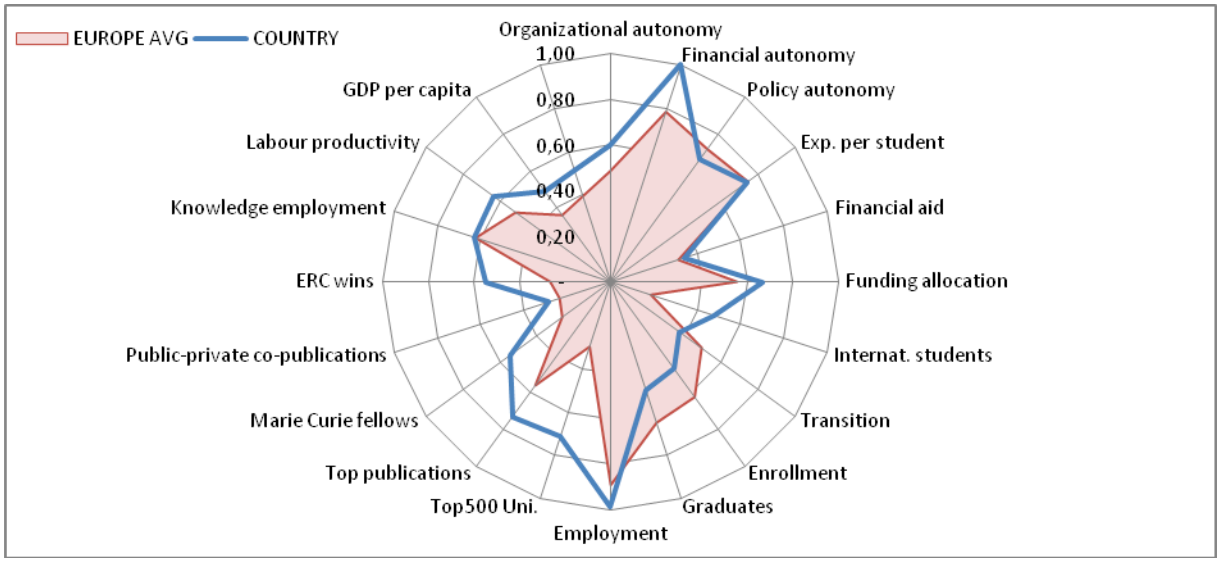
The State of University Policy for Progress in Europe

Country reports

November 2012

Country Description – Austria

Statistical Presentation[1]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		3 (2,40)	3 (2,31)	2 (2,16)
		Exp. per student[2]	**Financial aid**	**Funding allocation[3]**
		37,8% (38,0%)	17,4% (15,9%)	66,7 (56,2)
Performance	Education	**Internat. students**	**Transition[4]**	**Enrollment**
		15,1% (5,9%)	9,0% (12,7%)	27,0% (36,1%)
		Graduates		**Employment**
		16,4% (21,22%)		92,1% (82,9%)
	Research	**Top500 Uni.[5]**		**Top publications**
		0,83 (0,34)		11,4 (8,7)
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		4,45 (2,08)	56,3 (45,4)	1,55 (0,73)

[1] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[2] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[3] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[4] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[5] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

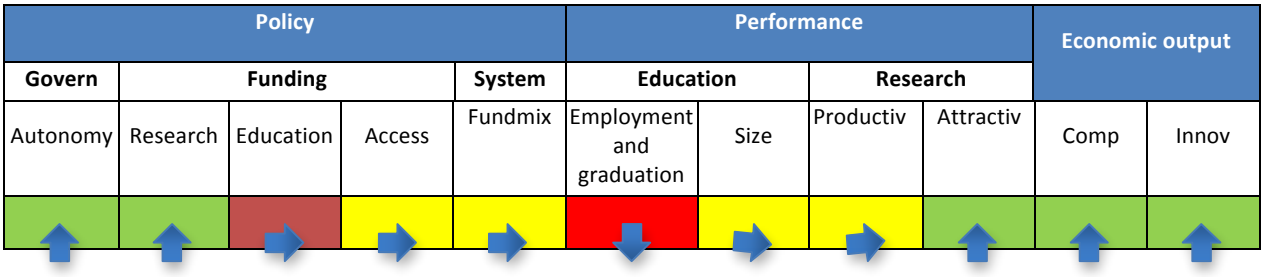
Economic Output	Knowledge employment	Labour productivity	GDP per capita
	35,4% (34,5%)	38 PPS€ (31 PPS€)	32000€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in group[6]

Overall	Medium
Graduation/employment	Medium
Research	Top

Trends prediction



Our assessment suggests that Austria belongs to upper middle group. The country's research are high comparatively to its graduation performance.

Policy

Autonomy

Austrian higher education institutions had a higher organizational and financial autonomy than the European average in 2008. Accreditation is changing as the recent Austrian federal law on quality assurance in 2011 has merged all accreditation and quality assurance bodies together and allows university to choose their own degree accreditation within or outside the country . Austria also had a higher use of performance-based measures through contracts and formulas than the European average. However, targets and funding are not yet fully aligned. According to a study by the European Commission, Austrian universities had to implement a wide range of new management instruments (contract management, lump sum budgeting, performance-based allocation of funds, intellectual capital report etc.). This might have created a loss of energy in the 'managerialisation' of universities[7].

Funding

Austria's level of expenditure per student as a percentage of GDP per capita and expenditure on financial aid was on more or less on a par with the European average in 2008. Universities are allowed to introduce fees by law, and did so during the academic year 2012/2013. Third party funding

[6] These indicators are based on standardized country statistics.

[7] European Commission (2006) The extent and impact of higher education governance reform across Europe, Final report to the Directorate-General for Education and Culture of the European Commission, Contract: 2006 – 1407 / 001 – 001 S02-81AWB ,Part Three: Five case studies on governance reform

(independent from study fees) is increasing and the question of open access is debated. The condition in Austria is highly complex. There is no clear legal basis for tuition fees following a ruling of the constitutional court on the previous regulation. Since 2008, the public budgets of universities have increased[8].

University performance and outputs

Education

Austria had lower graduation rates than the European average, as well as lower enrollment levels of the population aged 20 years old even though it allows open access to every applicant (with some exceptions like medicine). Drop outs occur in the first year. But graduate employment rates are higher than the European average. And the number of incoming students is close to three times as high as the European average. The Austrian government supports outward mobility. The Government introduced a mobility grant in 2008/2009 as a new form of financial student support, for students who go outside Austria within the European Economic Area or Switzerland[9].

Research

Austria's research indicators were higher than the European average until 2011. For example, Austria had twice more Marie Curie incoming fellows per million inhabitants than the European average and more than one ERC win per million inhabitants in 2011 (in comparison to 0.73 for the European average).

Around 70% of the basic research in Austria is carried out by universities[10]. Higher education institutions play an important role in research. In recent years many research institutions outside universities joined in and became part of the universities as sub units of the organization. The Austrian Research Promotion Agency supports research in Austria.

Economic outcomes

Austria's economic output indicators were higher than the European average, with 35.4% of knowledge employment, and 38 PPS€ generated per hour worked in 2009-2010. GDP per capita was around 9000€ higher than the European average in 2011.

Conclusion

Austrian higher education institutions are performing comparatively well in terms of research productivity, graduate employment and international attractiveness. This performance is contingent on

[8] European University Association (2012) Public Funding Observatory. URL: http://www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding/public-funding-observatory.aspx

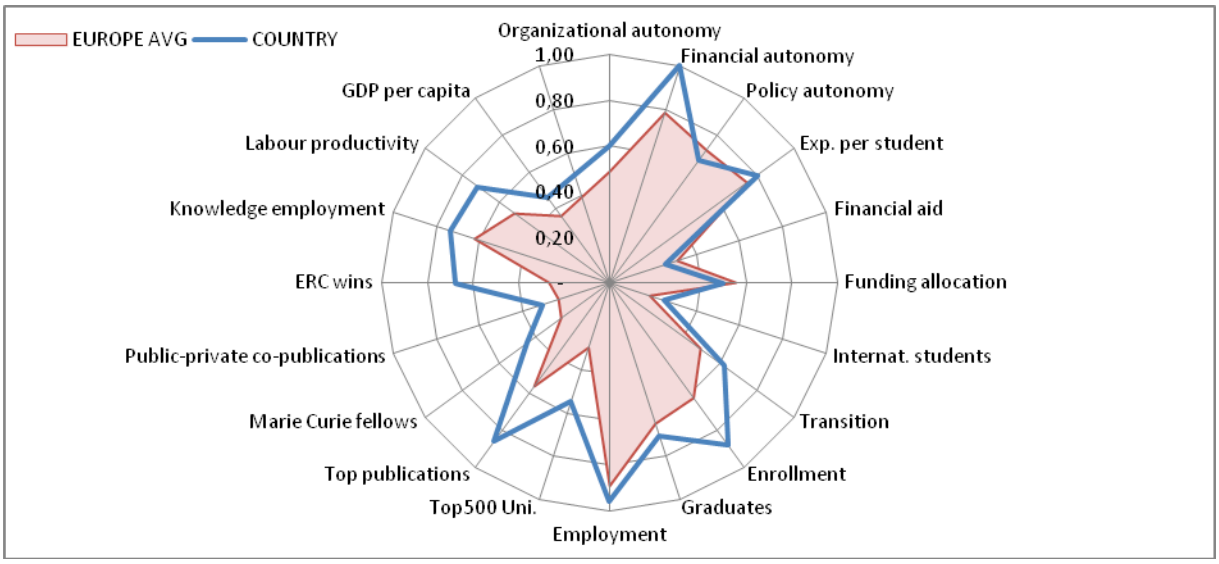
[9] OEAD (2010). Higher Education: The Austrian Higher Education System. URL: http://www.fulbright.at/fileadmin/user_upload/studyAustria/austrian_higher_education_system_2-2010.pdf

[10] For more information, see: http://www.bmwf.gv.at/startseite/forschung/national/forschung_in_oesterreich/partner_institutionen/unis_als_traeger_der_forschung/

the financial conditions of higher education institutions that universities are seeking to achieve for example by increasing student contributions. The impact of the managerial reforms undertaken in the past few years is still unclear. Major additional issues are not sufficiently solved. Access and study fees are central challenges which need more problem solving capacity from both government and universities. Universities face a period of uncertainty as regards their capacity to charge fees autonomously.

Country Description – Belgium

Statistical Presentation[11]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		3 (2,40)	3 (2,31)	2 (2,16)
		Exp. per student[12]	**Financial aid**	**Funding allocation[13]**
		40,7% (38,0%)	13,2% (15,9%)	50,0 (56,2)
Performance	Education	**Internat. students**	**Transition[14]**	**Enrollment**
		8,0% (5,9%)	14,9% (*) (12,7%)	50,7% (36,1%)
		Graduates	**Employment**	
		23,1% (21,2%)	89,6% (82,9%)	
	Research	**Top500 Uni.[15]**	**Top publications**	
		0,64 (0,34)	13,4 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		3,66 (2,08)	61,5 (45,4)	1,92 (0,73)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[11] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[12] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[13] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[14] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[15] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	41,4% (34,5%)	43 PPS€ (31 PPS€)	29900€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[16]

Overall	**Medium**
Graduation/employment	**Medium**
Research	**Top**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employment and Graduation	Size	Productiv	Attractiv	Comp	Innov
	↑	↑		↑						

Our assessment suggests that Belgium is in the middle group in terms of our overall assessment of the quality of its university policies. It also has a middle position in education, and is one of the highest performers in research. Note that this applies to the country as a whole: higher education policies may differ between the Belgium and Flemish communities.

Policy

Autonomy

Belgium was above the European average on both organizational[17] and financial autonomy (3 compared to 2.40 and 3 compared to 2.31 respectively). On the other hand, Belgium scored slightly below the European average on policy autonomy (2 compared to the European average of 2.16) in 2008.

The overall organizational autonomy in Belgium is rather high. But there are some restrictions imposed on higher education institutions in the Flemish community. For instance, the law stipulates that the executive head of the University must come from within the university[18].

The relatively high financial university autonomy in the Flemish community also masks some limitations on autonomy. For example, universities are restricted in their ability to keep a surplus and own real estate. And they are also unable to raise money on the financial markets[19].

[16] The scores reported are standardized. Please refer to the technical report for further information.

[17] It is important to mention that the score on organizational autonomy does not reflect variations between universities in Belgium, where state and public universities have less organizational autonomy than the free universities.

[18] Based on the information provided on the website of the European University Association regarding university autonomy. URL: http://www.university-autonomy.eu/countries/flanders/

[19] Based on the information provided on the website of the European University Association regarding university autonomy. URL: http://www.university-autonomy.eu/countries/flanders/

In the French community, universities have the freedom to raise funds on the financial market (to a certain degree) and to own real estate. But they have some restrictions in terms of the management of public resources[20].

Although universities have some autonomy regarding the introduction of new degree programs, the Ministry regulates the admission to certain types of education. University admission is a constitutional right, hence there is no restriction to the overall number of students (with some exceptions, students of medicine and dentistry have to pass an entrance examination). There are also certain restrictions on the language of instruction, restrictions that some would like to see relaxed[21].

Funding

Public spending per student as a percentage of GDP per capita was slightly higher than the European average (40.7% compared to 38.0% in 2008). But the percentage of expenditure on financial aid was somewhat below the average (13.2% compared to 15.9%) in 2008. Universities have their own social support systems for students. In general, Belgium universities receive funds through an output-based funding model.

Public higher education expenditure in the Flemish Community is expected to modestly increase in 2013, as stated during the preparations of the annual 2013 budget[22]. A recent Decree of the Flemish Government regarding the financing of the Special Research Fund at universities in the Flemish Community recently acknowledged investment, competition and output linked financed research. The French Community, on the other hand, is focused on maintaining (rather than increasing) current levels of funding. Some planned long-term projects might be postponed[23].

University performance and outputs

Education

Belgium scored high on education indicators in comparison to the European average. Inward mobile students constituted 8 % of its student population compared to the European average of 5.9% in 2009. 14.9% of students were from non-traditional background compared to the European average of 12.7% in 2008-2011. Belgium had a comparatively large student population, with the equivalent of 50.7% of the population aged 20 years old enrolled in a qualification equivalent to ISCED 5-6 compared to the European average of 36.1% in 2010. Graduation rates and graduate employment rate were also above the European average, with respectively 23.1% % compared to 21.2%, and 89.6% compared to 82.9%. National financial incentives encourage universities to increase the graduation rate through additional earmarked funds.

2.2 Research

Belgium was above the European average regarding all the research indicators until 2011, with for example around 2 ERC starting grant winners and 4 Marie Curie fellows per million inhabitants

[20] Estermann , T. & Nokkala, T. (2009) University Autonomy in Europe I. Brussels: European University Association.
[21] Estermann , T. & Nokkala, T. (2009) University Autonomy in Europe I. Brussels: European University Association. See also European University Association regarding university autonomy: URL: http://www.university-autonomy.eu/countries/flanders/
[22] According to Eurypedia, Higher Education in Belgium (Flemish Community)
[23] According to Eurypedia, Higher Education in Belgium (French Community)

respectively in 2011 and 2009. The research system is highly decentralized. Most initiatives undertaken to improve the quality of research and promote innovation are of a regional/community specific character (e.g. the Flanders in Action (ViA) plan specified in 2009 in the Flemish community or the Marshall Plan 2. Green formed in Walloon and the French Community also in 2009). Some general, countrywide trends serve as a common base for most of those initiatives. The Government has emphasised increasing public expenditure on research as well as improving cooperation between academic research and the private sector since 2009[24].

Economic outcomes

Belgium was above the European average on all the economic indicators. 41.4% of employees were in a knowledge intensive activity in 2009, compared to the European average of 34.5%. Each hour worked generated 43 PPS€ compared to 31 PPS€ on average in Europe in 2009-2010. The GDP per capita of Belgium was 29900€ compared to 22963€ in 2011. This indicates that Belgium has high levels of international innovation.

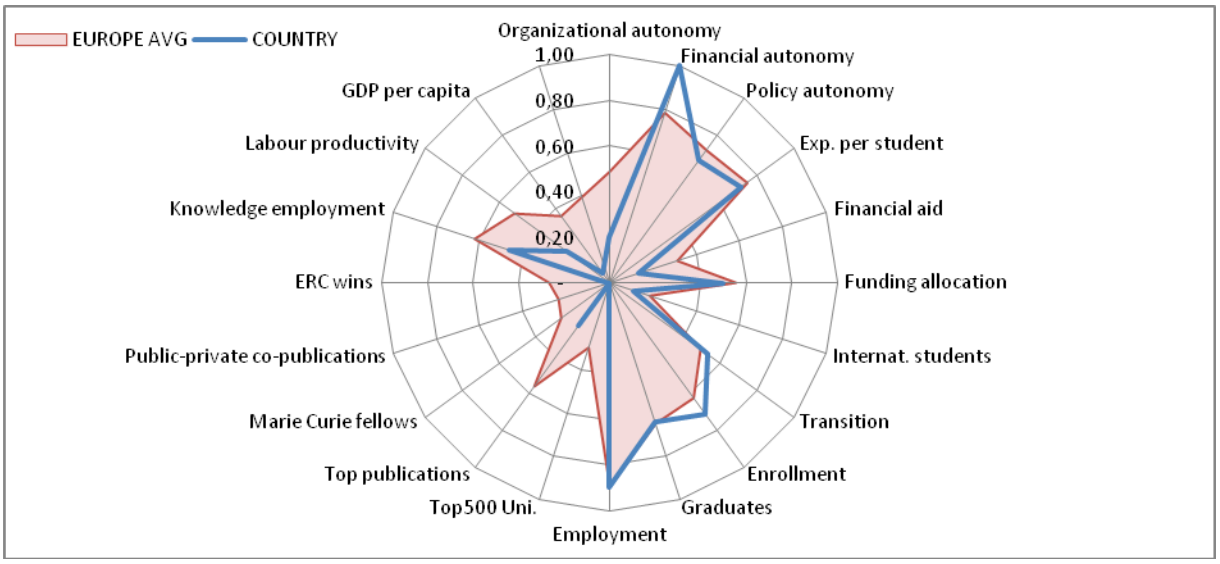
Conclusion

The overall score of Belgium's university policies, performance and economic outlook is above the European average. Many initiatives have been undertaken in both the Flemish and French communities to boost research and promote innovation. But there is still room for improvement, particularly in the area of policy autonomy.

