses to enhance their educational offer. At European Union level, the European Institute of Technology (EIT) has been established to test innovative approaches linking different actors in the knowledge triangle, including for the development of new higher education programmes and curricula.

Box 4-2: Policy and practice: Education in the European Institute of Technology (EIT)[83]

The Knowledge Triangle is a useful tool to grasp the dynamics of education, research and innovation working together in a mutually reinforcing way in order to enhance quality, achieve excellence and to contribute to economic growth and advancement of society as a whole. The European Institute of Technology (EIT) is the first EU initiative that seeks to address the grand societal challenges by connecting the different parts of the knowledge triangle, in particular through the "Knowledge and Innovation Communities" (KIC).

The EIT has departed from the traditional knowledge transfer vision of a linear progression from education into research and then further to the market. Instead, it strives to create an interactive and dynamic relationship between education, research and business and industry, which better reflects the needs of the knowledge economy. A strong research base is a pre-requisite for the Knowledge and Innovation Communities established by the EIT. Each KIC aims to become a world-wide reference for cutting-edge research in its specific thematic area, pooling the best talent in a collaborative, cross-disciplinary setting. Excellent research is then tapped by the EIT education programmes, which provide an environment for training world-class researchers will.

The EIT educational concept will enhance the potential of the higher education institutions engaged in KICs to integrate research and innovation results into the educational offer and to exploit the potential for marketable products and services with relevance to the thematic area. The universities participating in the KICs will continue to award EIT labelled Masters degrees and PhDs, which provide in-depth scientific knowledge coupled with entrepreneurial skills, creative and innovative attitudes. Dialogue with national authorities and quality assurance

[82] Conclusions of the Council and of the Representatives of the Governments of the Member States on developing the role of education in a fully-functioning knowledge triangle, 26 November 2009

bodies helps to ensure recognition of the EIT labelled degrees in national and international context. The EIT labelled degree programmes are characterised by inter-sectoral, as well as international cooperation.

Academia and business work hand in hand for the design and delivery of the curricula and the definition of the learning outcomes, while students and staff can move smoothly from higher education to business and vice versa. The approach of the EIT labelled Master and Doctoral courses is explicitly international, with world-wide recruitment of students and staff combining high research potential with an entrepreneurial mindset. The courses reflect the achievements of the European Higher Education Area in terms of international curriculum development, structured mobility periods in each programme, awarding of joint degrees and correct application of European transparency and internationalisation tools.

3. Appropriate quality assurance

As already highlighted, the development of internal and external quality assurance (QA) mechanisms has been one of the most important trends affecting higher education in Europe in the last decade[84]. The call for rigorous QA systems as part of the Bologna Process was motivated in the first instance by a need to ensure mutual trust among participating countries in the quality of qualifications delivered by other higher education systems within Europe. However, this initially trans-national concern has sparked a widespread debate on the appropriate role and form of quality assurance systems in guaranteeing high quality at national level, particularly in those countries with little or no previous experience of QA.

Evidence from the ground shows a growing "quality culture" in higher education institutions, with internal quality systems in place and frequently managed at faculty level[85]. Moreover, almost all EU Member States now have independent QA agencies, working to a greater or lesser extent in line with the European Standards and Guidelines (ESG) mentioned earlier. Many agencies are members of the European Association for Quality Assurance in Higher Education (ENQA) and registered in the European Quality Assurance Register (EQAR) to facilitate recognition across Europe. This European dimension to quality assurance has been widely welcomed, with the EUA (2010) finding it have had a range of positive impacts, including in internationalising quality review panels, ensuring the participation of students in QA processes and further professionalising national QA agencies.

Reliable information about the quality and relevance of learning programmes is of particular importance for young people entering higher education, for young graduates considering further studies and for adults seeking suitable continuing education or retraining. However, as shown in the European Commission's reviews of progress in implementing QA systems in the EU[86], both internal and external quality systems in Europe have tended to focus on accreditation of programmes against minimum standards, rather than pushing for excellence, and exploring new and innovative ways to ensure the quality and relevance of programmes.

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83 See: http://eit.europa.eu/nc/activities/education/overview.html?print=1

84 60% of respondents to the 2010 EUA Trends survey rated the development of internal quality processes had been one of the most important changes affecting their organisations in the last 10 years – EUA (2010)

85 EUA (2010)

86 See European Commission (2009)

This said, recent developments in a number of Member States, show positive trends in developing new approaches to QA.

Box 4-3: Policy and practice: Employability in quality assessment in Sweden[87]

Sweden is introducing measures of "employability" and the employment outcomes of graduates as criteria to be taken into account in assessing the quality of study programmes as part of its national higher education quality assurance system. Questionnaires will be sent to alumni to collect data on graduate views on whether the education they received was useful in the labour market. The results of this analysis will be used as one element in determining the quality-based allocation of extra funding to the best performing universities.

4. Guidance and counselling

Recent analysis of the skills situation in Europe[88] concluded that too many individual education and training decisions are made in the absence of competent career guidance and counselling, with a lack of understanding of people's strengths and the real dimensions and opportunities of different careers, leading to inappropriate training and career choices.

Improving guidance and counselling on career and further study choices in schools is vital to help individuals make informed decisions and reduce wasteful drop-out resulting from inappropriate course selection. At the same time, career guidance within higher education itself is important to help students prepare for the world after studying and develop individual career management skills. There is evidence that career guidance in higher education institutions has been developing rapidly in recent years, with universities striving to improve student retention and prepare their students for employment[89]. Reliable information on the employment outcomes of previous graduates can be a valuable tool for students in selecting study options and for career guidance counsellors, as well as providing valuable feedback for those designing and delivering programmes. Improved data on what happens to alumni after their study period is vital for this to happen.

Box 4-4: Policy and practice: Tracking graduates in Hungary[90]

In Hungary, a new national tracking system for graduate employment outcomes is being developed and produced its first results in autumn 2010. This new system consists of 30 projects in higher education institutions. It is locally implemented with a nationally consistent and audited methodology, covering the professional satisfaction and the assessment of the personal career, the retrospective assessment of education and institution, and the applicability of studies.

4.3. ICT in higher education

Information and Communication Technology (ICT) has had and will continue to have a significant impact on higher education. The ubiquity of ICT means educational systems at all levels need to respond to increased demand for digital literacy and competences[91] while such technologies also offer the potential to transform the teaching and learning, research cooperation and the administration of academic institutions. However, deploying ICT is

87 See: http://www.sweden.gov.se/content/1/c6/14/30/87/358bd536.pdf
88 European Commission (2010b)
89 EUA (2010)
90 See: http://www.kslll.net/PoliciesAndAchievements/ExampleDetails.cfm?id=139&OtherSourceId=&compendiumid=2

generally costly and is by nature a "disruptive" innovation, requiring both considerable resources and cultural change within organisations. These factors help explain why the radical and rapid transformation of educational systems through technology, predicted by some at the turn of the millennium, has not yet materialised[92], even if the impact of ICT has been considerable and e-learning remains firmly on the agenda of higher education institutions.