[24] According to Erawatch, Research Policy in Belgium

Country Description – Bulgaria

Statistical Presentation[25]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		1 (2,40)	3 (2,31)	2 (2,16)
		Exp. per student[26]	**Financial aid**	**Funding allocation[27]**
		36,2% (38,0%)	6,7% (15,9%)	50,0 (56,2)
Performance	Education	**Internat. students**	**Transition[28]**	**Enrollment**
		3,4% (5,9%)	13,4% (12,7%)	41,0% (36,1%)
		Graduates	**Employment**	
		21,1% (21,2%)	83,7% (82,9%)	
	Research	**Top500 Uni.[29]**	**Top publications**	
		0,00 (0,34)	3,6 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		0,00 (2,08)	2,3 (45,4)	0,00 (0,73)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[25] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[26] Totalpublic expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[27] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[28] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[29] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	26,0% (34,5%)	14 PPS€ (31 PPS€)	3500€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[30]

Overall	**Modest**
Graduation/employment	**Medium**
Research	**Modest**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employment and graduation	Size	Productiv	Attractiv	Comp	Innov
	↓	↓		→						

Our assessment suggests that Bulgaria could improve: Bulgaria belongs to the more modest group. Bulgaria's education performance and international openness scores place the country's higher education system in the middle group. But the country's research performance remains low compared to the European average. Bulgaria does not seem to make use of structural and cohesion funds to upgrade higher education and research.

Policy

Autonomy

Bulgarian universities had a lower level of autonomy than the European average, except for financial autonomy in 2008. Bulgarian universities underwent various reforms over the 1990s and 2000s, introducing quality assurance measures and a board of Trustees for each university in 2008[31]. Bulgarian institutions also have some flexibility in terms of recruiting their staff and setting their own salaries, and current debates are taking place regarding the integration of institutes of higher education rather than keeping them independent.

Political interference may reduce the level of de facto autonomy of institutions. For example, a recent report from the World Bank cast doubt on the independence of the National Evaluation and

[30] These indicators are based on standardized country statistics.

[31] CHEPS (2008) 'Progress in higher education reforms in Europe, Governance reforms', Brussels: DG Education and Culture, p. 110

Accreditation Agency (NEEA), an agency designed to be independent from the Council of Ministers and higher education institutions, but with an ambiguous composition of the evaluation committees[32].
The election of rectors and deans by the academic staff (rather than them being appointed by the Government or board of trustees) may affect institutional changes. For example, the salaries of academics may vary close to institutional elections.
Other actors than the Government may also be relevant to understand the autonomy of institutions in Bulgaria. Institutional lobbies have a strong influence over the management of higher education institutions.

Funding

Bulgaria also had a lower level of funding than the European average in 2008. Bulgaria has had a shortage of public funding over the past decade, which decreased as a share of total funds[33]. The Bulgarian Government has enacted various austerity measures over the past several years, including in education and research. R&D expenditure for higher education as a percentage of GDP is predicted to go down from 0.07% of GDP in 2010 to a predicted 0.06% in 2011[34]. The Council of Ministers set up various reforms including the introduction of formula-based funding and tuition fees in the mid-1990s. The Government has allowed state-funded institutions to enroll students at all levels of higher education. The fee costs will be fully recovered if the number of enrolled students under this scheme does not exceed 10% of the institution's student capacity.

University performance and outputs

Education

Bar the percentage of inward incoming mobile students which is below average, most of Bulgaria's education indicators were on a par with the European average. State funded student seats encourage high enrollment rates. 41% of the population aged 20 was enrolled in higher education in 2010 compared to 36.1% on average in Europe. The law regarding the Development of the Academic staff of 2010 may impact the educational provision of Bulgaria by reconstructing the system to award degrees and titles.

Research

Bulgarian universities had a lower performance in research. The Academy of Sciences, which is not a higher education institution per say, also delivers research. Bulgaria had no registered Marie Curie incoming fellows or ERC starting grant winners per million inhabitants respectively in 2008 and 2009, and no university in the top 500 internationally according to ARWU in 2011. Governmental resources prioritise investments in infrastructure (roads and highways) rather than education and research. In addition to the decrease in public funding resulting from the financial recession, the absence of Governmental priorities reduces the opportunity for Bulgarian higher education institutions to become more productive and visible research wise. Some legislative changes may have an impact over the

[32] World Bank (2012) *Strengthening higher education in Bulgaria*. URL: http://siteresources.worldbank.org/BULGARIAEXTN/Resources/305438-1307440973243/Bulgaria-Higher-Education-executive-summary-March-2012-EN.pdf
[33] World Bank, 2012, idem
[34] Eurostat data.

medium run, including the law on scientific research promotion. This law sets principles and mechanisms for the implementation of research in Bulgaria in compliance to European accession negotiations[35]. Other initiatives include the schemes of the national research foundation, and the national roadmap for Research infrastructure of 2010, which prioritise the agglomeration of the most prominent research infrastructure[36]. The current Government has also started initiatives attract scientists in Bulgaria, partnering up with the Gates foundation to set up a high technology park in Sofia in order to attract technology specialists.

Economic outcomes

With a GDP per capita less than one fifth of the European average, employment in knowledge employment industries and labor productivity was also lower than average in 2011.

Conclusion

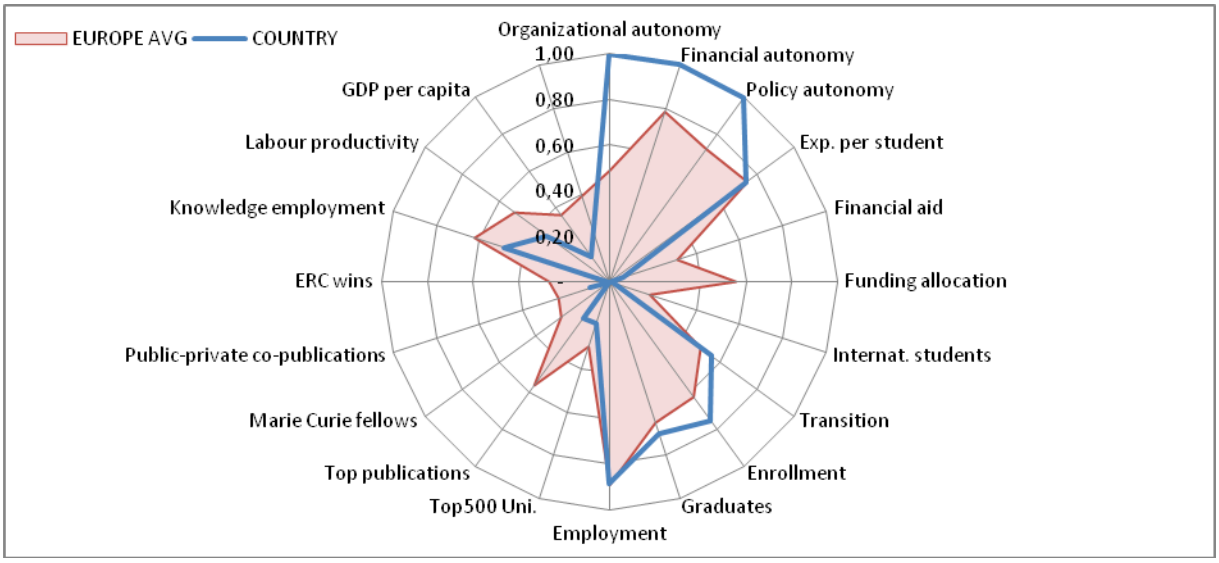
In conclusion, Bulgarian universities have seen many reforms during the transition. The universities seem still be subject of too much political interference to perform well. Moreover, Governmental incentives have valued quantity without sufficient attention for quality. The research structure is as yet still too underdeveloped to make Bulgaria a competitive partner on the European scale.

[35] Erawatch:, '*Law on scientific research promotion'*. URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/bg/policydocument/policydoc_mig_0009

[36] Erawatch:*National Roadmap for Research infrastructure*. URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/bg/policydocument/policydocument_0014

Country Description – Croatia

Statistical Presentation[37]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		5 (2,40)	3 (2,31)	3 (2,16)
		Exp. per student[38]	**Financial aid**	**Funding allocation[39]**
		37,76% (*) (38,0%)	3,1% (15,9%)	0 (56,2)
Performance	Education	**Internat. students**	**Transition[40]**	**Enrollment**
		0,5% (5,9%)	13,7% (*) (12,7%)	43,4% (36,1%)
		Graduates	**Employment**	
		22,9% (21,2%)	82,94% (*) (82,9%)	
	Research	**Top500 Uni.[41]**	**Top publications**	
		0,23 (0,34)	3,07 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		0 (2,08)	17,7 (46,8)	0 (0,77)

[37] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[38] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[39] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[40] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[41] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Economic Output	Knowledge employment	Labour productivity	GDP per capita
	27,44% (34,5%)	21 PPS€ (*) (31PPS€)	8700€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[42]

Overall	Medium
Graduation/employment	Medium
Research	Modest

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employment and graduation	Size	Productiv	Attractiv	Comp	Innov
→	↓	→	↑	↘	↑	→	→	→	→	→

Our assessment suggests that Croatia belongs to the middle group in our overall assessment. Croatian higher education is also in the middle group in terms of graduation and employment but has a more modest performance in terms of research.

Policy

Autonomy

Croatia had a higher level of autonomy than the European average in 2008. Universities can decide their own internal governance structure, implement programs (new degree programs being accredited by the governmental Agency for Science and Higher education), are free to enter international projects and cooperation and to decide about their enrollment numbers, admission criteria and recruitment. The Ministry of education remains responsible for the design of certain curricula, the financing of universities and students and for public salaries. Universities are free to own their own properties, borrow money on capital markets, build up reserves, carry over unspent financial resources and set fees for postgraduate courses.

The law of 1996 on higher education stipulates the freedom of institutions to determine their governance structures. Further attempts to have reforms were not successful. The 2003 Law on Science and Higher Education (Article 114) was judged unconstitutional by the Constitutional Court (Ruling no. U-I-1707/2006). The Government was not successful at passing further reforms regarding autonomy and financing in 2011.

[42] These indicators are based on standardized country statistics.

Funding

Croatia's public funding for universities was slightly lower than the European average in 2008. The Act of Science and Higher education of 2003 introduced a lump sum budget allocated to universities. The operating budget includes employee salaries and basic expense materials.

Performance-based indicators were not being used in 2008. The Government has made efforts to increase competitive funding for research. The National Council for Science allocates an annual budget for science, for three to five years, through a nominally competitive system called ZProjekti. The Croatian Science Foundation was not successful at gaining more competencies to allocate competitive funding in 2007, because of funding shortages.

The current government has the ambition to strengthen the role of the Croatian Science Foundation, which has completed the administration of the first competitive call for research projects in the Autumn of 2012. This is signaling a shift in the governance architecture of research funding, with a move away from an administration by the Ministry of science, education and sports. The impact of these changes is yet to be determined.

Allocation mechanisms for the funding of teaching at universities are tied to incremental budgets based on previous years. According to the OECD Thematic review of tertiary education, 'these mechanisms lack medium and long-term planning and strategic investment targets. Control is usually exercised at the central level and is based on inputs'[43]. There have been several suggestions to increase output based criteria. The World Bank is currently co-financing the introduction of three-year performance agreements with universities as a pilot project.

Investment in financial aid was much lower than the European average with 3.1% of the public budget for tertiary education going to grants, loans and scholarships as opposed to 15.9% on average in Europe in 2008. The State supports a quota of students (decided by the Ministry), and universities charge tuition fees. The number of self-financed students has increased since the mid-1990s. In the academic year 1993/1994, only 11.8% of students were paying tuition fees, this percentage increased to 60% by 2010/2011. The amount of tuition fees paid by undergraduate students grew over 50% since the mid-1990s, while fees for graduate studies increased even more substantially.
Some indications of a reversal of this trend have been visible since September 2012. The current government decided to fund tuition fees for students who acquire the required ECTS points. Croatian students also get financial help in the form of meal subsidies, health insurance, accommodation and parental tax relief. Family provided funding for 76% of Croatian students not living with their parents[44]. Around 10% of these students received funds from public sources, estimated at approximately €100 per month.

The newly introduced performance agreements with universities include social criteria, such as increasing enrolment of mature students, supporting students from low socio-economic backgrounds and students with disabilities, as well as increasing retention.

[43] OECD (2006) *Thematic review of tertiary education in Croatia*, Paris: OECD, p. 95.
[44] Eurostudent (2011) Social and Economic conditions of student life in Europe, national profile of Croatia, Eurostudent IV, p. 67.

University performance and outputs

Education

Croatia's education figures were above European average, bar in terms of international students. The percentage of incoming mobile student numbers was 0.5% as opposed to 5.9% for the European average in 2009. Employment three years or less after graduation was on a par with the European average and graduation rates 1.7 percentage points higher than the European average in 2010.

Research

Croatia had lower research indicators than the European average in most categories. 3% of its publications were in the most 10% cited publications, in comparison to the European average of 8.7%. Croatia had 17 co-publications per million inhabitants in 2008 (2.5 lower than the European average). Croatia had no record of European attractiveness, i.e. no ERC grant wins or Marie Curie incoming fellows. Increased investment into research is politically not likely given the current climate of austerity. According to the Central Bureau of Statistics, the economic crisis reduced R&D expenditure from 0.9% of GDP in 2008 to 0.73% in 2010.

Economic outcomes

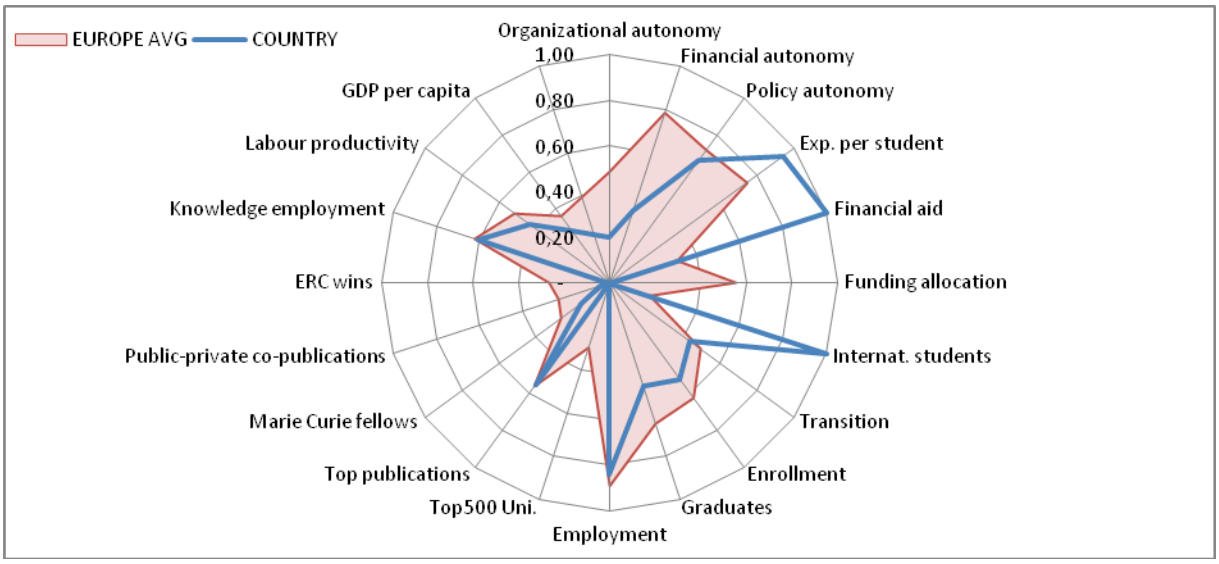
Croatia also had lower economic output figures than the European average, with a GDP per capita more than 2.5 times lower than the European average in 2011. The Croatian economy lost five places between 2009 and 2010 before remaining steady in 2011 according to the most recent Global competitiveness report.

Conclusion

In conclusion, Croatian universities have benefited from reforms over the past decades, for example having a comparatively high level of formal autonomy. The Croatian higher education system remains underfunded. Promoting performance-based funding based on educational quality and research competitiveness and enhancing international attractiveness could improve the outlook of Croatian higher education in order to support economic innovation.

Country Description – Cyprus

Statistical Presentation[45]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		1 (2,40)	1 (2,31)	2 (2,16)
		Exp. per student[46]	**Financial aid**	**Funding allocation[47]**
		47,79% (*) (38,0%)	50,9% (15,9%)	0 (56,2)
Performance	Education	**Internat. students**	**Transition[48]**	**Enrollment**
		31,78% (5,9%)	11,7% (*) (12,7%)	30,1% (36,1%)
		Graduates	**Employment**	
		15,68% (21,2%)	78,7% (82,9%)	
	Research	**Top500 Uni.[49]**	**Top publications**	
		0 (0,34)	8,63 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		1,27 (2,08)	8,3 (46,8)	0 (0,774)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[45] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources

[46] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[47] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008)..

[48] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[49] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	33,88% (34,5%)	26PPS€ (31, PPS€)	18100€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[50]

Overall	**Top**
Graduation/employment	**Modest**
Research	**Medium**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employmt and graduation	Size	Productiv	Attractiv	Comp	Innov
↓	↓	↓	↓	↑	↓	↑	→	→	→	→

Our assessment suggests that Cyprus belongs to the top group. This apparently high position may be contingent on conjectural investments rather than actual long-term performance of the higher education sector: Cyprus had a high funding per student (as a percentage of GDP per capita), as well as a generous financial aid scheme in 2008. Yet the research performance of Cyprus is not as high compared to other European countries.

Policy

Autonomy

Cyprus was below the European average in terms of autonomy in 2008. For example, faculties as well as other academic structures are decided by law. Universities get a line item budget, cannot keep surpluses and salaries are decided by an external authority. Policy autonomy was a bit higher than organizational and financial autonomy, because Universities can set selection procedures for postgraduate courses (admission procedures are co-regulated between the University and an external authority for undergraduate degrees). Private institutions enjoy higher levels of autonomy because they are being privately rather than publicly funded.

The moratorium on staffing across the state-funded sector has been implemented in 2011 by the Ministry of Finance as a response to the economic crisis and restricts the room for universities to grow. All public universities have committed to this moratorium, which entails a ban on staff recruitment until 2013, a reduction in salaries for both newly appointed personnel and existing personnel and no wage increase for 2 years. The moratorium on staffing has been relaxed to some extent due to the outcry from the universities.

[50] These indicators are based on standardized country statistics.

Funding

The Cypriot Government spent per student an estimated 47.8% of GDP per capita in 2008, Cyprus is among the top countries when it comes to higher education expenditure. Initial investments to cover the infrastructure costs of universities created over the past decades were high, undergraduate students do not pay fees, and the Cypriot Government spent 50.9% of the budget on tertiary education on loans grants and scholarships for students in 2008. The progression in public spending has been decreasing since 2007[51].

University performance and outputs

Education

Cyprus is open to international students for historical reasons. 31.78% of its student population was constituted by inward mobile students, compared to the European average of 5.9% in 2009. Cyprus also has room for improvement when comes to other education indicators. Its graduate employment rate was more than 4 points below the European average in 2009 and graduation rates around 6 percentage points lower than the European average in 2010. Enrollment rates as a percentage of the population aged 20 years old was also lower than the European average (but our research has shown that enrollment alone was proven not to positively affect the economic contribution of higher education).

The Government is attempting to push enrollment rates higher as underlined in the plan to increase the number of people attending Higher Education and to enhance equity and widen access to higher education[52]. Moreover, the Government encourages the admission of international students through the diversification of the language of instruction. A regulation has recently been introduced which states that all the programmes taught in Greek can also offered in English (the official languages of instruction traditionally have been Greek and Turkish). The decision of whether to create programmes in English or not belongs to the universities.

Research

Cyprus research indicators were more modest. Cyprus' percentage of scientific publications quoted in the 10% most cited worldwide was on a par with the European average in 2007. But Cyprus had for example no starting ERC grant wins per million inhabitants or universities in the top 500 according to the ARWU ranking in 2011.

The Government aimed to boost research expenditure through a research expenditure target. This target expressed in the Strategic Development Plan 2007-2013, was to reach the equivalent of 1% of GDP in public expenditure for research in 2010 with the ultimate goal of achieving the Lisbon Strategy goal of 3% at a later stage, relying on contribution of the private sector[53].

[51] Republic of Cyprus Ministry of Education and Culture (2011),*Interim report on the implementation of the strategic framework for European cooperation in education and training,* p. 6, URL: http://ec.europa.eu/education/lifelong-learning-policy/doc/natreport11/cyprus_en.pdf

[52] Republic of Cyprus Ministry of Education and Culture, idem.

[53] According to Eurypedia, Higher Education in Cyprus

Economic outcomes

Cyprus had lower economic output indicators than the European average in 2011. Its GDP per capita was around 18,000 euros (the European average being 22, 963 euros), which around 4,000 euros and labour productivity of 26 euros per hour worked, around 5 points below the European average[54]. 33.9% of employees worked in knowledge intensive activities (compared to 34.5% for the European average).

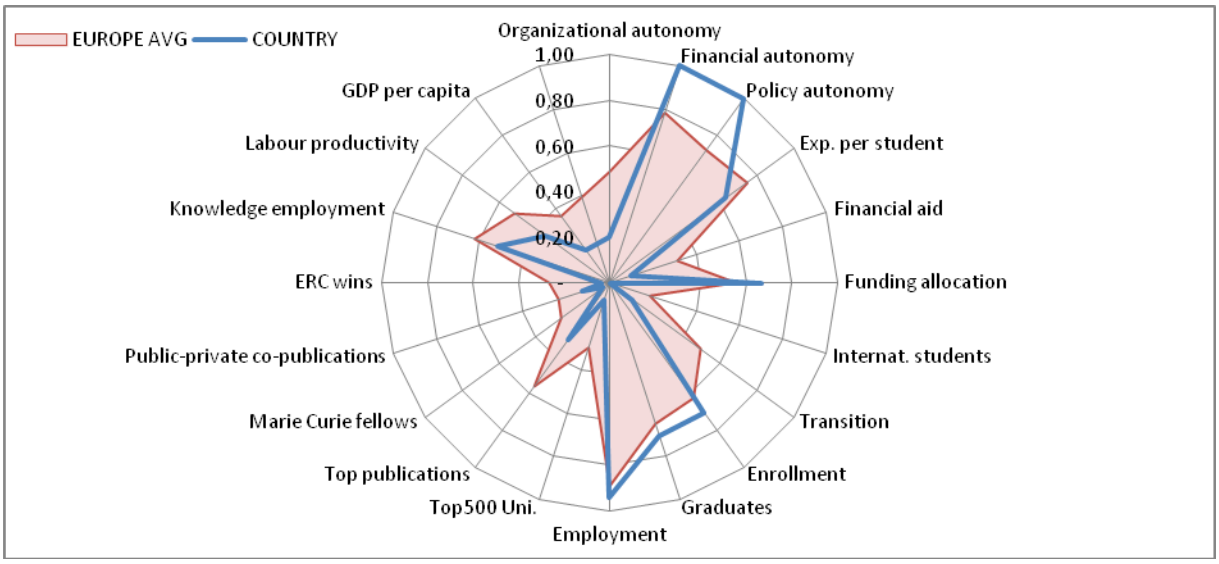
Conclusion

The reforms recently carried out are likely to result in a decrease in the material conditions of public universities. These reforms are expected to negatively affect the quality of education. The ratio of professors (and other staff) to students is going to decrease as the number of enrolled students is increasing and universities are limited in hiring new staff members. The Cypriot Government should relax these budget cuts in order to maintain the progress it had made in higher education over the past decades, where cohesion and structural funds could be used as compensation.

[54] Eurostat: GDP per hour worked in PPS€

Country Description – Czech Republic

Statistical Presentation[55]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		1 (2,40)	3 (2,31)	3 (2,16)
		Exp. per student[56]	**Financial aid**	**Funding allocation[57]**
		32,2% (38,0%)	4,9% (15,9%)	66,7 (56,2)
Performance	Education	**Internat. students**	**Transition[58]**	**Enrollment**
		0,0% (5,9%)	3,0% (12,7%)	40,7% (36,1%)
		Graduates	**Employment**	
		23,1% (21,2%)	88,0% (82,9%)	
	Research	**Top500 Uni.[59]**	**Top publications**	
		0,09 (0,34)	4,9 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		0,29 (2,08)	24,7 (45,4)	0,09 (0,73)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[55] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[56] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[57] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[58] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[59] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	29,2% (34,5%)	21 PPS€ (31 PPS€)	11600€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[60]

Overall	**Modest**
Graduation/employment	**Medium**
Research	**Modest**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employment and Graduation	Size	Productiv	Attractiv	Comp	Innov
→	↑	↓	↓	→	→	↑	↑	→	→	→

Our assessment suggests that the Czech Republic could improve. The Czech Republic belongs to the more modest group overall, as well as in terms of research and to the middle group in terms of graduation and graduate employment.

Policy

Autonomy

The Czech Republic was performing below the European average on organizational autonomy) in 2008. It was a bit higher than the European average in terms of financial autonomy and policy autonomy. Czech universities are entitled to internally decide on the allocation of funds, to borrow additional funds on the capital market, to build up reserves and to decide upon the spending of the operational grant[61]. But national law provides guidelines regarding academic structures.

Funding

The levels of government financing of higher education in the Czech Republic were somewhat lower than the European average. The Czech Government spent the equivalent of 32.2% of GDP per capita per student on tertiary in education (compared to a European average of 38 %) in 2008, and 4.9% of the public budget for tertiary education (compared to 15.9% on average in Europe) went to financial aid to students up to 2008. Funding has been allocated per capita since 1993 with differentiated levels according to disciplines.

[60] These indicators are based on standardized country statistics.

[61] Enders et al. (2010) *Progress in higher education reform across Europe: Funding Reform*. Directorate General for Education and Culture of the European Commission.

The use of Performance Based Funding (PBF) has increased since 2009. PBF allocation started at 9% of the total budget for the higher education system and eventually increased to 20% of the total budget being allocated. Performance-based indicators include the number of associate professors, research and development results, the income generated by universities and international student mobility[62].

The Czech Republic has a tuition-free system. Students usually receive support from their parents. Tuition fees are planned in the coming years[63]. This proposal is controversial and depends on the political momentum. 21% of a surveyed population would support the introduction of tuition fees[64]. If not accompanied by adequate compensatory measures to support students, this introduction might deteriorate affordability and accessibility of higher education. A proposal for higher education, published by the European Commission to comply with the Europe2020 Strategy, suggests a move towards an income-contingent loan based system with a low repayment threshold (graduates would repay if they earn a minimal income)[65]. This initiative might be impeded by cuts of over 10% to governmental funding introduced in recent years (2008 till 2012) as a response to the global economic crisis[66].

University performance and outputs

Education

The percentage of graduates over enrolled students and the employment rate were above European average. And tuition-free access to higher education for international students if enrolled in Czech language programmes.

The Czech Republic has increased its foreign students by 400% between 1997 and 2007 according to a report submitted to the Council of Europe[67]. Tuition-free enrollment for courses in Czech language programmes with the option of a one-year language course in Czech contributed to this increase. But the percentage of international students in comparison to the total student population remained below the European average in 2009 (at 0.02% against 5.9%).

The Czech Republic also had a comparatively low percentage of higher education students that accessed through a non-traditional route (3.0% compared to the European average of 12.7%) in 2008-2011.

Research

The Czech Republic had lower research indicators than the European average. For example, it had 4.9% of its scientific publications being in the top 10% most cited worldwide in 2007, compared to the European average of 8.7%.

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[62] Koucky, J. *From Incremental Funding to Quality & Performance Indicators: Reforms of Higher Education Funding in the Czech Republic*, Brussels: EUA

[63] Enders et al. (2010) *Progress in higher education reform across Europe: Funding Reform*. Directorate General for Education and Culture of the European Commission..

[64] Koucky, J. ídem.

[65] European Commission (2011) Investing into European Competitiveness*Contribution of the Czech Republic to Europe 2020 Strategy*
National Reform Programme of the Czech Republic http://ec.europa.eu/europe2020/pdf/nrp/nrp_czech_en.pdf

[66] European University Association (2012) *Public Funding Observatory*.

[67] Lebedeva, M. and Chepurina, M. (2011) *Geographical consolidation and international openness of the European Higher Education Area Report, background report prepared for the Council of Europe Parliamentary Assembly*, p. 6, URL: http://www.mgimo.ru/uploads/files/Report_EHEA_Lebedeva_Chepurina.pdf

Despite the aforementioned cuts in education expenditure, national research expenditure has been on the rise in recent years[68]. R&D expenditure for higher education has increased from 0.24% in 2008 to 0.4% in 2011[69]. The consultancy Technopolis carried out by in 2011 an evaluation of the current level and funding of research in the Czech Republic, offering tools and solutions for improving the quality of it and promoting innovation[70], which may lead to reforms.

Economic outcomes

Economic outcome indicators were below the average in 2011. 29.2% of employees were in knowledge intensive activities, compared to the European average of 34.5%, in 2009. 21 PPS€ were generated per hour worked, compared to 31 PPS€, in 2010. GDP per capita indicator was significantly below average (11600€ compared to 22963€) in 2011.

The Czech Republic is still in the convergence stage between Central / Eastern European countries and Western Europe. This leads to a comparatively low level of GDP per capita.

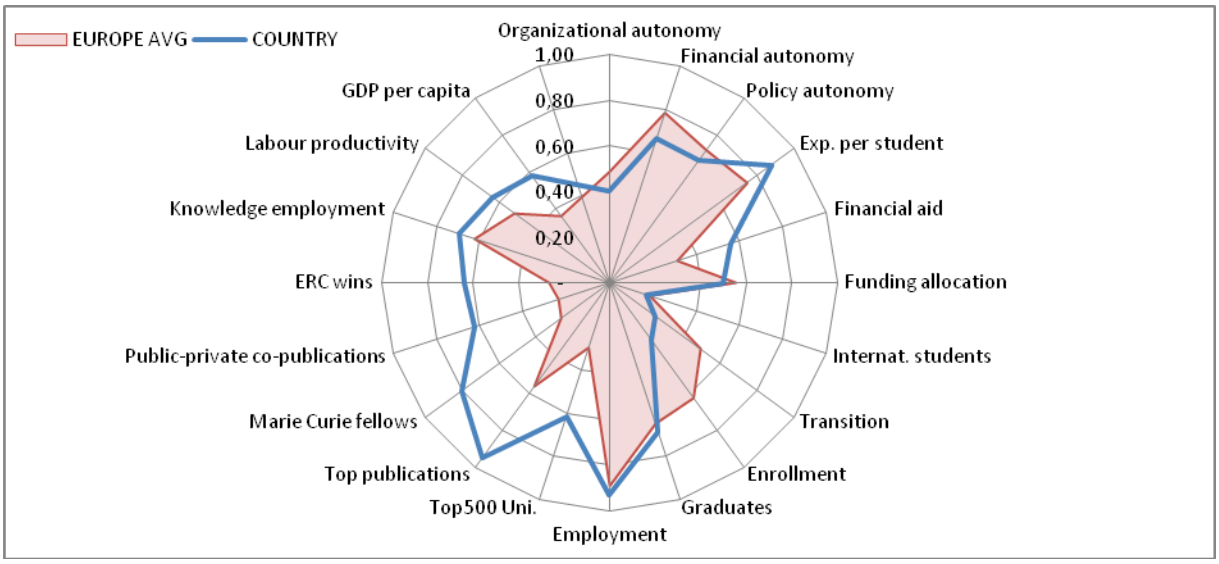
Conclusion

The overall assessment of the Czech Republic's university policies and performance is somewhat more modest than the European average. In addition to the evaluation of research, several initiatives have been taken to improve the higher education landscape in the Czech Republic, including plans to have a tuition-based system backed by a loan scheme, as well as incentives to attract international students. A further evaluation of these programs is necessary to understand if they are sufficient to compensate for the broad reductions in the public budget of universities.

[68] International Audit of Research, Development & Innovation in the Czech Republic Final Report (2011)
[69] Eurostat data.
[70] Technopolis (2012) The Quality of Research,Institutional Funding and Research Evaluation in the Czech Republic and abroad, URL: http://www.technopolis-group.com/resources/downloads/reports/1315_CzAudit_FinalRep_3-Quality_of_Research_EM.pdf

Country Description – Denmark

Statistical Presentation[71]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		2 (2,40)	2 (2,31)	2 (2,16)
		Exp. per student[72]	**Financial aid**	**Funding allocation[73]**
		44,7% (38,0%)	28,4% (15,9%)	50,0 (56,2)
Performance	Education	**Internat. students**	**Transition[74]**	**Enrollment**
		5,4% (5,9%)	6,0% (12.7%)	17,8% (36,1%)
		Graduates		**Employment**
		22,6% (21,2%)		86,7% (82,9%)
	Research	**Top500 Uni.[75]**		**Top publications**
		0,72 (0,34)		14,8 (8,7)
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		6,57 (2,08)	123,2 (45,4)	1,80 (0,73)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[71] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as source.

[72] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[73] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[74] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[75] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	39,2% (34,5%)	38 PPS€ (31 PPS€)	37600€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[76]

Overall	**Medium**
Graduation/employment	**Medium**
Research	**Top**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employment and graduation	Size	Productiv	Attractiv	Comp	Innov
↑	↑	↑	↑	↑					↑	↑

Our assessment suggests that the Danish higher education system is among the top performers in Europe. Denmark has a high research performance and is in the middle group in terms of graduation and graduate employment. A Governmental recognition of the role of higher education in innovation and an established tradition of public support toward higher education may have facilitated this position and illustrates the benefits of long-term policy consistency.

Policy

Autonomy

Yet, Danish universities had a slightly lower level of autonomy than the European average. The Danish legislation on autonomy dates back to the University Act (2003). Danish universities have some limitations in their remits. For example, they are now allowed to own their own premises. But they have some freedom are allowed to carry their own capital and to take out loans.

In 2012, the University Act had minor revisions. The participatory democracy of Danish universities established a University Council at some universities and stronger Academic Councils.

A significant change in the landscape was the plans for University mergers in 2007. Institutional accreditation is being considered (so far accreditation covered individual programs).

Funding

Danish universities received the equivalent of 44.7% of GDP per capita per student, in 2008, more than the European average of 38%. The Danish government has had a long-lasting commitment to keep spending on education more than the European average for both study programs and research.

[76] These indicators are based on standardized country statistics.

The role of performance indicators in funding allocation (through contracts and formulas) was slightly lower than the European average. The Danish Government allocates competitive and core funding strategically. New core funding is allocated based on formula composed of output indicators, using a co-financing rule for competitive funding.

Part of the competitive funding allocation requires co-funding for research. Co-funding calls for a strategically rational allocation between competitive funding and basic funding, and may favour reproduction rather than the emergence of new talents. Spending on R&D in higher education institutions has been increasing as Denmark is committed to reaching the Barcelona targets of 3% of GDP allocated to R&D.