Recent studies show that higher education institutions worldwide are increasingly implementing integrated Learning Management Systems (LMS) at institutional level. These are software systems developed for both administration and teaching in higher education, enabling, for example, enrolment data to be handled electronically, access to online course materials and assessments and online interaction between faculty and students[93]. Such systems provide core infrastructure to support the work of both administrative and teaching staff, with clear advantages in terms of knowledge management.

Change in the classroom and in the delivery of teaching and learning, requires not only infrastructure, but a reformulation of curricula and course elements to exploit the potential of ICT. This can range from simply making course material available online and using email, through incorporating web-based elements (projects, assessments, discussion fora) into campus-based programmes to fully online delivery, allowing students to follow courses from another location (distance learning, also allowing "virtual learning mobility"). Fully web-based programmes, with no or limited requirements for physical presence on campus, offer new options for widening access to higher education (for example to those in the labour market or with children) and marketing higher education courses internationally[94]. The falling costs and expansion in use of mobile web-enabled devices makes it even more feasible to incorporate innovative, ICT-based teaching techniques and components into higher education programmes.

Although the potential of ICT to enhance the learning and research experience is great, the barriers to wider deployment remain considerable. Alongside the basic infrastructure requirements and the associated investment, remodelling provision to take best advantage of ICT is no easy task. Teachers often need new skills, to adopt new patterns of working and develop new ways of cooperating with technical staff. Moreover, staff often have to undertake such work on top of their existing duties, particularly as e-learning generally complements, rather than replaces, traditional class-room-based learning[95]. This means they need to be convinced that the introduction of new technologies really improves the quality of the educational offer they provide – an area where evidence is often still needed. The use of on line delivery tools also raise questions about intellectual property and sharing of learning resources more widely, as well as concerns about an increased risk of plagiarism and "distractability" among students[96].

In the context of an information age, where students are increasingly unfamiliar with environments without continuous internet connectivity, it is clear the remaining barriers to the

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91 Digital Agenda for Europe, European Commission (2010x)

92 Economist Intelligent Unit (2008)

93 OECD (2005)

94 Evidence to date indicates that internationalisation is not a primary motivation for deploying ICT in programmes - see, for example Economist Intelligent Unit (2008)

95 OECD (2005)

96 Economist Intelligent Unit (2008)

deployment of ICT in higher education will need to be overcome. This will in turn require response from public policy[97], including through continued support for the development and testing of innovative e-learning solutions, dissemination of effective practice, support for staff training and the creation of appropriate regulatory frameworks for intellectual property.

4.4. The added value of learning mobility

At meetings in Leuven and Louvain-la-Neuve in April 2009, ministers responsible for higher education from the countries participating in the Bologna Process agreed the objective that by 2020 20% of those graduating in the European Higher Education Area should have completed a study or training period abroad[98]. This decision reflects a growing body of evidence demonstrating the value of mobility, particularly as a way for individuals to develop their transversal core competences and help prepare themselves for work in an increasingly Europeanised and globalised economy. A recent study, examining the career paths of students having participated in the EU's Erasmus Programme found that those who had spent a study period abroad were 15% more likely to work abroad in later life: a positive trend in the context of the European Single Market[99].

Student mobility can take various forms. The Erasmus Programme supports short-term or "credit" mobility, typically for one or two semesters during which students study or undertake placements in companies or other organisations in another participating country. Such credit mobility should ideally be built into the curriculum at the student's home institution and allow them to gain experience and credits of direct relevance to their home qualification. The term "degree mobility" is frequently used to refer to students undertaking an entire degree course in another country. Recent years have seen an increase in degree mobility in Europe, most notably at Masters-level. Although there are some examples of comparatively large cross-border student flows at undergraduate level, these are comparatively few and tend to concern neighbouring countries with a shared language[100]. Recent years have seen a considerable increase in international degree mobility, as learners from outside Europe follow degree programmes in Europe[101], although with a strong concentration in the UK, Germany and France (see Section 7.1).

Despite difficulties in measuring mobility and limited data availability, it is clear that mobility flows within the EU are unbalanced. In the UK, for example, less than 1% of residents undertaking a higher education course are enrolled abroad, while in Cyprus, Ireland, Luxembourg, Malta and Slovakia more than 10% of students are enrolled in another country. France, Germany and the UK are notable in combining high levels of incoming mobility with comparatively low (if varying) levels of outgoing mobility. In contrast, some Central and Eastern European countries, such as Slovakia, have high rates of outgoing mobility and low rates of incoming mobility[102].

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97 See European Commission (2010d), OECD (2005)

98 See Leuven / Louvain-la-Neuve Communiqué http://www.ehea.info/Uploads/Declarations/Leuven_Louvain-la-Neuve_Communiqu%C3%A9_April_2009.pdf

99 Parey, M and F. Waldinger (2011)

100 For example, French and German students on medical courses in, respectively, Belgium and Austria.

101 The number of international students studying in Europe increased by 60% between 1999 and 2007, CHEPS (2010a), p. 73.

102 Eurydice Higher Education in Europe 2009, p. 43.

Some countries have adopted a mobility policy, either to boost outgoing mobility (for example through top-up mobility grants), or incoming mobility (for example through courses in English or preferential access to accommodation), or both. However, relatively few countries have set targets for mobility as part of their higher education development strategy, and no EU country has yet implemented a comprehensive strategy to tackle all aspects of student mobility[103].

Box 4-5: Policy and practice: Promoting outgoing mobility in Denmark[104]

The main goal of the Danish national mobility strategy is to enhance the outgoing mobility in professional Bachelor programmes by mapping the opportunities and obstacles to mobility and on that basis develop a strategy for a strong, high quality internationalisation as an integral part of professional bachelor programmes.

Promoting transnational learning mobility for higher education students and those in other types of education and training has long been a key policy objective of the European Union, as reflected in the objectives of the successful Erasmus and Erasmus Mundus programmes. In addition to direct financial support for individuals undertaking mobility, the EU works to improve the framework conditions for mobile learners. The 2009 Green Paper on Learning Mobility[105] formed the basis for a wide-ranging public consultation on the obstacles to mobility, the results of which informed the recently adopted Council Recommendation on promoting the learning mobility of young people[106]. This Recommendation calls upon Member States to take action to promote learning mobility and remove obstacles to it, including in the areas of information provision, administrative obstacles, "portability" of student funding[107] and recognition of learning credits and diplomas gained in other countries.

Academic recognition is a core action line of the Bologna Process and is governed by the Lisbon Recognition Convention of 1997[108], now ratified by all EU Member States with the exception of Cyprus. The most recent stocktaking report of the Bologna Process[109] concluded that there is a long way to go before there is a coherent approach to recognition of qualifications in Europe.