The percentage of total public expenditure used for financial aid was also high in 2008. 28.4% of the public budget for tertiary education was spent on financial aid for students, a difference of around 13 percentage points in comparison to the European average. In 2009, the compensation rates in the taximeter system for the social sciences and humanities program were temporarily adjusted, allocating more funding to ensure broad access to higher education.

Danish funding figures are overall above European average and set to increase[77]. But the stringent economic climate has led to some uncertainty in terms of the funding of Danish universities. In August 2012, the Danish government proposed a continuation of the "globalization fund". This fund, allocated for three years, will increase the international visibility of Danish universities. The final confirmation in the Danish Parliament was still pending.

University performance and outputs

Education

Danish universities have a higher graduation level and graduate employment rates than the European average but a lower level of international openness and students from non-traditional backgrounds. Since 2007 Danish universities have been required to appoint joint committees with industry partners. These joint committees provide advice on how to develop courses to reflect the needs of the labour market / employers, making it easier for universities to perform well concerning graduate employment. Increasing graduation rates is high on the political agenda. The Thorning-Schmidt Government (2011) has declared that by 2020, 95 % of a cohort should obtain a secondary degree and 60% of a cohort should obtain a higher education degree (excluding vocational post-secondary education in the definition) and 25% of a cohort should obtain a degree from a research university - placing the target higher than for the Lisbon criteria.

Research

Denmark had a comparatively high research performance. Denmark had twice more universities than the European average in the top 500 according to the ARWU ranking when controlling for population size in 2011. Denmark had three times more Marie Curie fellows and twice more starting ERC grant

[77] European University Association (2012) 'Public funding observatory', URL: www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding/public-funding-observatory.aspx

winners than the European average respectively in 2009 and 2011. Some of the leading Danish universities include Aarhus University, Copenhagen University, The Technical University of Denmark, and The University of Southern Denmark. Danish attractiveness for EU-funded researcher and co-publications record could be attributed to the long-term focus on globalization, which has led to the creation of a suitable policy framework.

Economic outcomes

The economic outcomes of Denmark are above the European average. Danish workers produced 38 euros PPS per hour worked compared to 31 PPS€ for the European average in 2010, 39.2% of employees were in Knowledge Intensive activities in 2010 and Denmark's GDP per capita was 37,600 euros (compared to 22,963 euros) in 2011. The country is still suffering from the effects of this economic shortfall. Graduate unemployment increased from 3.4% in 2008 to 7.5 % in 2010 according to the OECD. But GDP growth stood at 2.32% in 2011 according to Eurostat.

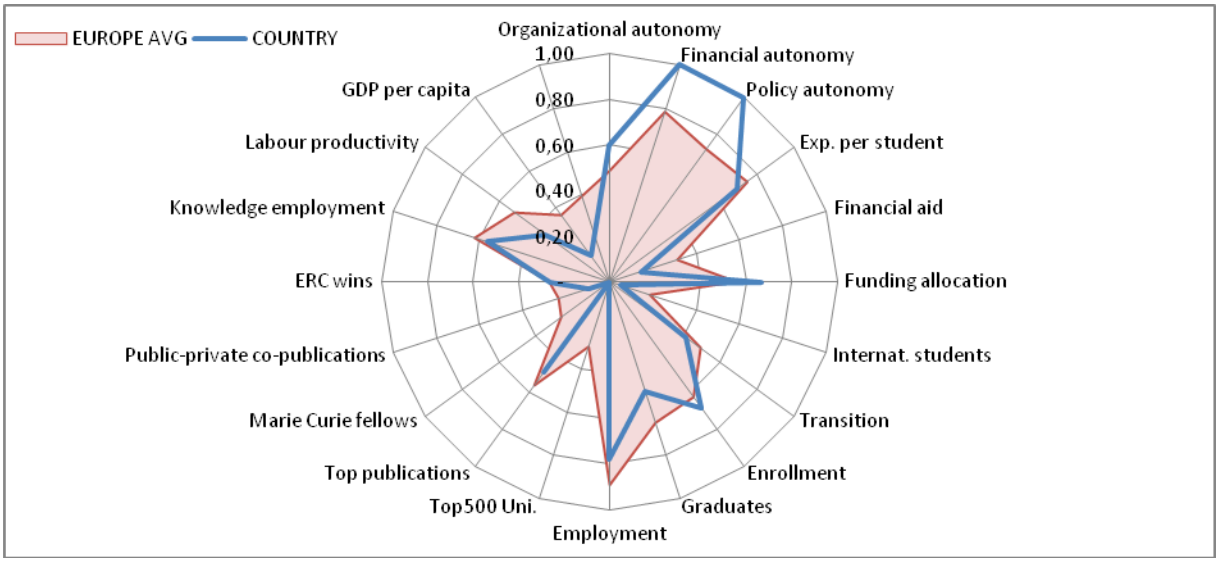
The Danish Globalization strategy may play a significant role in this economic recovery. This strategy, adopted in 2006, includes a major restructuring package for Danish research and innovation and stresses the relevance of higher education. This strategy is embedded in a strong level of political and administrative governmental coordination. For example, innovation and higher education are grouped in the Ministry of Science, Innovation and Higher Education. The government's National Reform Programme (2020 reforms), which also include higher education, is expected to further facilitate universities' possibilities to contribute to economic growth and innovation.

Conclusion

Denmark has strong higher education indicators, particularly in terms of research performance. A political recognition of the role of research and higher education, which transcribe in a high level of public investment in research and education as well as some autonomy (for example financial and managerial) allows universities to adapt to their environment.

Country Description – Estonia

Statistical Presentation[78]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		3 (2,40)	3 (2,31)	3 (2,16)
		Exp. per student[79]	**Financial aid**	**Funding allocation**[80]
		35,2% (38,0%)	7,4% (15,9%)	66,7 (56,2)
Performance	Education	**Internat. students**	**Transision**[81]	**Enrollment**
		1,6% (5,9%)	10,0% (12,7%)	39,5% (36,1%)
		Graduates	**Employment**	
		16,6% (21,2%)	72,9% (82,9%)	
	Research	**Top500 Uni.**[82]	**Top publications**	
		0,00 (0,34)	7,6 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		0,00 (2,08)	19,0 (45,4)	0,74 (0,73)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[78] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[2] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[3] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[4] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[5] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	31,8% (34,5%)	21 PPS€ (31 PPS€)	9100€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[83]

Overall	**Medium**
Graduation/employment	**Modest**
Research	**Medium**

Trends prediction

Policy					**Performance**				**Economic output**	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Graduation Employt	Size	Productiv	Attractiv	Comp	Innov
↑	↑	→	→	→	→	→	↑	↑	↑	↑

Our assessment suggests that Estonia belongs to the middle group in terms of overall scorebut has a more modest performance in terms of research and graduation as well as graduate employment.

Policy

Autonomy

Estonia was performing above the European average on all the three dimensions of university autonomy in 2008 (organizational autonomy: 3 compared to the European average of 2.40; financial autonomy: 3 compared to 2.31; policy autonomy: 3 compared to 2.16). Universities can decide on their own academic structures and create legal entities without constraints. The Standard of higher education act of 2002 provides some guidelines regarding the general requirements of higher education in Estonia[84].

University autonomy may change in the coming years. The President signed a bill reintroduced after amendments by the Parliament in May 2012. This law stipulates that the Government can review the conditions and procedures regarding public funding to universities [85].

Estonia is also undergoing a reform of its quality assurance system in order to improve educational quality[86] and the Government is planning an increasing differentiation as its new institutional accreditation system acknowledged the need for a differentiated system in 2011[87].

[83] These indicators are preliminary choices, which largely reflect the ones in the country profile sent in April 2012. The scores reported are country statistics standardized from 0 to 1.

[84] Eurypedia, Higher Education in Estonia

[85] For more information, see: http://www.vm.ee/?q=en/node/14527

[86] Directive of the Minister of Education and Research of 6 May 2009.

[87] National Reform Programme *ESTONIA 2020*(2011). URL: http://ec.europa.eu/europe2020/pdf/nrp/nrp_estonia_en.pdf

Funding

The levels of government funding of higher education in Estonia were below the European average until 2008. Public funding per student as a percentage of GDP per capita was estimated to be slightly lower than the European average (35.2% compared to 38% for the European average).

The current economic context has affected the funding of the higher education system in Estonia as in other European countries. Thus, an overall decrease of up to 10% of public budget has been registered in the 2008-2012 period[88].

Financial aid covered 7.4% of the public budget to tertiary education (compared to 15.9%) in 2008. The Government objective to fully finance higher education through state finance, as announced in 2011, could affect these percentages. Students would be required to complete their studies within a nominal period of time under this state financing scheme. Such a requirement would encourage students to fully devote themselves to the study. At the moment the vast majority of Estonian students divide their time between studies and work to be able to cover their living expenses[89].

University performance and outputs

Education

Estonia education indicators were below the European average on almost all the education indicators, with the exception of enrollment (which, as our study shows, does not relate to a higher relevance of higher education for economic innovation). 39.5% of the population aged 20 years old was in ISCED5-6, compared to the European average of 36.1% in 2010.

16.6% of enrolled students graduated in 2010 (compared to a European average of 21.2%). 72.9% of graduates were in employment three years of less after graduation (compared to the European average of 82.9%). International students represented 1.6% of the student population (compared to the European average of 5.9%), and 10% of students came from non-traditional backgrounds (compare to the European average of 12.7%).

The Government has issued proposals to increase internationalisation in its 2011 reform plan, which also aimed to improve the quality and efficiency of Estonian universities, and to motivate students for further studies in doctoral programmes[90].

Research

Estonia ranks below the European average in most of the research indicators. It had no recorded universities in the top 500 according to the 2011 ARWU ranking, no Marie Curie grant incoming grant holders, 7.6% of its scientific publications were within the 10% most cited worldwide (compared to 8.7 on average for Europe) and 19 co-publications per million inhabitants were published in respectively in 2007 and 2008 (compared to 45.5 for the European average.

[88] EUA's Public Funding Observatory (2012)

[89] Erawatch: the European Commission's information platform on European, national and regional research systems and policies(2012). URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/ee/country?section=ResearchPolicy&subsection=RecentResearchPolicyDev

[90] Erawatch, idem

The Government has outlined a strategy for 2007-2013 which targets research and innovation. The key research and innovation policy goals of the strategy include "updating the pool of knowledge". Another important target includes "increasing the international experience and through that the competitiveness of Estonian researchers as well as companies". The strategy prioritizes some key research areas (IT, biomedicine, and materials sciences). An implementation plan for 2010-2013 follows from this strategy. Improving research quality and boosting innovation is also one of the key priorities of Estonian strategy for competitiveness "Estonia 2020" (total expenditure on R&D is planned to be increased to 3% of GDP by 2020, of which public sector investments would cover more than half) [91].The Government also created a separate institution, the Estonian Research Council in 2012 to concentrate the funding of R&D and guarantee better functioning of financing systems[92].

Economic outcomes

Estonian economic indicators were somewhat below the European average. 31.8% of employees were in knowledge intensive industries compared to 34.5% in 2009. Labor productivity was below the European average (21 PPS€ per hour worked compared to 31 PPS€). GDP per capita was 9100€ compared to the European average of 22963€ in 2011. Estonia is still in the convergence stage between Central/ Eastern European countries and Western Europe. The Estonian Government has room to grow in terms of its innovation and competitiveness potential.

Conclusion

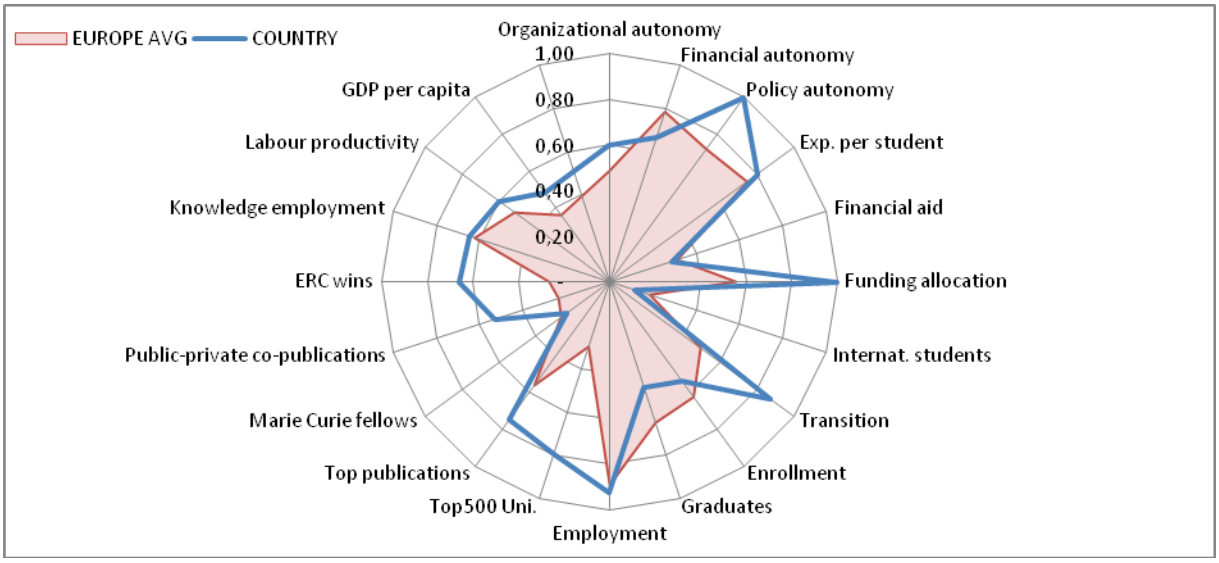
The Government undertook an ambitious restructuring of the higher education system in 2011. This might decrease university autonomy and lower enrollment rates, as students might no longer be able to work alongside their studies and therewith cover their living expenses. Various research reforms and initiatives introduced in recent years are expected to boost research performance and innovation.

[91] Erawatch: the European Commission's information platform on European, national and regional research systems and policies(2012). URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/ee/country?section=ResearchPolicy&subsection=RecentResearchPolicyDev ; National Reform Programme *ESTONIA 2020* (2011). URL: http://ec.europa.eu/europe2020/pdf/nrp/nrp_estonia_en.pdf

[92] Estonian Research Council (2012). URL: http://www2.archimedes.ee/teadus/index.php

Country Description – Finland

Statistical Presentation[93]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		3 (2,40)	2 (2,31)	3 (2,16)
		Exp. per student[94]	**Financial aid**	**Funding allocation**[95]
		40,75% (38,0%)	14,7% (15,9%)	100 (56,2)
Performance	Education	**Internat. students**	**Transition**[96]	**Enrollment**
		3,7% (5,9%)	21% (12,7%)	31,1% (36,1%)
		Graduates	**Employment**	
		16,07% (21,2%)	86,6% (82,9%)	
	Research	**Top500 Uni.**[97]	**Top publications**	
		0,93 (0,34)	11,65 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		1,89 (2,08)	104,7 (46,8)	1,86 (0,77)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[93] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[94] Total public expenditure per student in tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities. Source: OECD at a glance (2008); WorldDataBank (2006 and 2008)

[95] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[96] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Source: Eurostudent (2011)

[97] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	36,48% (34,5%)	36 PPS€ (31 PPS€)	31300€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[98]

Overall	**Medium**
Graduation/employment	**Medium**
Research	**Top**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employment and graduation	Size	Productiv	Attractiv	Comp	Innov
→	↑	↑	↑	↑	↑	→	↑	→	↑	↑

Our assessment indicates that Finland belongs to the middle group of countries in terms of higher education policy. The country's research performance is high. Its graduation rateswere lower than the European average.

Policy

Autonomy

Finland had higher levels of autonomy than the European average, bar in financial autonomy in 2008. Universities have been responsible for the recruitment of academic staff since 1998 and for quality assessment since 1997. Universities have also been able to establish companies and foundations since the implementation of the Universities act.

Funding

Finnish universities had a higher level of public funding per capita than the European average until 2008, with the equivalent of 40.8% of GDP per capita spent per student (compared to 38% on average in Europe). Finnish universities have acquired further opportunities to seek funding from private sources through the Universities act. A salary system based on workload and performance has been established in 2006 to provide financial incentives to staff.

Finland had a slightly lower percentage of expenditure in loans, grants and scholarships. (Student financial aid consists of a study grant of 298 euros a month for a student not living with his parents, a

[98] These indicators are based on standardized country statistics.

housing supplement and a government-guaranteed student loan[99]).Despite the current economic downturn, Finland has had a stable situation in terms of public funding to higher education[100].

University performance and outputs

Education

Finnish graduates had a comparatively high rate of employment three years or less after graduation, 86.9% of them being employed in 2010. But Graduation rates in Finland were lower than the European average, at 16.07 versus 21.2%. And The percentage of international students was also lower than the European average (at 3.7% versus 5.9%) in 2009.

Research

Finland has high research records, with higher top publications and ERC wins for starting grants on average than the European average. Finnish universities also encourage cooperation, having twice the level of public private co-publications than the European average.

Economic outcomes

Finland's economic outputs were above the European average. 36.48% of employees worked in knowledge intensive industries. 36.3 euros of GDP were generated per hour worked in 2009 and the GDP per capita was 31,300 euros of GDP per capita in 2011.

Conclusion

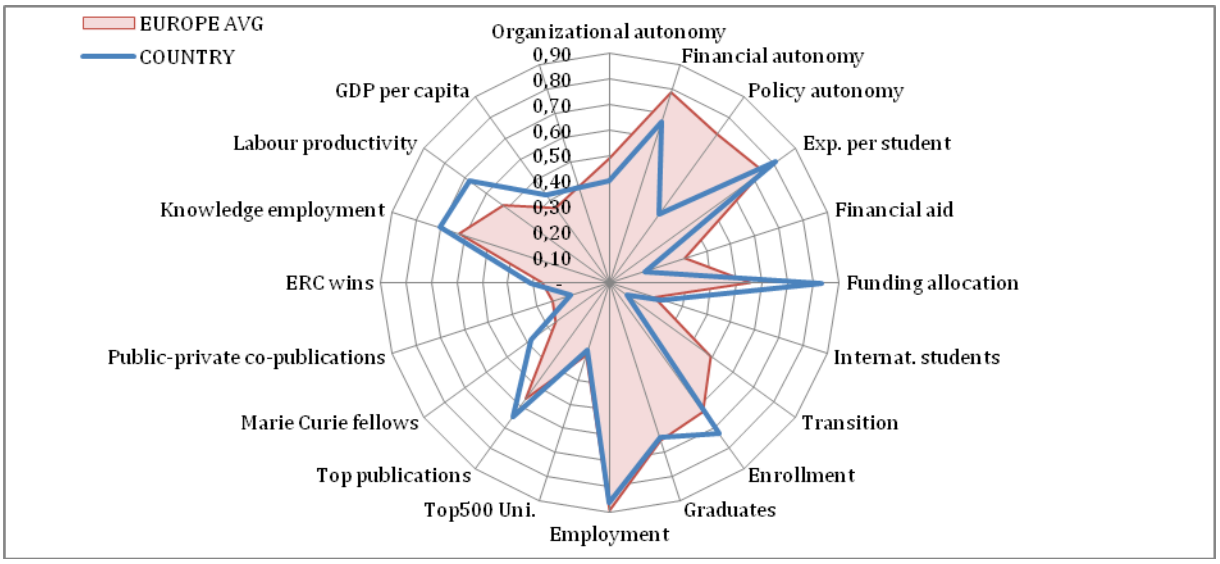
Finnish higher education institutions have comparatively high level of organizational and policy autonomy, are comparatively well funded, and have a high performance in research, and to be able to contribute to the socio-economic environment. For example the Government took measures to incentivise relationships with businesses; Finnish universities were able to create companies and encouraged business-university co-publications. But Finland had a lower level of international students and graduation rates than the European average, which reduces its overall position. Provided that the conditions of Finnish universities remain steady and that Finnish universities can stimulate international openness and graduation rates, Finnish university performance is expected to hold.

[99] Eurypedia (2011) Finland country report. URL: https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Finland:Higher_Education_Funding

[100] EUA's Public Funding Observatory (2012)

Country Description – France

Statistical Presentation[101]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		2 (2,40)	2 (2,31)	1 (2,16)
		Exp. per student[102]	**Financial aid**	**Funding allocation[103]**
		41,1% (38,0%)	7,4% (15,9%)	83,3 (56,2)
Performance	Education	**Internat. students**	**Transition[104]**	**Enrollment**
		6,9% (*) (5,9%)	2,0% (12,7%)	42,0% (36,1%)
		Graduates	**Employment**	
		21,0% (*) (21,2%)	80,7% (82,9%)	
	Research	**Top500 Uni.[105]**	**Top publications**	
		0,32 (0,34)	10,1 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		3,14 (2,08)	31,8 (45,4)	0,87 (0,73)
Economic Output		**Knowledge employment**	**Labour productivity**	**GDP per capita**
		39,5% (34,5%)	41 PPS€ (31 PPS€)	27600€ (29693€)

[101] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as source

[2] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[3] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[4] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[5] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

(*) Imputed value / ( ) European average

Overview of position in groups[106]

Overall	**Modest**
Graduation/employment	**Medium**
Research	**Medium**

Trends

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employt	Size	Productiv	Attractiv	Comp	Innov
↑	↑	→	→	→	↓	→	↓	→	↓	→

Our assessment suggests that France belongs to the more modest group. The French higher education system is in the middle group in terms of research, graduation and employment. The slow move away from governmental steering affects the performance of universities, leading to a lower assessment and innovation level than one would expect given France's GDP per capita.

Policy Autonomy

France had less autonomy than the European average in 2008, an issue that the implementation of the law on the freedom and responsibilities of universities of the 11th of August 2008 aimed to tackle, by for example allowing universities to set foundations. The implementation of this law was still subject to Government steering, the Government rewarding willing universities with an additional budget of 35 million euros. Changes in practices (rather than in rules) may take longer given internal resistance within universities. Moreover, the recently (June 2012) appointed Minister for Higher education and Research, Genevieve Fiorraso, seems to disagree with the incentive mechanism to implement autonomy. It is unclear whether this also pertains to the autonomy drive as a whole or to other aspects of the 2008 Reform Bill.

Funding

Most funding being public, the French Government allocated the equivalent of 41.13% of GDP per capita per student in 2008, above the European average, in contrast to a commonly held perception in France. - Central control may have caused a considerable inefficiency in the allocation of resources -. The public

[106] These indicators are based on standardized country statistics.

budget for research and innovation has increased by nominally 15% between 2007 and 2010 (against 10% from 2002 to 2006), seeing as higher education was a priority of the previous Government. The newly appointed Minister aims to maintain funds for education and research, while concentrating investments on STEM sectors[107]. Incentives have been part of the Government funding for education and research over the last few years, nation-wide criteria having included faculty publications since 2009 for example.

The percentage of total public expenditure used for financial aid was twice lower than the European average because of a tradition of free access to education (students only pay administrative costs decided by the Government[108]). But around a third of universities charge complementary fees according to student trade union UNEF, which questioned the legality of this practice[109].

The government increased its financial aid budget in the period 2006-2010 to 24% of additional students and made publicly guaranteed commercial student loans more accessible. A few institutions have also set up initiatives to attract more students from ethnic minorities at the level of bachelor. The French government has recognized the need for additional schemes to tackle inequalities of opportunities. But measures remain or a relatively narrow scale, the take-up rate for loans is lower than Government forecasts[110].

University performance and outputs

Education

Despite higher enrollment rates than the European average, French students have a slightly lower proportion to graduate than the European average. This suggests high failure rates are high at certain levels of university or a comparatively long length of study prior graduation. Graduate employment was also lower than the European average. 80.7% of graduates had a job three years or less after graduation in 2009. The reforms of the levels of qualifications are still being implemented to increase graduate employment. These reforms include a diversification and professionalization of academic courses and bridges between short-term studies and longer ones shortening the time of studies. The implementation of these reforms across the nation has however appeared uneven[111].

Research

France's research indicators were slightly higher than the European average on average. 10.1% of scientific publications within the top 10% worldwide in terms of citation in 2007. But France had a lower level of universities in the top 500 ARWU ranking proportionally to the population (0.32 compared to 0.34 on average in Europe).

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[107] Discours de Genevieve Fioraso lors du lancement des assises de l enseignement superieur et de la recherche.
[108] Article 48 of law n°51598, 24th of May 1951.
[109] UNEF (2010) *Frais d'inscription illégaux, le palmarès 2010 des universités hors la loi*. URL : http://www.france-info.com/IMG/pdf/5/5/b/Dossier_FII_2010_palmares.pdf. Higher education institutions (*écoles*), such as business schools as well as other private or more independent institutions also typically set much higher fees, ranging from 5,000 to 10,000 euros per year for business schools and 15,000 euros per year for engineering schools
11 Oséo (2008) *Garantie de prêts étudiants', présentation to the Ministère de l'Enseignement Supérieur et de la Recherche.*
[111] Musselin, C. and Mignot-Gerard, S. (2005) *Chacun cherche son LMD,* Paris : enquête CSO/ESEN.

This research performance is expected to increase with the previous Governments' investments in quality higher education research. Recent initiatives include "investments of excellence", "research units of excellence" and poles of higher education and research. The latter (the scaling up of already large institutions) is implemented unevenly over the country, and may be impinged by bureaucratic regulations. It would be important to monitor and evaluate his development. The impact of these reforms is yet unclear. Incentives measures were also set up to encourage researchers, through the National Research Agency (*Agence Nationale de la Recherche*), created in 2007. However, these incentives remain comparatively weak because of the tendency of reproduction (rather than innovation) emerging from the peerage system, and accountability is not well developed.

Economic outcomes

French economic output indicators are above the European average, with 39.5% of employees in knowledge intensive activities and 41 euros generated her hour worked, and a GDP per capita of 27600 euros.

But France's economy has been declining. France has had a decrease of 40% in its global market share and had an uninterrupted trade deficit, which reached 70 billions of Euros in 2011.

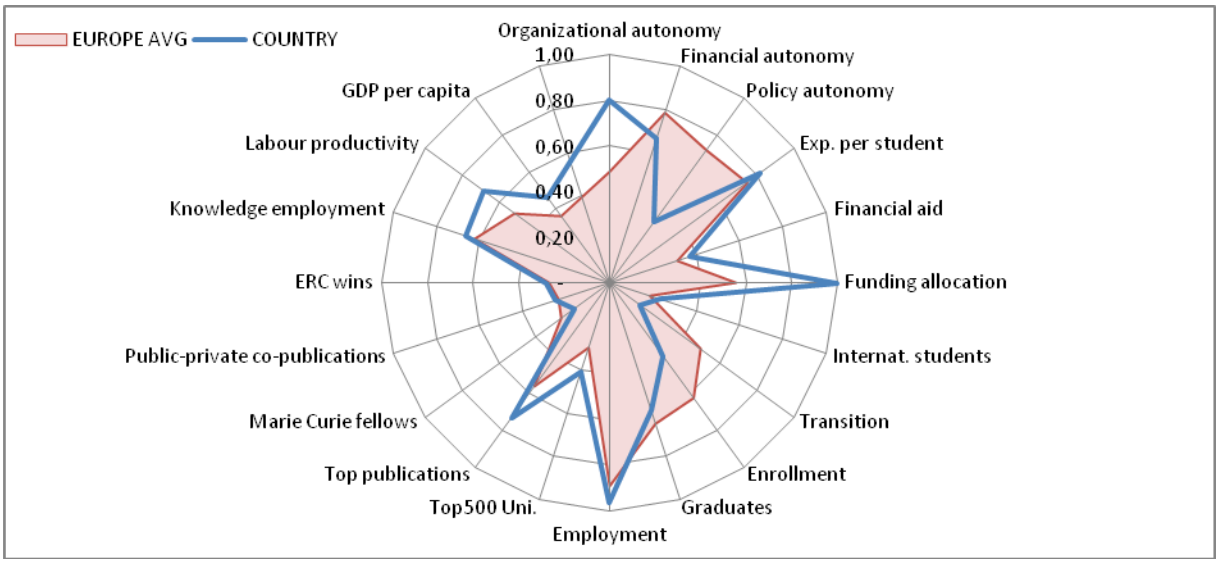
The Ministry of Higher education and Research has drafted a strategy for Research and Innovation in 2009 which develops the innovation capacity of higher education institutions – the Ministry approved incubators in close proximity to research poles, or encouraged business investment in research through tax relief for example.

Conclusion

The policy measures taken in the period 2008-2012 should positively impact the contribution of higher education to the economic performance of France. Whether the impact will be sizeable and enough to reverse the trend towards less competitiveness d of the past five years epends on the continuity of this policy thrust and the willingness of the new (2012) Government to support this direction.

Country Description – Germany

Statistical Presentation[112]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		4 (2,40)	2 (2,31)	1 (2,16)
		Exp. per student[113]	**Financial aid**	**Funding allocation[114]**
		41,4% (38,0%)	18,9% (15,9%)	100,0 (56,2)
Performance	Education	**Internat. students**	**Transition[115]**	**Enrollment**
		7,4% (5,9%)	4,0% (12,7%)	23,1% (36,1%)
		Graduates	**Employment**	
		19,3% (21,2%)	90,0% (82,9%)	
	Research	**Top500 Uni.[116]**	**Top publications**	
		0,48 (0,34)	11,4 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		1,57 (2,08)	49,5 (45,4)	0,78 (0,73)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[112] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.
[113] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).
[114] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).
[115] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).
[116] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	37,3% (34,5%)	41 PPS€ (31 PPS€)	30000€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[117]

Overall	**Medium**
Graduation/employment	**Medium**
Research	**Medium**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employment and Graduation	Size	Productiv	Attractiv	Comp	Innov
→	↑	↑	→							

Our assessment suggests that Germany belongs to the higher bound of the middle group. Germany's performance in research, graduation and graduate employment is also in the middle group. Higher education is largely a state competency in Germany and hence there may be some variations across states (*Länder*).

Policy

Autonomy

Organizational autonomy was above average (4 compared to 2.40) in 2008 according to CHEPS. Financial and policy autonomy was somewhat below the European average (with respectively 2 compared to 2.31 and 1 compared to 2.16 respectively).

New bachelor and master courses are regulated by accreditation agencies (which are foundations under public law) [118].

The federal nature of the higher education system in Germany implies that the indicators for specific regions (i.e. *Länder's)* may differ (either positively or negatively) from the overall country's indicators. The presented scores only reflect a comparative picture at a general national level and ignore possible further federal differences. For example, tuition fees are a state competency. The introduction of fees

[117] These indicators are based on standardized country statistics.

[118] EUA university autonomy URL: http://www.university-autonomy.eu/countries/north-rhine-westphalia/

followed a decision of the Constitutional Court in 2005. As of 2012, two *Länder's* continue charging fees, namely, Bavaria and Lower Saxony.

Funding

German universities received the equivalent per student of 41.4% of GDP per capita in 2008, higher than the European average of 38.0%. 18.9% of the total budget for tertiary education went to financial aid, a higher proportion than the European average of 15.9% in 2008. State governments have implemented the use of performance-based funding extensively.

Public funding has increased recent years following joint initiatives between the German federal government and the Länder.

The Higher Education Pact introduced in 2007 secures a solid financial basis for an expansion of student numbers until 2015, as a response to the increase in student numbers. Secondly, the German research council DFG introduced a full-costing model which includes overhead funding for grants in research[119].

A national scholarship programme, the "Deutschlandstipendium", has been introduced in 2011. This programme increases the proportion of scholarship holders amongst outstanding students. The programme relies on a partnership between public and private donors. This system of co-funding has been growing in popularity in most OECD countries but had not been given substantial attention in Germany before the aforementioned project[120].

Public funding increased overall in the 2008-2012 period[121], an increase mostly concentrated on short-term and program funding rather than basic funding.

University performance and outputs

Education

Graduate employment and the percentage of international students were higher than the European average. 90% of German graduates were employment up to three years after graduation (compared to a European average of 82.9%) in 2009. And 7.4% of students were international in 2009 (compared to the European average of 5.9%).

But the percentage of graduates compared to the enrolled population was lower than the European average, namely 19.3% (the European average being 21.2% in 2010). The percentage of enrolled students compared to the population aged 20 was also lower than the European average (23.1% compared to 36.1%) similarly to the percentage of students accessing higher education through non-traditional routes (4.0% compared to 12.7%) in 2008-2011.

The German government stresses international openness. Various scholarship programmes aim to Germany's attractiveness for foreign undergraduate and postgraduate students[122].

[119] *Research in Germany (*central information platform of the initiative to "Promote Innovation and Research in Germany" maintained by the Federal Ministry of Education and Research, BMBF). URL: http://www.research-in-germany.de/research-landscape/r-d-policy-framework/60122/higher-education-pact.html

[120] *Research in Germany (*central information platform of the initiative to "Promote Innovation and Research in Germany" maintained by the Federal Ministry of Education and Research, BMBF). URL: http://www.hhl.de/en/service/student-support/scholarships/national-scholarship-program/

[121] EUA's Public Funding Observatory (2012)

Research

German indicators were above the European average on research, with the exception of the Marie Curie grant holders where the country was slightly below the European average, with 1.57 incoming grant holders per million inhabitants compared to 2.08 in 2009.

The government supports research through various projects. The Excellence Initiative launched in 2006 focuses on strengthening cutting-edge research and making German science and research more visible in the scientific community[123]. The *Initiative to Promote Innovation and Research in Germany* launched in 2006 aims to strengthen and expand R&D collaboration between Germany and international partners[124]. The Alexander von Humboldt Professorship enables outstanding researchers to undertake long-term research stays at German universities. More targeted initiatives such as the Sofia Kovalevskaya Prize of the Humboldt foundation support up-and-coming young researchers.

Economic outcomes

All the economic outcomes indicators were over the European average in 2011. 37.3% of employees were in knowledge intensive activities (compared to 34.5% for Europe on average). 41 PPS€ were generated per hour worked (compared to 31 PPS€ for Europe on average) in 2010. And GDP per capita in Germany was 30000€ compared to 22963€ for Europe on average in 2011.

Conclusion

The overall score of Germany's university policies, performance and economic outlook is above the European average. Many initiatives have been undertaken (and rather successfully implemented) to further increase funding as well as improve research and promote innovation. But there is still a need for reforms, which would enhance the financial and policy autonomy of universities, with an emphasis on the latter depending on the situation of each state.