Box 4-6: Policy and practice: EU funding support for academic recognition: PRIME[110]

The project “Problems of recognition in making Erasmus” (PRIME 2010), aims to deliver a qualitative and quantitative analysis of current practice of recognition in the EHEA, collect best practices and success stories and create a student guidebook and video guide for current and future Erasmus students. It is hoped these tools will provide students with clear information on their rights and obligations in terms of recognition and drive forward improvements in recognition practice at institutional and national level.

Public student support funding is frequently not portable across national borders in the EU: only a few countries/regions actually provide unconditional support to students studying

103 Eurydice (2010)
104 http://www.uvm.dk
105 “Promoting the Learning Mobility of Young People”, Green Paper, COM(2009) 329 final.
106 http://register.consilium.europa.eu/pdf/en/11/st10/st10545.en11.pdf
107 The ability to have access to national student support funding (grants and/or loans) during study periods abroad.
108 Convention on the Recognition of Qualifications concerning Higher Education in the European Region
109 Rauhvargers, Deane and Pauwels (2009)
110 See http://www.esn.org/content/prime-problems-recognition-making-erasmus

abroad. These include Belgium (German-speaking Community), Luxembourg and the Netherlands. Some non-EU Member States, including Norway, have introduced fully portable funding mechanisms (see below). National funding is not portable in any cases in Italy (with the exception of two autonomous regions), Latvia, Poland and Romania. The majority of the remaining Member States are between these extremes, and provide support when certain conditions are fulfilled.

Box 4-7: Policy and practice: Portable student funding in Norway[111]

Norwegian students may spend financial support of approximately EUR 10 600 a year on full-time studies in a country of their own choice. They may also get extra support to cover tuition fees at foreign universities, partly as a grant and partly as a loan, to target exchange students and Master's level.

5. HIGHER EDUCATION INSTITUTIONS AS DRIVERS OF INNOVATION

5.1. Higher education institutions as centres of open innovation

In the context of national and regional innovation strategies for smart specialisation[112] and in partnership with research centres and businesses, higher education institutions can play a crucial role in knowledge and technology transfer – the process through which ideas are turned into innovative marketable products and services. There are a range of mechanisms by which higher education institutions can contribute to these strategies, varying in their complexity.

At one end of the scale, there are "transactional" services, provided by institutions in response to specific requests or requirements from outside organisations, with clear objectives and specified *outputs*. However, there are also more developmental or transformational activities, which can be in response to latent or unstated needs, usually involving multifaceted partnerships and with less clear timelines and a more *outcome* driven approach. For instance, institutions can provide advices and services to small and medium-sized enterprises (SMEs) and participate in schemes promoting the training and placement of high-level graduates in innovative businesses. They can also host incubators for spin-offs in science and technology parks and be linked to innovative clusters and networks. Such activities are frequently supported by dedicated national funding instruments and regional development funds, as well as the European Regional Development Fund (ERDF).

Realising the potential contribution of higher education institutions to regional innovation and growth requires to overcome barriers and to take advantage of enablers to build connections between the different partners in the so-called "triple helix": higher education institutions and research centres, businesses and public authorities. "Disconnections" can occur both between and within the three types of partner and the barriers to overcome are of different nature. For instance, higher education institutions are usually focused on teaching and research, driven by academic outputs and are part of national academic systems that are not targeted to respond to regional needs. As a result, there some institutions are viewed as being 'in' the region but not 'of' the region where they are located.

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111 See: http://www.lanekassen.no/Toppmeny/Languages/English/Norwegian-students-abroad/

112 Defined as "an entrepreneurial process of discovery that can reveal what a country or region does best in terms of science and technology" – see Foray et al (2009)

In assessing the role of higher education institutions in the region, it is useful to identify the steps needed to create "connected region", in which institutions are key players. The process for connecting institutions into a regional innovation system requires a critical evaluation of the ability of the region's public institutions and private businesses to articulate a demand for, and capacity to absorb, university expertise. There is ample evidence from national and international case studies that successful partnerships involve 'boundary spanners' providing leadership within and across the partners and enabling a mutual understanding of the drivers affecting all the partners[113].

Through this connecting process, higher education institutions become key partners for the regional authorities in formulating and implementing their smart specialisation strategies. They can contribute to a rigorous assessment of the region's knowledge assets, capabilities and competencies, including those embedded in the institutions' own departments, as well as local businesses, with a view to identifying the most promising areas of specialisation for a region, but also the weaknesses that hamper innovation.

Higher education institutions that are already strongly involved in regional economic development are those that are most suitable to join this smart specialisation process in the short term. Moreover, it is necessary to raise the awareness of other institutions and to encourage them to engage more actively in smart specialisation strategies. Institutions dealing with economics, public policy and administration, as well as those dealing with specific policy areas (such as industry, health, energy, environment, culture) can provide public authorities with strategic advice, as well as experts to work directly on regional development priorities.

The European Commission has set a set a Smart Specialisation Platform for providing methodological guidance and practical assistance to the national and regional authorities involved in the preparation of these strategies[114]. The toolbox of this Platform will include a Guide 'Connecting universities to regional growth' to facilitate successful partnerships between higher education, research institutions, businesses and public authorities.

6. CREATING THE GOVERNANCE AND FUNDING CONDITIONS FOR SUCCESS

6.1. Funding higher education

Table 6-1 shows public and private expenditure on higher education as a percentage of GDP in the EU and selected non-EU countries for the most recent year for which comparable data is available[115]. The data here include all spending on higher education, including on research and development. The table distinguishes between *total* public spending on higher education and *direct* public spending on higher education. The latter includes direct payments to institutions, but excludes payments to private individuals in the form of student support. Where there is a considerable difference between the total and direct public spending figures – for example in Cyprus, Denmark, the UK, Sweden, the Netherlands and Austria - this is

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113 See, for example, the forthcoming European Commission publication *Connecting Universities to Regional Growth: A guide to help improve the contribution of universities to regional development, with a view to strengthening economic, social and territorial cohesion, in a sustainable way*.

114 http://ipts.jrc.ec.europa.eu/activities/research-and-innovation/s3_a.cfm

115 2009: Comparable expenditure data only becomes available around three years after the reference year.

typically explained by relatively high expenditure on student support mechanisms, through which public money is transferred to individuals in the form of grants (and potentially loans). Private expenditure on higher education includes tuition fees paid by students and research funding and other payments from non-governmental sector sources. As students may receive publicly funded grants or loans, which they in turn use to cover tuition fees (which count as private expenditure), it is preferable to use the combined total of direct public spending and private spending to avoid double counting and gain a more accurate comparison of national spending patterns.

Table 6-1: Public and private expenditure of higher education in Europe as a proportion of GDP

Country	Total public spending		Of which direct public spending	Total private	Total private plus direct public
	2001	2008	2008	2008	2008
EU-27	1.08	1.14	0.92	0.39	1.30
Belgium	1.34	1.38	1.19	0.30	1.50
Bulgaria	0.82	0.89	0.83	0.69	1.53
Czech Republic	0.79	0.97	0.92	0.27	1.20
Denmark	2.71	2.19	1.57	0.70	2.27
Germany	1.10	1.21	0.98	0.25	1.23
Estonia	1.03	1.13	0.96	0.26	1.21
Ireland	1.22	1.31	1.14	0.24	1.38
Greece	1.07		1.42 (05)	:	1.5 (05)
Spain	0.97	1.07	0.96	0.26	1.22
France	1.21	1.24	1.15	0.32	1.47
Italy	0.80	0.84	0.67	0.41	1.08
Cyprus	1.14	1.85	0.91	0.89	1.80
Latvia	0.89	0.99	0.92	0.72	1.64
Lithuania	1.33	1.04	0.89	0.44	1.33
Luxembourg	:	:	:	:	:
Hungary	1.08	1.02	0.87	0.3 (06)	1.1 (06)
Malta	0.88	1.06	1.06	:	1.1 (05)
Netherlands	1.36	1.52	1.07	0.47	1.54
Austria	1.37	1.49	1.12	0.20	1.32
Poland	1.04	1.05	1.03	0.50	1.53
Portugal	1.03	0.95	0.81	0.49	1.30
Romania	0.78		1.08 (07)	0.53 (07)	1.6 (07)
Slovenia	1.28	1.22	0.93	0.18	1.11
Slovakia	0.82	0.77	0.62	0.44	1.06
Finland	1.99	1.90	1.62	0.08	1.70
Sweden	2.00	1.82	1.36	0.17	1.52
UK	0.79	0.84	0.39	0.83	1.22
Croatia	:	0.95	0.92	0.32	1.24
Iceland	1.07	1.49	1.16	0.10	1.25
Turkey	0.87	:	:	:	:
Norway	1.84	2.08	1.16	0.04	1.20
United States	1.48	1.26	1.00	1.68	2.69
Japan	0.55	0.65	0.48	1.01	1.50

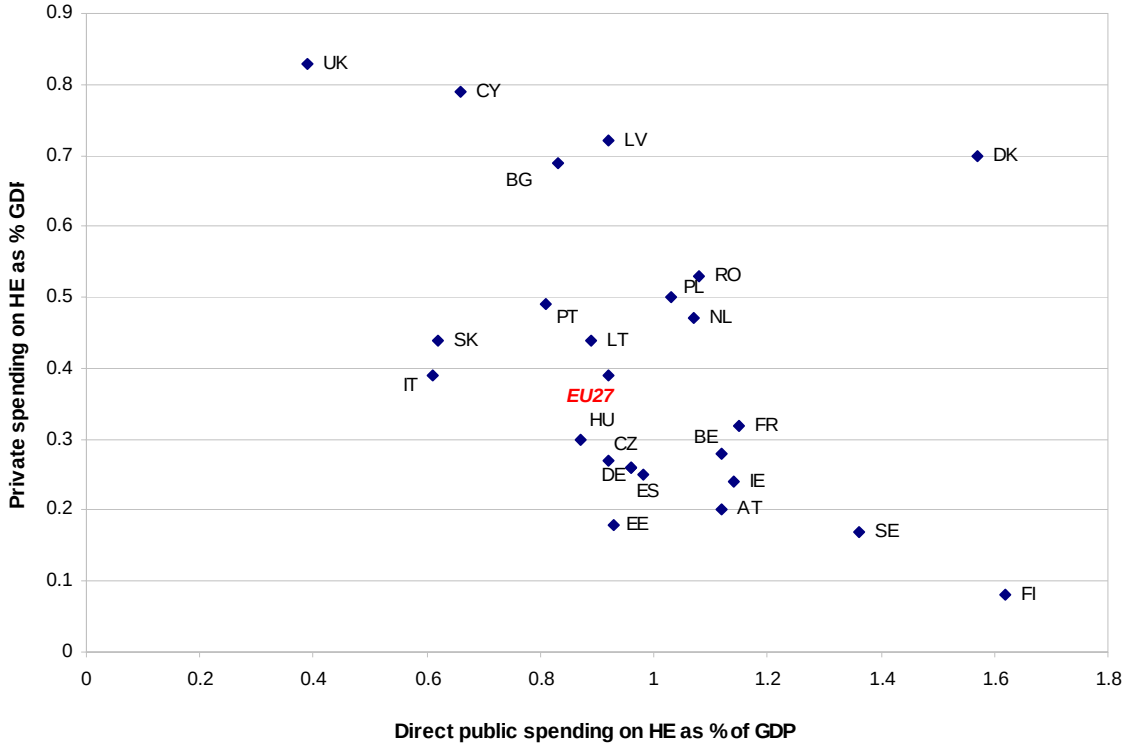
Source: Eurostat (UOE data collection). Spending on the tertiary level includes R&D spending at universities.

In 2008, the average level of combined direct public and private spending on higher education in the EU was 1.3% of GDP, varying from around 1.06% in Slovakia[116] to 2.27% in Denmark. On an EU scale, a clear majority of expenditure on higher education comes from the public purse, although private expenditure is far from insignificant, ranging from less than 0.2% of GDP in Finland, Sweden and Slovenia to 0.7% or above in Denmark, Bulgaria, Cyprus and the UK. Average direct public expenditure and private expenditure in the EU lag considerably behind spending levels in the US. This is particularly true in the case of private spending on higher education, which equates to 1.68% of GDP in the US (compared to 0.39% of GDP in the EU) and is the key factor in the exceptionally high level of total investment in higher education in the US (accounting for 2.69% of GDP in 2008).

As illustrated more clearly in Figure 6-1, it is possible to categorise EU Member States into several broad categories according to their higher education spending profile. There are the UK, Cyprus and Bulgaria, which, by EU standards, spend a comparatively high proportion of GDP on higher education, with a high proportion of private investment. At the other end of the spectrum, there are Finland and Sweden, where the vast majority of the high overall levels of spending comes from public sources, and private investment is low. France, Belgium and Austria present a similar, but less pronounced pattern, with total expenditure at lower levels, but still above the EU average. Denmark is notable as the only EU Member State with high levels of both public and private spending on higher education. Then come a middle group of Member States, including Latvia, Romania, the Netherlands and Portugal with above average spending on higher education as a proportion of GDP, with a mixture of public and private investment. A final, large cluster of remaining Member States has comparatively low overall levels of spending, and low shares of private investment.

[116] Along with SK, combined direct public and private spending was below the EU average in IT, HU, MT, SI, CZ, EE, ES, UK and DE

Figure 6-1: Direct public spending and private spending on higher education as % GDP (2008)[117]



Source: Eurostat (UOE data collection). Spending on the tertiary level includes R&D spending at universities.