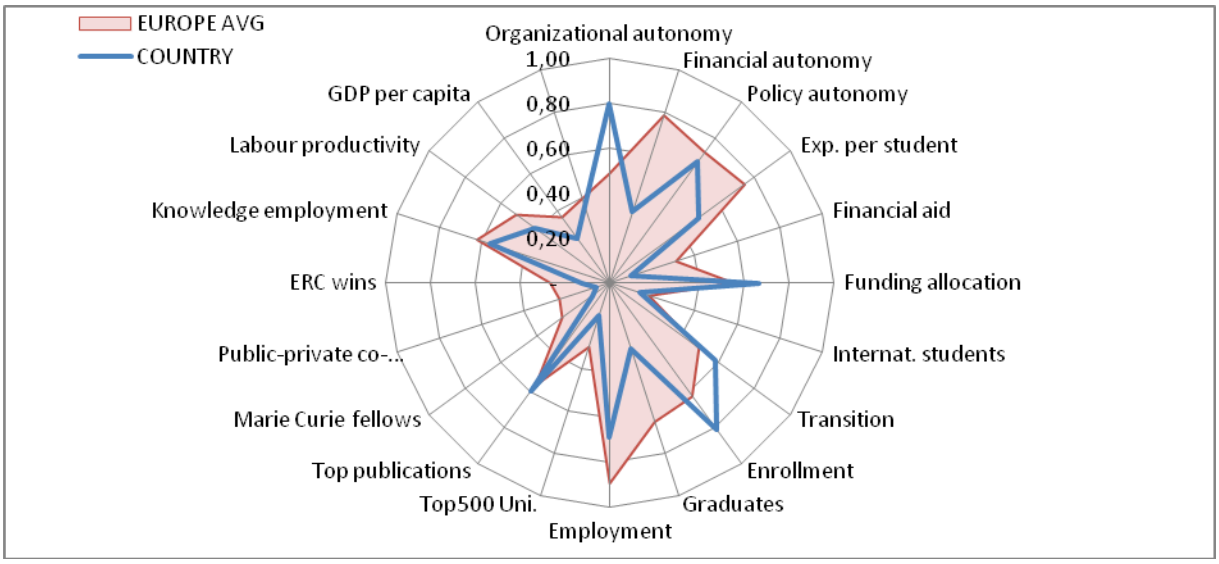
[122] *Research in Germany (*central information platform of the initiative to "Promote Innovation and Research in Germany" nd is maintained by the Federal Ministry of Education and Research, BMBF). URL: http://www.research-in-germany.de/main/research-landscape/r-d-policy-framework/60128/internationalisation-strategy.html

[123] Excellence Initiative. URL: http://www.excellence-initiative.com/excellence-initiative

[124] *Research in Germany (*central information platform of the initiative to "Promote Innovation and Research in Germany" maintained by the Federal Ministry of Education and Research, BMBF). URL:http://www.research-in-germany.de/meta/45660/about-us.html

Country Description – Greece

Statistical Presentation[125]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		4 (2,40)	1 (2,31)	2 (2,16)
		Exp. per student[126]	**Financial aid**	**Funding allocation[127]**
		25,06% (38,0%)	4,98% (*) (15,9%)	66,66 (56,2)
Performance	Education	**Internat. students**	**Transition[128]**	**Enrollment**
		4,6% (*) (5,9%)	14,3 % (*) (12,7%)	46,6% (36,1%)
		Graduates	**Employment**	
		10,14% (21,2%)	64,7% (82,9%)	
	Research	**Top500 Uni.[129]**	**Top publications**	
		0,18 (0,34)	9,32 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		0,8 (2,08)	12,5 (46,8)	0,35 (0,77)
Economic Output		**Knowledge employment**	**Labour productivity**	**GDP per capita**
		31,63% (34,5%)	25 PPS€ (31, PPS€)	15900€ (22963€)

(*) Imputed value / ( ) European average

[125] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources

[126] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[127] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[128] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[129] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Overview of position in groups[130]

Overall	**Modest**
Graduation/employment	**Modest**
Research	**Medium**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employt	Size	Productiv	Attractiv	Comp	Innov
↑		↓	↑	↑						

Our assessment suggests that Greece belongs to the more modest group. Graduate employment and graduation rates are to be particularly improved.

Policy

Autonomy

The financial and policy autonomy of Greek higher education institutions was lower than the European average according to CHEPS (2008). In August 2011, the Parliament adopted a Framework act for higher education (4009/11), supported by the two major political parties. This law aimed to give universities greater autonomy but at the same time required more accountability.

The law changes the nomination procedures of rectors. Rectors become appointed by a governing board following an international call. Until 2011, Rectors were elected institutionally, a nomination procedure criticized for being unethical and a source of corruption. This reform also abolishes academic asylum, which has been used by extremists to avoid arrests, although universities remain protected by the notion of academic freedom.

Cooperation problems impede on the implementation of the aforementioned law. University rectors, particularly those elected before the new law was introduced, are reticent to implement this reform. Student bodies are also reacting since student participation has been significantly reduced in this new governance system.

[130] These indicators are based on standardized country statistics.

The law (4076/12) of August 2012 aims to gather the support of rectors, by introducing some critical changes to this aforementioned law (4009/11) regarding the election procedure of university councils and rectors.

Funding

Public expenditure per student was equivalent to 25.06% of GDP per capita (more than 12 points below the European average) and the expenditure level on financial aid represents 4.98% of the total public expenditure on tertiary education (more than 10 points below the average of the European countries) in 2008.

The economic crisis has undeniably affected the funding for education. The education budget has been reduced in order to meet deficit limits following laws 3833/2010[131] and 3845/2010[132]. The reduction is estimated at more than 10% compared to 2008[133]. These cuts have led to various changes affecting staff and students, including plans for mergers or closures, and charging for study books which were previously free. The Government still operates a tuition-free system, since free university access is a constitutional provision[134].

University performance and outputs

Education

Enrollment rates of the population aged twenty are 10 points were high, with 46.6% of the population aged 20 registered in a course corresponding to ISCED levels 5-6 in 2010. The combination of high enrollment and low graduation rates of 10/1% (more than 10 points below the European average) cast doubts regarding the quality of the educational provision in Greece.

Greece also had one of the lowest graduate employment rates. 64.7% of graduates were employed up to three years after leaving university (18 points below the European average) in 2009.

Law 4009/11 will distribute funding to the universities according to a number of factors that will be taken into account, including the employability of the graduates.

Research

Almost all the research indicators were below the average bar for the percentage of scientific publications among the most 10% cited worldwide in 2007 (9.3% compared to 8.7%). Greek universities have a low attractiveness level, ability to win grants on European-scale and form collaborations. Greece attracts 0.8 Marie Curie researchers as opposed to 1.8 for the European on average per million inhabitants. It had 0.35 ERC starting grant wins per million inhabitants in 2011 (while the European average is around 0.77), and 12.5 public private co-publications of 12.5 in 2008, lower than the European average of almost 47.

[131] 'Protection of national economy – Emergency measures to deal with fiscal crisis'

[132] 'Measures for the application of Greek economy support mechanism by Euro zone member states and the International Monetary Fund'. Also see the Ministerial Decision no. 2/4431/25-1-10 of the Finance Minister.

[133] Eurydice: Greece. URL: https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Greece:Redirect

[134] Article 16 of Greek Constitution

A new method of submitting and evaluating research proposals was introduced in 2010. All proposals are submitted electronically and in English in order to stimulate international level research[135]. International experts assess the proposals. This change is fully implemented despite strong opposition. This reform favors the concentration of funding to highly research active institutions. The impact of these policies should be evaluated after a number of years, upon completion of the research projects supported under this selection regime.

Economic outcomes

Greece had lower economic indicators than the European average. Greece has a low labor productivity of 25 (more than 6 points below the European average), a percentage of employees 3 points below the European average in 2010. Greece had a GDP per capita of around 15,900 €, below the 22,963€ of the European average in 2011.

The previously mentioned law 2009/11 attempts to match the supply of graduates to the labor market by including the employability of graduates as an indicator to allocate public funding.

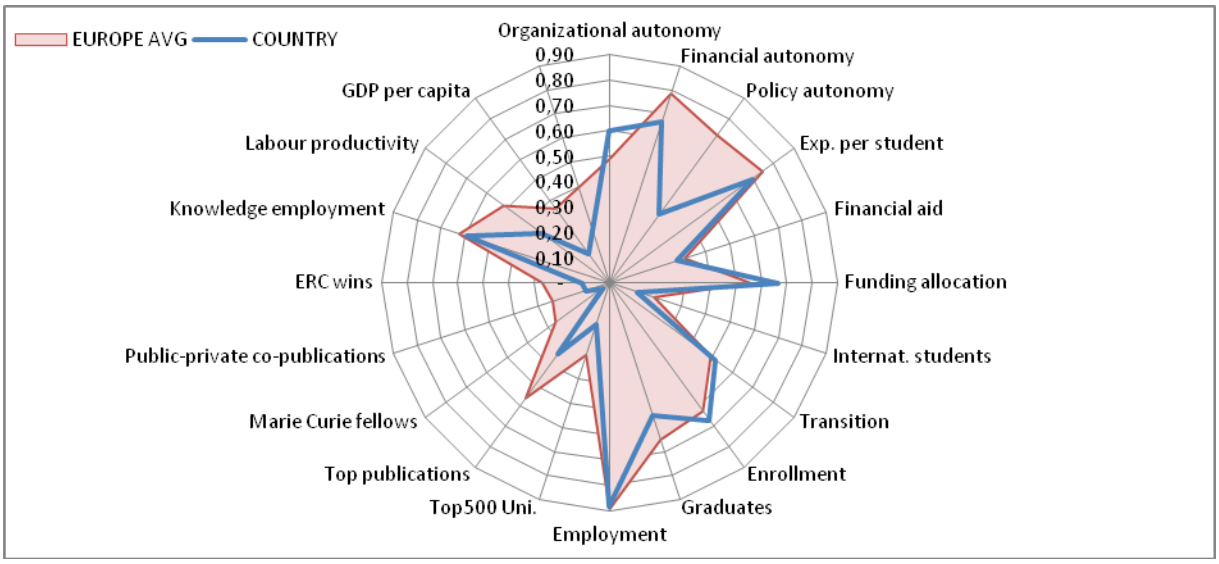
Conclusions

Greek higher education has undergone several reform programs in the last years. Notwithstanding the cuts in funding, policy changes covered the nomination of Rectors, in the selection of research projects, and performance-based indicators for public funding, which illustrates a Governmental willingness to make structural adjustments to higher education in a context of conjectural constraints.

[135] 'Athens, April 2011 - Hellenic National Reform Programme 2011-2014'.
URL:http://ec.europa.eu/europe2020/pdf/nrp/nrp_greece_en.pdf

Country Description – Hungary

Statistical Presentation[136]



Policy	**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**	
	3 (2,40)	2 (2,31)	1 (2,16)	
	Exp. per student[137]	**Financial aid**	**Funding allocation[138]**	
	35,4% (38,0%)	14,3% (15,9%)	66,7 (56,2)	
Performance – Education	**Internat. students**	**Transition[139]**	**Enrollment**	
	3,7% (5,9%)	13,1% (*) (12,7%)	38,5% (36,1%)	
	Graduates	**Employment**		
	18,1% (21,2%)	82,3% (82,9%)		
Performance – Research	**Top500 Uni.[140]**	**Top publications**		
	0,20 (0,34)	5,4 (8,7)		
	Marie Curie fellows	**Public-private co-publications**	**ERC wins**	
	0,30 (2,08)	19,6 (45,4)	0,30 (0,73)	
Economic Output	**Knowledge employment**	**Labour productivity**	**GDP per capita**	
	33,5% (34,5%)	20 PPS€ (31 PPS€)	9000€ (22963€)	

(*) Imputed value / ( ) European average

[136] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the EU average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[137] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[138] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

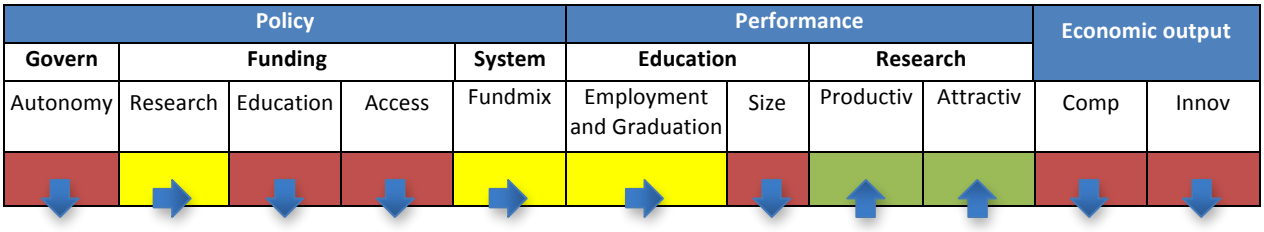
[139] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[140] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Overview of position in groups[141]

Overall	**Medium**
Graduation/employment	**Medium**
Research	**Medium**

Trends prediction



Our assessment suggests that Hungary is in the lower middle group. Hungary belongs to a more modest grouping in research rather than education (graduation and employment). Recent reforms are expected to affect the higher education system.

Policy

Autonomy

Hungarian universities had lower level of policy and financial autonomy than the European average in 2008. Since then, the Higher Education Law introduced in 2011 has led to various changes. These changes have reduced the three dimensions of university autonomy. For instance, the Treasury can stop or cancel any budgetary decision. Universities cannot sell properties anymore without permission, and student enrollment is centralized[142]. These laws also gradually seek to implement a new structure to higher education institutions until 2015.

Funding

Hungarian universities received the equivalent per student of 35.4% of GDP per capita in 2008, compared to the European average 38.0%. Financial aid to students took 14.3% of the public budget for tertiary education compared to the European average of 15.9% in 2008.

[141] These indicators are based on standardized country statistics.

[142] Eurofound (the European Foundation for the Improvement of Living and Working Conditions, a European Union body). URL: http://www.eurofound.europa.eu/eiro/2012/02/articles/hu1202021i.htm; METRIS (Monitoring European Trends in Social Sciences and Humanities, a European Commission initiative).
URL: http://www.metrisnet.eu/metris/index.cfm/news/viewById/1061 ;Heinrich Böll Foundation.
URL: http://www.boell.de/worldwide/europenorthamerica/europe-north-america-hungary-the-new-education-act-15394.html

The overall public funding of higher education had decreased by 15% in 2012 (from 40% to 25%)[143]. The number of state-funded places between 2011 and 2013 was reduced by 40% following the aforementioned law of 2011. Legal and economics fields were the most affected, in compliance with the Government's willingness to stress STEM disciplines[144]. A second student loan scheme with higher interest rates coexists with the previous student loan scheme[145].

University performance and outputs

Education

Hungary's education indicators were below the European average, bar for enrolled students (which do not contribute to the economic output of a higher education system as our report showed). For example, 3.7% of students were international, below the European average of 5.9% in 2009. Both the percentage of graduates and the employment rate were below the European average (respectively 18.1% compared to 21.2%in 2010 and 82.3% compared to 82.9% in 2009). According to the Government, steering state funded disciplines toward certain disciplines will adapt academic outputs to the requirements of the labour market[146], which might result in increased employment rates.

The Government also introduced student contracts (as a part of the aforementioned reform in 2011) to prevent brain drain. Graduates who do not remain residents of Hungary for at least a ten-year period after finishing higher education have to repay the costs of their education. This measure also aims to increase graduation rates, students in state-funded programmes being obliged to sign contracts stating they will receive their degree within a fix period of time.

These measures contributed to decreased rates of enrolment: student applications for 2012 dropped by a third (109,000 against 132,000 in 2011) and was anticipated to also cause an outflow of young Hungarians to foreign universities[147].

The Constitutional Court has judged student contracts unconstitutional in June 2012, given that they directly affect the right to a free choice of occupation and the right of free mobility of workers[148].

Research

Hungary's research indicators were below the European average (0.20 universities in the top 500 proportionally to the population of the country compared to 0.34 for the European average; 5.4% of scientific publications within 10% most cited to 8.7 on average in Europe; 0.30 Marie Curie grant holders per million inhabitants, compared to 2.08; 19.6 public private co-publications, compared to 45.4 on average in Europe and 0.3 ERC wins per million inhabitants compared to 0.73 on average in Europe).

[143] METRIS (Monitoring European Trends in Social Sciences and Humanities, a European Commission initiative). URL: http://www.metrisnet.eu/metris/index.cfm/news/viewById/1061

[144] Eurofound (the European Foundation for the Improvement of Living and Working Conditions, a European Union body). URL: http://www.eurofound.europa.eu/eiro/2012/02/articles/hu1202021i.htm

[145] For more information, see : http://www.diakhitel.hu/index.php/en/home/111-sajtoszoba2/5505-student-loan2-2-shall-be-paid-by-the-students-from-the-9-interest-rate

[146] Heinrich Böll Foundation. URL: http://www.boell.de/worldwide/europenorthamerica/europe-north-america-hungary-the-new-education-act-15394.html

[147] Eurofound (the European Foundation for the Improvement of Living and Working Conditions, a European Union body). URL: http://www.eurofound.europa.eu/eiro/2012/02/articles/hu1202021i.htm

[148] Eurofound (the European Foundation for the Improvement of Living and Working Conditions, a European Union body). URL: http://www.eurofound.europa.eu/eiro/2012/02/articles/hu1202021i.htm

The global financial crisis has significantly affected Hungary's research and innovation policy. In 2010, for instance, around 59.8 million euros[149] (almost 37% of the STI budget) of the Research and Technological Innovation Fund were blocked and some schemes were suspended[150]. In 2011, the governing rules of the fund have had two major changes, which block the inflow of resources further. No contribution has been paid from the central budget to the fund in 2012 and firms can no longer deduct their intramural R&D expenditures, or the amount they spend on commissioning publicly financed R&D units from the innovation levy[151]. Research performance as a former indicator for the distribution of grants for higher education institutions has been replaced by the number of qualified staff.

Economic outcomes

Hungary's indicators were lower than the European average in 2011. 33.5% of employees worked in knowledge intensive industries, close to the European average of 34.5% in 2009
. 20 PPS€ were produced per hour worked compared to 31 PPS€ for the European average. The GDP per capita was 9000€ in 2010 compared to 22963€ for the European average. Hungary is still in the convergence stage occurring between Central/ Eastern European countries and Western Europe.