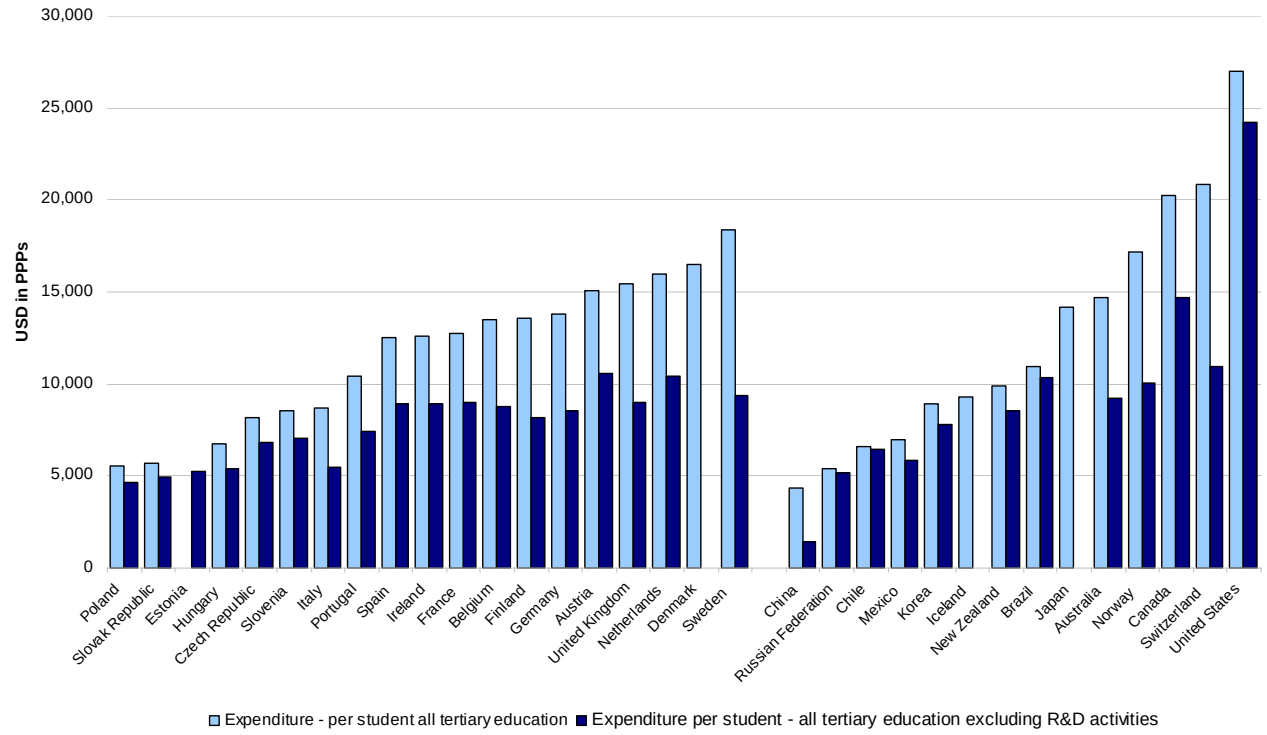
The data shown above naturally reflect relative, rather than absolute, levels of spending. Countries with higher GDP per capita are able to spend more in absolute terms for every percentage point of GDP. This to some extent helps to explain the comparatively low levels of spending on higher education as a proportion of GDP in Ireland, Germany and, to a lesser extent, Spain – all of which have relatively high levels of GDP per capita.

Figure 6-2, based on OECD calculations, attempts to provide an indication of the absolute level of investment in higher education by showing the expenditure per student in selected EU and non-EU countries in US dollars converted using Purchasing Power Parity. The chart shows both total investment per student and investment per student excluding R&D expenditure – the latter giving a better impression of investment levels in core teaching activities. This alternative measure of investment also shows the Nordic countries, the Netherlands and the UK with the highest levels of investment in the EU and a number of Central and Eastern European states, along with Italy, with among the lowest levels of investment. It is notable that those EU countries with the highest level of overall spending per student – and particularly Sweden, the Netherlands and the UK also devote a comparatively high proportion of total investment to research and development. Figure 6-2 also confirms the very high levels of investment in higher education in the US, with a comparatively small difference between spending per student with and without R&D spending. Although it may reflect differing accounting methods, this provides and indication of the scale of investment in

[117] Data on private expenditure for HU are from 2006, for private and public expenditure for RO are from 2007

teaching and learning facilities, at least in the top US universities, in comparison to the level in the EU.

Figure 6-2: Expenditure per student in higher education in developed and emerging economies



Source: OECD, Education at Glance (2010). Data for 2007 showing annual expenditure by educational institutions per student for all services

The expansion of higher education systems of the last decade, combined in some cases with increased pressure on public finances and evidence about the high individual returns of higher education, has led to an ongoing debate about the appropriate balance between public and private investment in higher education. Over the last decade, more countries have either introduced or raised tuition fees for individuals or at least started a policy discussion on the topic[118], even though public funding is and is likely to remain the dominant source of investment in most EU countries.

The recent economic crisis has led to a renewed emphasis on the long-standing question of the effectiveness and efficiency of public expenditure on higher education[119] and the right level and modes of public investment in human capital[120]. The central role of education, training and human capital development in the Europe 2020 Strategy means these questions also come to the fore in the latest EU Annual Growth Survey and the related country-specific recommendations[121].

118 See CHEPS (2010c)

119 See European Commission (2010c)

120 This debate reaches well beyond the EU. See for example: OECD Education Ministerial Meeting, Invest in Human and Social Capital: new post-crisis challenges, Paris 4-5 November 2010 (Chair's Summary).

121 European Commission (2011b)

As comprehensive, comparable data on higher education spending takes several years to become available, it is not yet possible to accurately assess the impact of the crisis on government spending on higher education. However, a recent survey by the EUA[122] highlights substantial cuts in public spending on higher education in a number of Member States, including Greece, Italy, Latvia and the UK[123], with smaller scale reductions in a number of other Member States. While the picture is stable in other countries, only a few Member States appear to have increased funding for their university sector: most notably France and Germany.

In those countries where public spending cuts have been implemented, the EUA survey highlights a proportionally greater impact on teaching than on research. The reductions in the level of funding available for teaching appear likely to place further strain on systems that have already had to cope with large increases in student numbers. Moreover, there is evidence that the crisis itself is further increasing demand for higher education, as individuals postpone or avoid entry into difficult labour markets by choosing to study or study longer[124]. In the short to medium term, this situation is likely to have an adverse effect on quality, as funding per student place declines further, and/or increase pressure for tuition fees to compensate for the decrease in public funding per place. The recent Eurydice study, Modernisation of higher education in Europe: Funding and the Social Dimension provides an overview of current levels of tuition fees and student support in the EU[125].

The developments related to the impact of the economic crisis and debates over tuition fees are taking place against a backdrop of wider, longer-term evolutions in the pattern of higher education funding in the EU. The most important trends include the following issues:

A longer-term trend[126] towards the use of competitive funding mechanisms by public authorities. These competitive funding methods include specific funding schemes, such as the Excellence Initiative in Germany, as well as less high profile changes to research funding allocation. The 2010 CHEPS study found that in nine out of 33 European countries surveyed, universities receive a high share of competitive research funds, accounting for over 25% of combined core funds and research budgets.

At the same time, there is evidence of a diversification in the funding sources drawn on by higher education institutions. The 2010 CHEPS study found higher education institutions in 14 countries receive more than 25% of their revenues from “third party” funds (ie not directly from public sources). This trend appears to be well established and intensifying, evening in countries where public investment in higher education is increasing, such as Germany[127]. The ability of institutions to draw increasingly on alternative sources of funding in part reflects increasing levels of financial autonomy[128].

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122 EUA (2011a)

123 In the UK, the decline in direct public spending is set to be compensated by increased private contributions in the form of tuition fees, which will in most cases at least double from the academic year 2011-2012.

124 OECD (2011a)

125 Eurydice 2011

126 See CHEPS (2010c)

127 Rollwagen, I (2011)

128 CHEPS (2010c) found universities in 14 countries had a high level of financial autonomy in 2008 (compared to 11 countries in 1995).

The development of a more substantial private higher education sector in the EU, alongside public universities. This trend is still concentrated mainly in Central and Eastern Europe, as well as in certain southern European countries. It also tends to be focused in particular disciplines (notably business-related) and types of provision (including continuing education, e-learning institutions). In the short to medium term, however, this trend will have an important impact on the distribution of public and private spending on higher education
The emergence of new models public funding to students, combining grants and/or loans to cover both living expenses and, where they exist, tuition fees. New loans systems have been introduced not only in the UK, but also in Sweden and other countries. Where such funding is intended to covered tuition fees, it begins to follow a "funding follows the student", rather than a traditional institutional, funding model. Lithuania has recently implemented a voucher system which takes this model even further.

Box 6-2: Policy and Practice - Student voucher system in Lithuania[129]

A new funding model based on a 'student voucher', whereby the funding follows the student, has been introduced in Lithuania. The student voucher covers the full study costs, e.g. the salaries for teachers and other staff, the necessary resources and services, and incentives for students (grants). The students choose freely an educational institution, be it public or private. Prior to the reform, the state financed only 47% of all costs per state-funded place, which led to concerns about the quality of study. With the implementation of the reform, twice as much funding has been allocated to each study place.

6.2. Governance of higher education

Europe's higher education landscape is characterised by a wide range of organisational and governance models. In all EU countries, higher education institutions are legally autonomous[130], although the extent of this autonomy varies between Member States. In all cases, institutional autonomy is framed within national accountability systems, intended to ensure institutions are answerable to governments, taxpayers and society at large for their activities and use of public resources. All accountability systems involve checks and balances to institutional autonomy and to some extent condition the freedom of institutions to act, although the degree of direct state intervention and control has traditionally varied considerably across the Union. While the majority of higher education institutions in most Member States are formally public institutions, in others they are independent (albeit publicly funded), while in many countries private institutions co-exist alongside public or publicly funded universities.

The last decade has been characterised by widespread and far-reaching reform of higher education governance in EU Member States. The broad trend has been towards increased institutional autonomy, reflecting evidence that more autonomous institutions are better able to focus on their particular strengths and adapt to a changing environment at local, regional and international level. The Bologna Process and the EU modernisation agenda have both promoted greater institutional autonomy, combined with appropriate accountability mechanisms, arguing that "universities will not become innovative and responsive to change unless they are given real autonomy"[131].

129 See: http://www.smm.lt/en/index.htm
130 Eurydice (2008), CHEPS (2010b)
131 European Commission (2006a), p.5

Governance reform is a complex area, covering many aspects of higher education systems and their day-to-day operation. Key issues include human resource management, financing and quality assurance, course planning, access and internationalisation. A recent review of governance in higher education in 33 European countries[132], including all EU Member States, and covering different dimensions of governance found:

In 20 countries (out of 33[133]) universities have considerable institutional autonomy in starting new teaching and research programmes;

- In 14 countries universities have a high level of financial autonomy;
- In 11 countries universities enjoy a high level of institutional autonomy in terms of selecting their academic staff;
- In 5 countries universities have a high level of autonomy in determining their internal governance structures;
- The vast majority of European countries have internal and external evaluation systems in place for teaching and for research;
- In 16 countries, universities have supervisory or governing boards with external stakeholder membership.

The same study found many country-specific examples of a positive interaction between governance reform and the performance of institutions, although the difficulties associated with performance measurement across countries, as well as national institutional particularities, make it hard to identify a single model for successful governance.

Across the EU, governance reform has often resulted in higher education institutions assuming responsibilities formerly held by ministries, notably in the areas of human resources and financial management. The introduction of performance contracts and multi-year agreements between the state and the institution and the move from line-item to lump sum budgeting have led to a "devolution" of authority. This is reflected in the strengthening of the position of the executive head of the institution (rector, president, vice-chancellor) or department (dean) and the creation of new institutional governance bodies such as advisory or supervisory boards, largely or solely composed of external stakeholders.

In parallel, the development of external quality assurance systems highlighted above, has led to a greater centralisation of accountability in many cases, with institutions called upon to justify their performance to a greater extent than in the past. Both the increased devolution of responsibility and additional requirements in terms of performance reporting, place new demands on senior management within higher education institutions. This in turn calls for a professionalization of the management within institutions, including through training.

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132 CHEPS (2010b)

133 EU-27, NO, LI, IS, CH, TR, HR.

Box 6-3: Policy and Practice - Supporting the efficient management of institutions, Czech Republic[134]

The Czech Ministry of Education has launched a project (running from 2009 to 2012) to respond to the need to strengthen the effectiveness of higher education management in the Czech Republic. The core goal of the project is to support and develop efficient management principles, especially in economic and administrative processes in higher education institutions and research organisations. The main output of the project will be a new set of guidelines for institutions, along with policy recommendations on how best to support institutional development, notably through training.

7. THE INTERNATIONALISATION OF HIGHER EDUCATION

The growing internationalisation of the higher education sector is characterised by two potentially contradictory trends. It is possible to observe in parallel an increase in cooperation - between higher education institutions, departments and individuals across the world - and intensification in international competition – as institutions and countries compete for mobile students and staff. In a related trend, the development of higher education systems in emerging economies, and notably the so-called BRIC[135] countries, has a double set of consequences for European higher education. Firstly, it increases the supply of domestic graduates for the national labour markets in these countries, allowing the economies in question to upgrade their skills base and thus increasing pressure on the Europe's economy to compete and European higher education to keep pace. Secondly, it brings new competitors into the global market place for higher education, which may at least mean fewer students from these countries choose to go abroad for study and may attract prospective international students away from Europe. The global higher education landscape is already a complex picture of competition in some areas and cooperation in others. This complexity seems set to increase in the years to come[136].