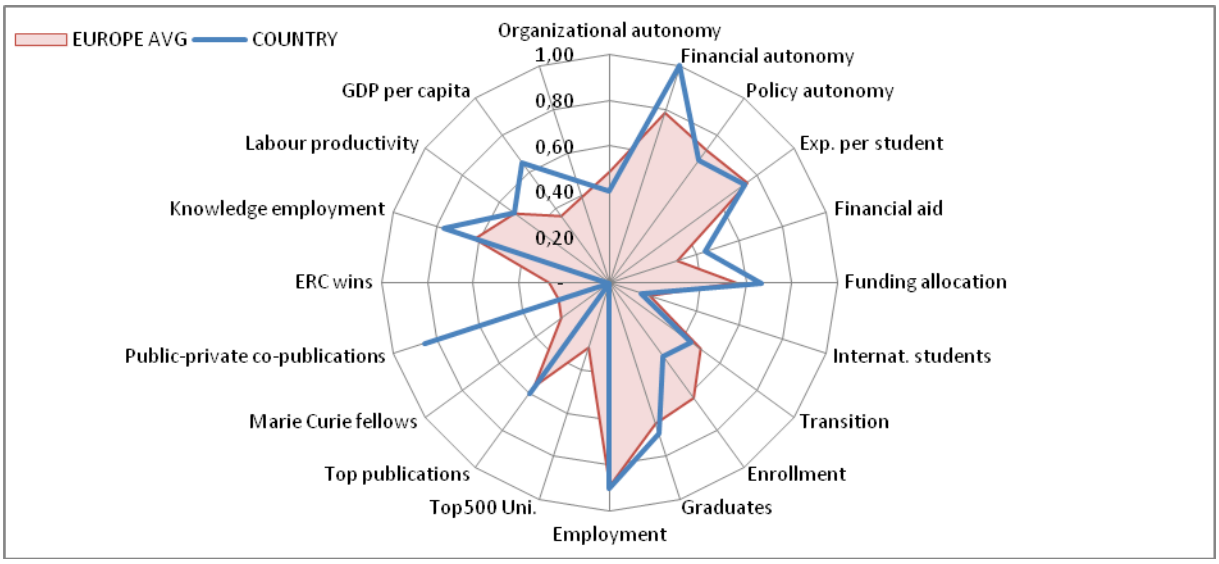
Conclusion

Hungary's university policies are uninviting. The New Higher Education law introduced in 2011 is expected to lower the performance further. This law affects autonomy and decreases public funding (which may not be matched by a sufficient increase in other sources of funding) both of which are correlated with university performance. Amendments to the reform are therefore necessary. Furthermore, a sustainable long-term research and innovation policy is advisable.

[149] Exchange rate 1 USD = 0.77 euros 12th of October 2012.
[150] OECD Science, Technology and Industry outlook (2012). URL: http://www.oecd.org/hungary/sti-outlook-2012-hungary.pdf
[151] Erawatch (the European Commission's information platform on European, national and regional research systems and policies). URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/hu/country?section=ResearchPolicy&subsection=RecentResearchPolicyDev

Country Description – Iceland

Statistical Presentation[152]



Policy	**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**	
	2 (2,40)	3 (2,31)	2 (2,16)	
	Exp. per student[153]	**Financial aid**	**Funding allocation[154]**	
	37,5% (*) (38,0%)	22,5% (15,9%)	66,7 (56,2)	
Performance – Education	**Internat. students**	**Transition[155]**	**Enrollment**	
	4,6% (5,9%)	10,6% (12,7%)	22,8% (36,1%)	
	Graduates	**Employment**		
	22,7% (21,2%)	84,2% (82,9%)		
Performance – Research	**Top 500 Uni.[156]**	**Top publications**		
	0,00 (0,34)	9,3 (8,7)		
	Marie Curie fellows	**Public-private co-publications**	**ERC wins**	
	0,00 (2,08)	170,0 (45,4)	0,00 (0,73)	
Economic Output	**Knowledge employment**	**Labour productivity**	**GDP per capita**	
	43,0% (34,5%)	31PPS€ (*) (31PPS€)	42400€ (22963€)	

(*) Imputed value / ( ) European average

[152] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the Europe average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[153] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[154] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[155] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[156] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Overview of position in groups[157]

Overall	**Medium**
Graduation/employment	**Medium**
Research	**Medium**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Auton	Research	Educ	Access	Fundmix	Empl	Satisf	Productiv	Attractiv	Comp	Innov
	↓	↓		→						

Our overall assessment places Iceland in the middle group. Iceland is also in the middle group in research and education performance.

Policy

Autonomy

Higher institutions in Iceland had higher financial autonomy (3.00) than the European average of 2.31 but fell below the European average for organizational autonomy (2 compared to 2.40) and policy autonomy (2 compared to 2.16) in 2008 according to CHEPS.

Icelandic universities have the ability to design their academic programs, set admission criteria for both Bachelor and Master's level programs, and select quality assurance procedures and providers. Universities freely decide on recruitment modalities and promotions of academic staff. However, a number of regulations restrict universities in terms of appointment, salary bands (which need to be negotiated with the Ministry of public universities[158]), terms of office, and dismissal of the executive head. Moreoveruniversities are required to negotiate enrolment numbers. The public universities universities also need parliamentary approval to be able to sell their assets. Finally, public universities

[157] These indicators are based on standardized country statistics.

[158] Public and private universities get the same amount of funding for teaching per student (per subject) but different amounts for research and housing. Private universities get no funding for housing and research funds are allocated to public universities.

are not permitted to charge tuition fees[159]. Universities in Iceland have also recently had a change in their quality assurance regime, with an institution-wide review, as part of the Icelandic Quality Enhancement Framework (QEF) established by the Icelandic Government in 2011.

Funding

The Government spent per student an estimated 37.5% of GDP per capita on tertiary education, close to the European average. 22.5% of the public budget to tertiary education went to financial aid (around 7% more than the European average) in 2008. Icelandic universities receive block grants divided between teaching and research. Nevertheless, the Government has significantly increased its percentage of GDP investment in education since 2000.

University performance and outputs

Education

Icelandic universities were above the European average in terms of graduation and enrollment rates in 2010. Universities had relatively significant numbers of graduates in comparison to enrolled students (22.7% compared to the European average of approximately 21.2%), and the graduate employment rate of 92% was nine percentage point above the European average in 2010.

But the percentage of international students (4.6%) was lower than the European average. Enrollments and students from non-traditional backgrounds were also lower than the average.

The Ministry aimed to increase enrollment rates with a policy adopted in the summer of 2010, targeting in particular densely populated areas outside the capital.

Research

Despite having twice the European average in public-private co-publications in 2007 and around one percentage point more publication being in the top 10% most cited worldwide in 2008 (as a percentage of total scientific publications), Iceland did not appear to have secured Marie Curie fellows in 2009 or starting grants at the European Research Council (divided by million inhabitants) and has no universities within the Top 500 universities.

Economic outcomes

Iceland had 40% of employees in knowledge intensive activities, 8% more than the European average in 2009. Iceland also had a high GDP per capita (42600€) in comparison to the European average in 2011.

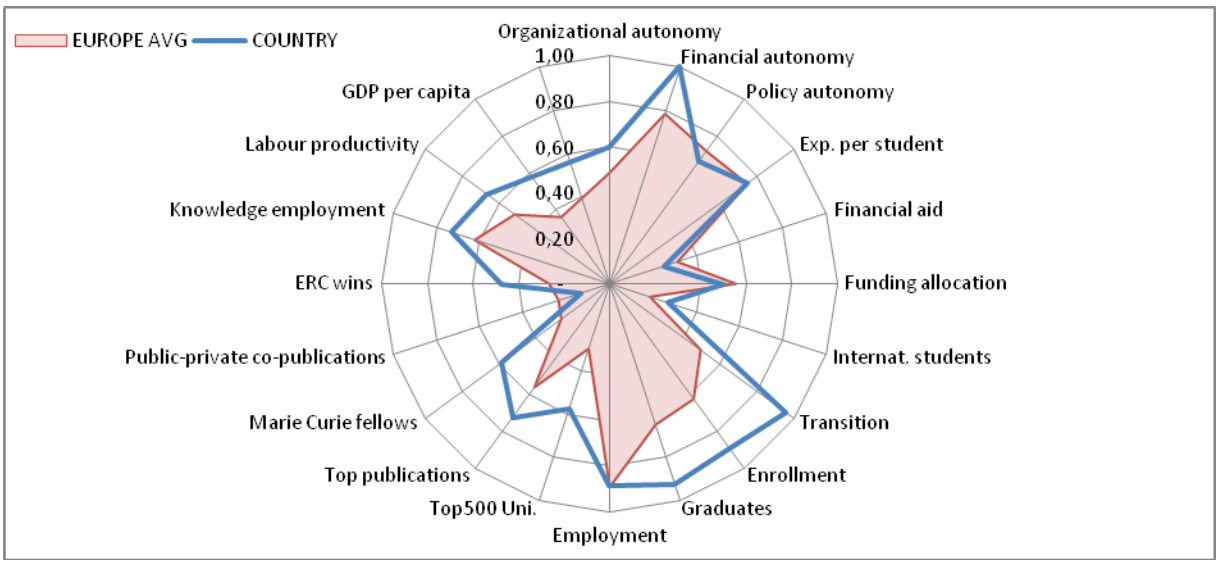
Conclusion

Iceland had a comparatively positive economic outlook in 2011 with productive research and higher than average graduation and employment rates. But the Government could increase the international attractiveness of Icelandic universities to researchers and students.

[159] Eurypedia, Higher Education in Iceland. URL: https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php?title=Iceland:Improving_the_Quality_and_Efficiency_of_Education_and_Training&oldid=67451

Country Description – Ireland

Statistical Presentation[160]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		3 (2,40)	3 (2,31)	2 (2,16)
		Exp. per student[161]	**Financial aid**	**Funding allocation**[162]
		38,19% (38,0%)	12,7% (15,9%)	50 (56,2)
Performance	Education	**Internat. students**	**Transition**[163]	**Enrollment**
		8,6% (*) (5,9%)	23% (12,7%)	51,3% (36,1%)
		Graduates	**Employment**	
		30,33% (21,2%)	82,6% (82,9%)	
	Research	**Top500 Uni.**[164]	**Top publications**	
		0,67 (0,34)	11,31 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		4,77 (2,08)	25,8 (46,8)	1,34 (0,77)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[160] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[161] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008)

[162] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[163] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011)

[164] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	41,06% (34,5%)	40 PPS€ (31, PPS€)	37600€ (22963€)

( ) European average

Overview of position in groups[165]

Overall	Medium
Graduation/employment	Medium
Research	Top

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employment and graduation	Size	Productiv	Attractiv	Comp	Innov
↓	↓	↓	↓	→					↓	↑

Our assessment suggests that Ireland belongs to the middle group. It is located in the upper bound of the middle group in terms of research, and the top group in terms of graduation rates and graduate employment .

Policy

Autonomy

Irish universities had a high level of organizational and financial autonomy in comparison to the European average in 2008. For example, the selection criteria for the executive head are not stipulated by Law. Universities receive block grants and can borrow money up to a certain level.
National quality assurance procedures and a negotiated Employment Control Framework have historically restricted the operation of all higher education institutions.

Economic difficulties in Ireland have led to several changes. Several documents covered these changes. The national strategy *Building Ireland's Smart Economy* (2008) proposed significant reform and restructuring of higher education in order to better position Ireland as knowledge-intensive economy with a "thriving enterprise sector, high-quality employment, secure energy supplies, an attractive environment, and first-class infrastructure." The *Report of the Special Group on Public Service Numbers*

[165] These indicators are based on standardized country statistics.

and Expenditure Programmes (2009) called for a structural reduction of all public sector employees, including higher education[166].

The *National Strategy for Higher Education in Ireland to 2030*, also known as the Hunt report after the chairperson Colin Hunt, introduced in 2011, stresses the importance of having a system of higher education rather than individual institutions operating in an independent manner, (as had been the case since the 1997 Universities Act)[167]. To operationalize the report, the Higher Education Authority (HEA) produced *Towards a Future Higher Education Landscape* (2012) which sets out basic principles for a 'co-ordinated system of higher education'. This strategy emphasises mission distinctiveness and including conditions for merger and designation for technology universities. The remit of the HEA is being expanded, and a new Qualifications and Quality Assurance Authority has been created in 2012 as a single Quality assurance authority and regulator for the entire sector.

Funding

Spending per student as a percentage of GDP per capita was slightly above European average in 2008. The Government spent the equivalent of 38.19% of GDP per capita per student in 2008. Public spending has fallen dramatically, state funding per student decreasing almost 20% since 2007 to €8,000[168]. Public expenditure on R&D for higher education went down from 0.51% to 0.45% of GDP between 2009 and 2010[169]. The budget is likely to continue to fall into the future, especially as student numbers are projected to increase over the next couple of decades. The Department of Education and Science projected that overall student numbers will rise to 215,900 by 2020; and to a peak of 268,100 a decade later[170].

The European University Association reported cuts above 10% in 2012 in comparison to 2008[171].

The equivalent of 12.7% of the public budget for tertiary education went to financial aid in 2008. Undergraduate students pay a "contribution", currently €2000 per annum, up from €900 in 2008 but due to increase to €3,000 by 2015. All postgraduates pay a tuition fee. Students can receive a grant system but no loans are in place. A wide-ranging debate is taking place regarding the sustainability of the system, with an increasing focus on cost-sharing. A recommendation from the recent National Strategy for Higher Education for an income contingent loan (ICL) scheme for Ireland is problematic because of the high level of emigration. Various options are under consideration, including a higher contribution from families who can afford to pay, varied fees for different programmes, allowing

[166] Higher Education Authority (2011) *Revised Employment Control Framework for Higher Education Sector*. URL:http://www.hea.ie/en/node/1413

[167] Higher Education Authority (2011) *National Strategy for Higher Education to 2030. URL: http://www.hea.ie/en/national-strategy; http://www.hea.ie/files/TowardsaFutureHigherEducationLandscape.pdf*

[168] Towards a Future Higher Education Landscape (2012). A publication of the National Strategy for Higher Education. URL: http://www.universityworldnews.com/article.php?story=20120919151044972

[169] Eurostat data

[170] HEA (2011) Sustainability Study. Aligning Participation, Quality and Funding in Irish Higher Education. URL:http://www.hea.ie/files/files/file/News/SustainabilityReport.pdf . (see page 9) ; For more information, also see: http://www.independent.ie/national-news/student-number-surge-to-spark-funding-crisis-2806468.html ; http://www.finance.gov.ie/documents/publications/reports/2011/euimfrevised.pdf

[171] EUA public funding observatory (2012): www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding/public-funding-observatory.aspx

institutions set a market-based fee, restricting student numbers nationally or per institution, and expanding the role of private providers. A detailed study regarding these options is underway.

Performance-based allocation is increasingly used, as part of the Recurrent Grant Allocation Model (RGAM). The Government proposed institutional contracts in return for distinctive institutional mission and performance related funding. The contract would provide base-line funding, particularly for academic staff and for disciplines less likely to receive competitive funding. Over time more funding is expected to be allocated according to competitive criteria.

University performance and outputs

Education

Ireland's education data was mostly over the European average.

Graduate employment levels were on a part with the European average (82.6% versus 82.9% for the European average in 2010). There is a continuing demand for graduates (BA and higher education), with estimates suggesting that supply will just about meet demand[172]. There is also some evidence of skill mismatch, with a shortage of skilled graduates in the IT sector[173].

The Government has set up schemes to fight graduate unemployment, including the Labour Market Activation Programmes, but these provide fewer places than the overall numbers relating to graduate unemployment[174].

Graduate emigration has become high, running at approximately 20%, but this is sector dependent[175], and the motivations for emigration, namely experience or employment, remain debated.

Enrollment levels were around 15% above the European average. The Government has set an enrollment target of 72% by 2020. However, participation is segregated according to socio-economic groups – the abolition of tuition fees in the 1990s helped expand the middle class but has still left large sections of the population outside tertiary education. The latest school-leavers' 'who goes where' study shows that students from fee-paying or a so-called 'grind schools' are most likely to attend university.

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[172] Skill need projections to 2020 will just about meet demand: 48% labour force should have qualifications at NFQ Levels BA, MA, PhD; 45% should have qualifications at secondary level; 7% will have qualifications at primary (see below).

[173] Careers Portal (2011). Skills shortage in Ireland. URL: http://www.careersportal.ie/news/news.php?Heading=Skills+shortage+in+Ireland%3A+&ID=19041101

[174] The Irish Economy: Unemployment among the young. URL: *http://www.irisheconomy.ie/index.php/2009/04/24/unemployment-among-the-young/ ;*
Irish Business and Employers Confederation(2009). Active Labour Market Programmes. Discussion paper for Department of Enterprise, Trade and Employment. URL: *http://www.ibec.ie/IBEC/DFB.nsf/vPages/Social_affairs~Resources~labour-market-programmes-discussion-paper-13-11-2009/$file/Labour_Market_Response_IBEC.pdf*

[175] Philips, C. How many Irish graduates are planning for emigration?, published on Gradireland (careers blog: news and comment on graduate recruitment in Ireland) in April, 12, 2012. URL: http://gradireland.wordpress.com/2012/04/12/how-many-irish-graduates-are-planning-for-emigration/ ; Nihill, C. Majority of students plan to emigrate, survey finds, published in Irish Times on December, 28, 2011. URL: http://www.irishtimes.com/newspaper/ireland/2011/1228/1224309553505.html

Research

Ireland's research indicators were above European average bar for a comparatively lower number of public-private co-publications. Recent reforms point toward a concentration of resources. The report of the Research Prioritization Exercise Group (2012) aims to concentrate research funding by recommending 14 priority areas for research activity, which will receive 80% of all research funding, with an emphasis on applied research[176]. The arts, humanities and social sciences (with limited exceptions) have not been included as a priority area[177]. The Research Councils for Science, Engineering and Technology, and Humanities and Social Sciences have also been merged to form one Irish Research Council[178].

Irish institutions have created an Irish on-line repository of Irish Research (www.rian.ie) to ensure that Thomson Reuters (which is used by the government agencies) has an accurate account of Irish research. The InCites project has also been funded by the Higher Education Authority. Further initiatives are being undertaken, all with the intention of ensuring that 1) researchers are aware of the importance of making their research visible, and 2) there is a common platform and definitions for recording research. Forfas, the state agency responsible for science and technology policy, collects data biennially. The financial situation is making it difficult for HEIs to improve international attractiveness in international comparisons by hiring new staff/"stars" or to influence rankings.