7.1. Internationalisation of the study body

The last decade has seen an increasing "internationalisation" of the study body in the EU. In 2008, roughly 1.5 million (7.8%) of the 19 million higher education students in the EU were enrolled in countries other than their country of citizenship[137]. This figure compares with only 788 000 in 2000 (5% of total students at that time), equating to an average annual increase of 8.1% over the eight-year period. This trend has been driven by increased international student mobility both within the EU and on a global scale. Figure 7-1 shows students with foreign nationality as a share of the total student population in the EU, as well as the US and Japan, distinguishing between country or region of origin. The data includes students with foreign citizenship, rather than mobile students *per se*. This means the figures include residents of the countries of study who happen to have foreign citizenship.

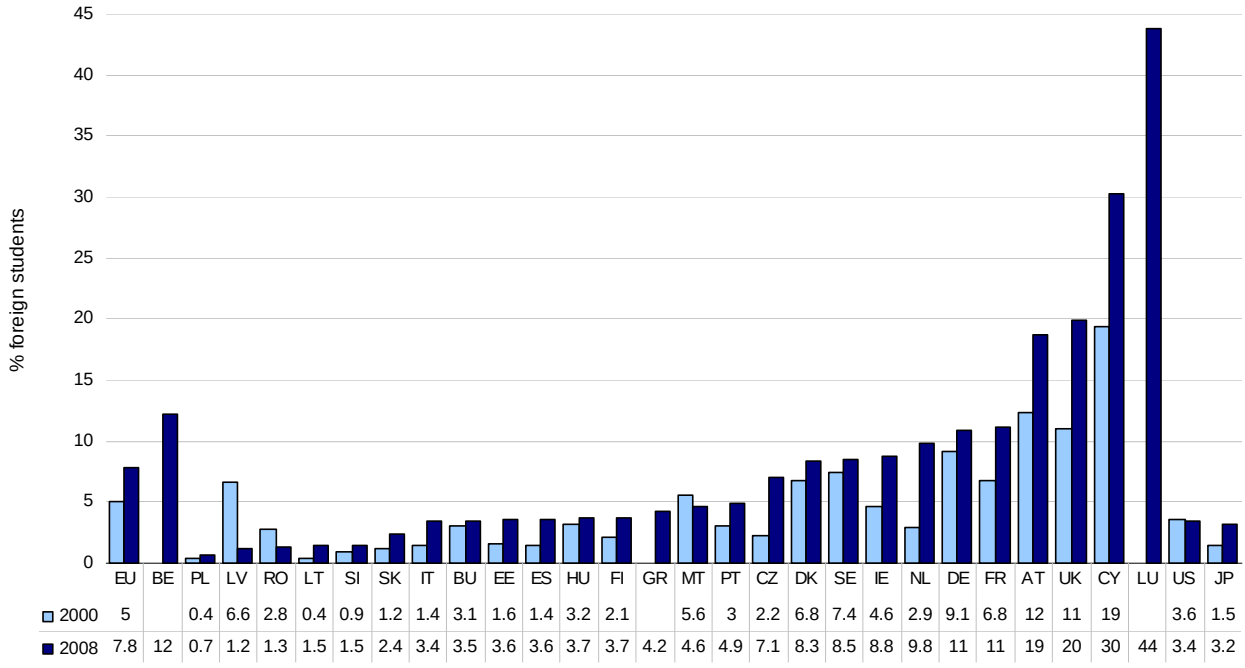
134 http://www.msmt.cz/european-union/ipn-in-the-field-of-tertiary-education-research-and-development/efficient-institutions?lang=2

135 Brazil, Russia, India and China

136 On this, see OECD (2009)

137 This includes both EU students studying in another EU country and non-EU students studying within the EU

Figure 7-1: Proportion of foreign students enrolled in EU Member States, the US and Japan (2000/2008)



	EU	BE	PL	LV	RO	LT	SI	SK	IT	BU	EE	ES	HU	FI	GR	MT	PT	CZ	DK	SE	IE	NL	DE	FR	AT	UK	CY	LU	US	JP
2000	5		0.4	6.6	2.8	0.4	0.9	1.2	1.4	3.1	1.6	1.4	3.2	2.1		5.6	3	2.2	6.8	7.4	4.6	2.9	9.1	6.8	12	11	19		3.6	1.5
2008	7.8	12	0.7	1.2	1.3	1.5	1.5	2.4	3.4	3.5	3.6	3.6	3.7	3.7	4.2	4.6	4.9	7.1	8.3	8.5	8.8	9.8	11	11	19	20	30	44	3.4	3.2

Source: Eurostat - UOE data collection (UNESCO, Eurostat, OECD)

Figure 7-1 masks significant differences in the composition of the foreign student cohort in different Member States. Whereas in countries like Luxembourg, Austria and Belgium, a majority of foreign students in 2008 come from other EU countries[138], in Cyprus, France, Malta and Portugal, for example, more than 80% of all foreign students come from outside the EU. As shown in Table 7-1, the number of non-EU higher education students enrolled in EU higher education institutions more than doubled in absolute terms between 2000 and 2008 (from less than 500,000 to almost 1 million) to account for 67% of all foreign students (compared to only 60% in 2000). The number of students from India and from China grew six-fold from 2000 to 2008, reaching 43 000 from India and 116 000 from China in 2008.

Table 7-1: Foreign students in the EU

	Foreign students in EU-27 (in 1000)		
	2000	2007	2008
Total	788.5	1430.2	1467.4
Europe	384.4	599.6	608.1
- EU 27	316.4	479.2	487.8
-other Europe	68.0	120.4	120.3
Africa	134.2	246.0	241.7
Morocco	38.2	46.3	44.2
Algeria	14.9	21.8	20.3
Nigeria	3.5	22.0	23.3
Asia	183.0	405.5	413.5
China	18.6	117.5	115.8
India	6.6	39.3	43.1

138 Around a third of foreign students in Austria come from Germany. Over half the foreign students in Luxembourg come from France, Germany and Portugal.

	Foreign students in EU-27 (in 1000)		
	2000	2007	2008
Japan	10.7	12.4	10.5
Americas	63.1	121.6	124.3
USA	22.7	32.2	30.8
Canada	5.8	10.8	10.8
Brazil	6.8	12.9	14.6
Oceania	2.9	7.7	7.1
Unknown nat.	20.9	49.8	64.3

Source: Eurostat (UOE collection)

In the context of international student mobility flows, the EU is a net receiver of students. Over 700 000 more students with non-EU citizenship are studying in the EU than EU citizens are studying outside the EU. However, the US is a net receiver of students from EU, with more than twice as many students from the EU going to the US as the reverse. In 2008, 138 000 US students came to study in Europe, although this figure includes short stays and summer courses. It is estimated that only around 30 000 US students annually come to study for at least a year.

Looking at the wider picture, Table 7-2 shows the proportion ("market share") of all students studying outside their country of citizenship in selected countries across the world in 2000 and 2008, based on OECD data. This shows that 18 EU countries together host almost 40% of foreign students in the world and that this proportion remained broadly stable between 2000 and 2008. Around 28% of these students came from other EU Member States and over 40% from the European Higher Education Area. Moreover, within the EU, there is a marked concentration of foreign students in the UK, Germany and France, reflecting historical international links and language, as well as the attractiveness of the higher education systems in these countries.

Over the same eight-year timeframe, the US market share in foreign students fell from 24% to less than 19% (although absolute numbers have increased), partly reflecting increases in foreign student intake in Russia, EU countries such as Italy and the Netherlands and New Zealand. Despite this trend, the US continues to attract considerably more students from Asia than the EU: in 2008, for example, over 50% of the 185,000 Indian students studying abroad went to the US[139].

Table 7-2: Market share for foreign students 2000 and 2008

	Market share, 2000 (%)	Market share, 2008 (%)
Total share of 18 EU States included below (shaded rows)	**39.3**	**38.4**
United States	24.1	18.7
United Kingdom	11.3	10.0
Germany	9.5	7.3
France	7.0	7.3
Australia	5.4	6.9
Canada	4.8	5.5
Russian Federation	2.1	4.3
Japan	3.4	3.8

139 In 2008, almost 95,000 Indian citizens were studying in higher education in the US, compared to 34,600 in the 19 EU Member States that are members of the OECD.

	Market share, 2000 (%)	Market share, 2008 (%)
Italy	1.3	2.0
Spain	1.3	1.9
New Zealand	0.4	1.8
Austria	1.5	1.6
Switzerland	1.3	1.4
Belgium	2.0	1.3
Netherlands	0.7	1.2
Korea	0.2	1.2
Sweden	1.3	1.0
Czech Republic	0.3	0.8
Greece	0.4	0.8
Turkey	0.9	0.6
Denmark	0.7	0.6
Portugal	0.5	0.6
Norway	0.4	0.5
Hungary	0.5	0.5
Poland	0.3	0.4
Ireland	0.4	0.4
Chile	0.2	0.4
Finland	0.3	0.3
Slovak Republic	0.1	0.2
Estonia	0.0	0.1
Mexico	0.1	0.1
OTHER COUNTRIES	17.4	16.6

Source: OECD Education at a Glance 2010

7.2. Expansion of higher education internationally

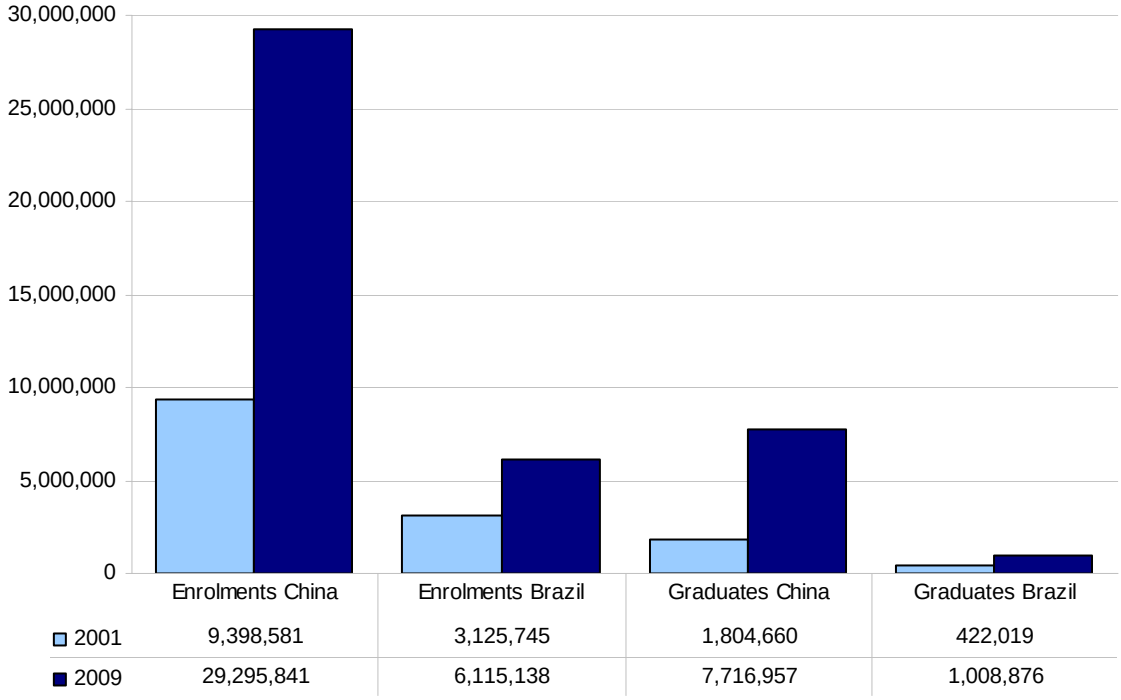
Investment in higher education as a driver of innovation has become a worldwide trend[140] and a growing number of emerging countries – in particular the BRIC states- have started investing massively in their universities and research organisations with a clear focus on science and technology[141]. As noted, these developments increase the pressure on European higher education to keep pace in terms of quality and attractiveness.

Figure 7-2 shows the growth in students enrolled in higher education and in annual numbers of higher education graduates in China and Brazil between 2001 and 2009. This illustrates the expansion of the sectors in these two countries in the last decade, with student enrolment in China increasing by over 200% (almost doubling in Brazil) and the number of graduates quadrupling in China and more than doubling in Brazil.

140 Weber, L. and J. Duderstadt (2010)

141 ACA Seminar on *Brazil, Russia, India, China: Key points on the European Higher Education Compass?* Brussels, 18 March 2011.

Figure 7-2: Number of higher education students and graduates in China and Brazil 2001 and 2009



Source: UNESCO

Over the last few years, awareness of mounting international competition in higher education and research has grown among European governments and universities. This has been one of the factors behind a series of current and announced policy responses, including initiatives to boost the competitiveness of national higher education systems. This is the case, for example, in Denmark, the UK, Germany (Initiative for Excellence[142]), France (through the development of regional poles of excellence), Spain (through the selection of thematic "campuses of international excellence", as part of a comprehensive national plan called Strategy University 2015). These initiatives are to a varying extent also a response to the challenge posed by rankings: there is little doubt that in France, for example, the pooling of research capacities on a regional basis and the merger of universities (as in the case of the formerly three universities of Strasbourg) also aims at helping national clusters of institutions gain visibility in the leading rankings.

142 http://www.bmbf.de/en/1321.php

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