Economic outcomes

Ireland had a comparatively high GDP per capita in 2011 (37600 euros), as well as a higher proportion of employees in knowledge industries and labor productivity than in the European average in 2010. The Irish government aimed to improve competitiveness by concentrating knowledge intensive and research-based industries. A number of recent government reports describe the vision of creating Ireland's 'smart economy'. The basic idea, as expressed in two reports - *Building Ireland's Smart Economy* (BISE), and the *Report of the Innovation Taskforce* (RIT) - is to focus public investment on a set of targeted priority areas in science, engineering and technology to create a research, innovation and commercialization environment that translates knowledge creation into economic activity that generates highly-paid sustainable jobs. A deliberate government policy to drive down the cost of labor aims to make Ireland more competitive. Public sector salaries have been cut, up to 10% at the top end.

[176] Report of the Research Prioritisation Steering Group (2011). URL: *http://www.forfas.ie/media/ffs20120301-Report_of_the_Research_Prioritisation_Steering_Group-Press_Release.pdf*

[177] Report of the Research Prioritisation Steering Group (2012). URL: *http://www.forfas.ie/media/ffs20120301-Research_Prioritisation_Exercise_Report.pdf*

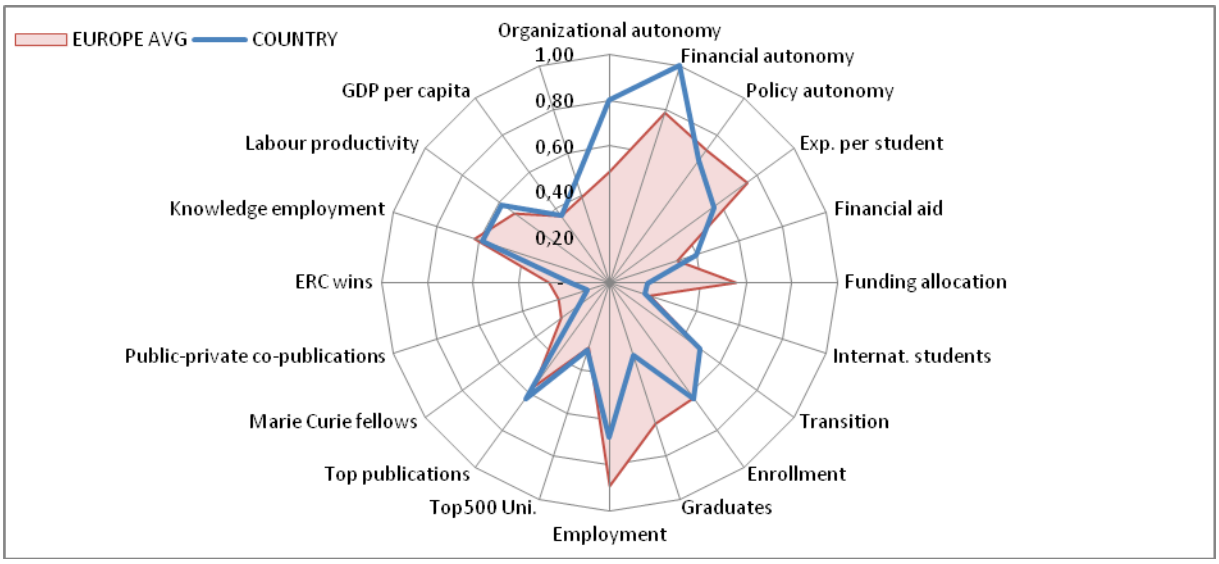
[178] *O'CARROLL, C.* (2012) New body sees value of research, published in Irish times on April, 26,. URL: *http://www.irishtimes.com/newspaper/sciencetoday/2012/0426/1224315190526.html*

Conclusion

The Irish government has had to increase cost-sharing and concentrate resources regarding education and research to address a challenging economic context, while also targeting growth in research-based industries in order to restore competitiveness. These changes create several challenges for Irish higher education institutions, for example in terms of international attractiveness for staff, but may result in a more competitive economy over the medium to long-run.

Country Description – Italy

Statistical Presentation[179]



Policy	**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**	
	4 (2,40)	3 (2,31)	2 (2,16)	
	Exp. per student[180]	**Financial aid**	**Funding allocation[181]**	
	28,7% (38,0%)	20,2% (15,9%)	16,7 (56,2)	
Performance – Education	**Internat. students**	**Transition[182]**	**Enrollment**	
	5,1% (*) (5,9%)	12,7% (*) (12,7%)	36,2% (36,1%)	
	Graduates	**Employment**		
	10,9% (21,2%)	63,3% (82,9%)		
Performance – Research	**Top500 Uni.[183]**	**Top publications**		
	0,36 (0,34)	9,8 (8,7)		
	Marie Curie fellows	**Public-private co-publications**	**ERC wins**	
	1,31 (2,08)	20,7 (45,4)	0,46 (0,73)	
Economic Output	**Knowledge employment**	**Labour productivity**	**GDP per capita**	
	33,0% (34,5%)	35 PPS€ (31 PPS€)	23500€ (22963€)	

[179] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.
[180] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).
[181] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).
[182] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).
[183] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011). European

(*) Imputed value / ( ) European average

Overview of position in groups[184]

Overall	**Medium**
Graduation/employment	**Modest**
Research	**Medium**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employment and Graduation	Size	Productiv	Attractiv	Comp	Innov
→	→	→	→	→						↓

Our assessment suggests that Italy belongs to the middle group. The graduate employment and graduation performance of its higher education system is more modest, similarly to its research performance.

Policy

Autonomy

Italy's policy autonomy was below the European average (2 compared to 2.16), but CHEPS reported above European average levels of organizational and financial autonomy in 2008. Various reforms aimed to increase the autonomy of universities in Italy in the mid-to late 1990s. These reforms included a shift to lump sum allocation (as opposed to item budgeting) in 1995 for example. According to the European University Association, institutions may decide whether they wish to incorporate external members into their governing bodies (but the appointment is controlled by an external authority)[185]. The Ministry keeps a strict control of various aspects of higher education life, including curricular contents. The centralized decision-making structure may lead to a difference between de jure and de facto autonomy.

Recent legislation (Gelmini Law) of the end of 2010 aimed to decentralize decisions to universities, increase autonomy and accountability in management and allocate resources according to the demand for courses as well as research on a competitive basis[186]. The impact of this reform is debated. It may not

[184] These indicators are based on standardized country statistics.
[185] EUA (2012) autonomy scoreboard URL: http://www.university-autonomy.eu/countries/italy/
[186] Based on the OECD Economic Surveys: Italy 2011.

have led to a decentralization of decision-making but has further strengthened central control mechanisms on the university system[187].

Funding

The levels of government financing of higher education per student as a percentage of GDP per capita in Italy were significantly lower than the European average with the equivalent of 28.7% of GDP per capita spent per student in 2008. Public expenditure on higher education has decreased between 2009 and 2011, with a 7.2% reduction in resources allocated to universities through the state-run *Fondo di Finanziamento Ordinario- FFO*, due to significant budget cuts caused by the financial crisis.

Planned reforms in funding allocation were expected to increase performance-based funding[188]. The most recent reform proposal from the new Minister of Education Profumo (June 2012), called "meritocratic package", provides complementary measures aimed at increasing the funding for universities and students that have the highest performances. Italy is the only country in which there is no national or regional body to which universities are accountable for the use of public funding, except for grants awarded for specific research projects (namely PRIN and FIRB)[189].

However, these changes may remain at the proposal stage due to the opposition of stakeholders and several cuts of the spending review.

Financial aid for students (which accounted for 20.2% of the public budget for tertiary education in 2008) has not had any major reforms over the past years. The 2010 reform set aside funds for grants and for student accommodation. But its impact has been minimal.

University performance and outputs

Education

The percentage of enrolled students aged 20 (36.2%), and estimated percentage of international students in Italy (5.1%)[190] and students from non-traditional backgrounds (12.7%) were more or less aligned with the European average in 2009-2011.

However, the percentage of graduates over enrollment and the employment rate were well below the European average (10.9% compared to 21.2% and 63.3% compared to 82.9% respectively). The system of open access to university and the lack of alternative types of tertiary education may contribute to the comparatively low percentage of graduates[191].

[187] Allarme laureati, nel 2020 18 milioni in meno E in Italia il "disallineamento" esiste già - Repubblica.it. URL: http://www.repubblica.it/scuola/2012/10/24/news/allarme_laureati_nel_2020_ne_mancheranno_18_milioni-45175290/?ref=HREC2-1 and "Siamo tornati e siamo pentiti" Boomerang per i cervelli rientrati - Repubblica.it http://www.repubblica.it/scuola/2012/10/22/news/cervelli_levi_montalcini-44927962/?ref=HREC2-1

[188] The Observatory on Borderless Higher Education (2012) *Higher education reforms and economic crisis in Italy and Spain*

[189] European Commission (2008) *Higher Education Governance in Europe, policies, structures, funding and academic staff*, Brussels: European Commission.

[190] The Observatory on Borderless Higher Education, op.cit.

[191] OECD (2011) Economic Surveys: Italy.

Low employment rates may be a reflection of the lack of connection between universities and the actual business demand of graduates in Italy[192].

Research

Two of Italy's research indicators were approximately in line with the European average (Top 500 Universities, 0.36 compared to 0.34; percentage of scientific publications within 10% most cited, 9.8 compared to 8.7).

But Italy had a lower number of Marie Curie grant holders and ERC starting grant winners in 2011, indicating that research attractiveness could be improved (Marie Curie grant holders, 1.31 compared to 2.08; ERC wins, 0.46 compared to 0.73). Italy also had twice fewer public-private co-publications than the European average (20.7 compared to 45.4) in 2011.

The Government could encourage a competitive funding system for research to stimulate productivity and attractiveness, as suggested in reform plans in 2010, as well as a Research Assessment Exercise to increase transparency. However, R&D spending for higher education as a percentage of GDP was 0.13 percentage point below EU average in 2011. The Government aimed to increase business cooperation with a bill in January 2007, according to which companies and entrepreneurs may benefit from tax relief of up to 15 % of the amount invested for research activities conducted in partnership with universities[193].

Economic outcomes

Italy's economic output indicators were on a par with the European average.

33% of Italian employees were in a Knowledge Intensive Activity, 1.5% below European average. 35 PPS€ was generated per hour worked compared to 31 PPS€ on average in Europe in 2010. The GDP per capita, was somewhat higher (23500€ compared to 22963€) in 2011.

The current economic crisis has affected Italy and impeded its economic growth (GPD per capita as well as labor productivity have decreased when compared to pre-crisis figures from 2007)[194]. Stimulating labor productivity through better research and skilled graduates could improve Italy's economic outlook. Such strategy could be formulated in the existing coordination scheme between Ministry of University and Research, the Ministry of Economic Development, and the Ministry of Innovation in the Public Administration.

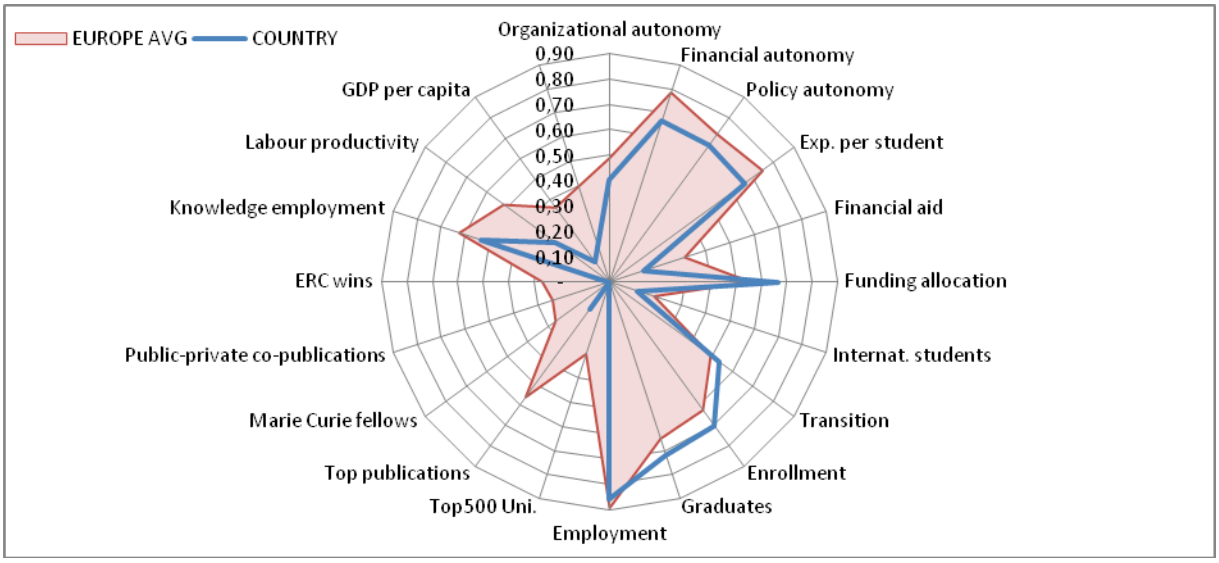
[192] OECD, idem.
[193] Ibid
[194] Eurostat, tables on economic growth and GDP per capita

Conclusion

Key issues for Italian higher education include research attractiveness as well as graduate employment and graduation rates. Strengthening the link between academia and the labor market, could be a significant lever to reverse the current economic trend.

Country Description – Latvia

Statistical Presentation[195]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		2 (2,40)	2 (2,31)	2 (2,16)
		Exp. per student[196]	**Financial aid**	**Funding allocation[197]**
		33,6% (*) (38,0 %)	7,1% (15,9%)	66,7 (56,2)
Performance	Education	**Internat. Student**	**Transition[198]**	**Enrollment**
		3,7% (*) (5,9%)	13,4% (*) (12,7%)	40,5% (36,1%)
		Graduates	**Employment**	
		23,6% (21,2%)	80,3% (82,9%)	
	Research	**Top500 Uni.[199]**	**Top publications**	
		0,00 (0,34)	2,1 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		0,00 (2,08)	2,0 (45,4)	0,00 (0,73)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[195] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[2] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[3] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[4] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[5] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	30,1% (34,5%)	16 PPS€ (31 PPS€)	6400€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[200]

Overall	**Modest**
Graduation/employment	**Medium**
Research	**Modest**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employment and graduation	Size	Productiv	Attractiv	Comp	Innov
↑		↓								

Our assessment suggests that Latvia could improve. It belongs to the more modest group. The country's graduation and graduate employment rates are somewhat better than its research performance.

Policy

Autonomy

Latvia's autonomy scores were on a par with the European average in 2008 according to CHEPS. The Latvian government has pursued management reforms of university administration from "strong ruling" to "soft steering", increasing autonomy in principle. Universities can for example decide on their own curricula, or borrow money with the approval of an external authority.

Funding

Latvia had a lower level of public fund going to higher education than the European average in 2008. The Government spent the equivalent per student of an estimated 33.6% of GDP per capita, 1.4 percentage point lower than the European average.

Public universities are funded through state financed budget 'slots'. A funding formula including a basic budget as well as a premium adjusted by coefficients allocated to disciplines and degree levels determines the amount of these budget 'slots'[201], set by the Government each year.[202] Private

[200] These indicators are preliminary choices, which largely reflect the ones in the country profile sent in April 2012. The scores reported are country statistics standardized from 0 to 1.

[201] Cabinet regulations Nr 994 from 12.12.2006. (1,1 in legal studies, 1,4 humanities and social sciences to 5,1 in dentistry; 1.5 for master level studies and 3 for doctoral studies)

[202] In 2004 it was 681 euros; in 2006 999 euros, in 2007 – 1518 euros; in 2008 – 1819 euros, and in 2009 1547 euros. Exchange rate 12th of October 2012: 1 Latvian lat = 1.43 euros

universities are, like many other European countries, only funded by fees. But both private and state universities charge fees.

Tuition fees are defined by each university and vary depending from the type of the study (full time, part time), study program, and the level of the studies (bachelor, master or doctoral). In 2011/2012 tuition fees for full time studies varied between 1493 euros and 5383 euros per academic year, and for par time studies – between 976 euros and 1939 euros.

The Government's spending on financial aid (as a percentage of the public budget for tertiary education) was twice lower than the European average in 2008, at 7.1%. Students express some resentment concerning state loans; many prefer to work besides studying or live on parental support. On June 2, 2009 the Cabinet of Ministers of the Republic of Latvia made changes in the regulations regarding scholarships. Scholarships are awarded on the basis of merit, with need being the second selection criterion (if two candidates have equal merit base, then those in need get the priority)[203]. State financed scholarship schemes are very limited and there are not many private scholarships either.

University performance and outputs

Education

Latvia was above the European average in terms of student size, e.g. enrollment as well as recruiting students from non-traditional backgrounds, and of graduation rates in 2008-2010.

To encourage access, the Government makes a certain percentage of places tuition fee free. Tuition free access covers a third of students, others having the option of resorting to commercial loans, which are limited to around 20% given debt aversion, working or family support. The Government introduced targeted scholarships in 2009, giving priority to orphans, students with special needs, students whose families are poor or students with three or more children, pending average marks similar to the ones of a mainstream student. Other initiatives to expand financial aid include a 2010 ESF project for doctoral and master students. The Government was also considering a reform in line with the Australian model of income-contingent loans.

Latvia had lower employment (80.3% of graduates in employment up to three years after graduation in 2010) and international openness rates than the European average (an estimated 3.7% of students being international in 2009).
The Ministry of Education and Science's "Action Plan for Necessary Reforms in Higher Education and science for 2010 – 2013" set a target of 20% of foreign student inward mobility by 2020. The plan suggests a center to coordinate services, develop study programs in foreign languages, and eliminate

[203] For more information, see:
https://eurostudent.his.de/eiv/report/details.jsp?ssid=null&top_oid=6&sub_oid=161&cnt_oid=11&sel_lang=

obstacles to receive visa or entrance permissions for students from other countries, increase grants for foreign students[204].

Research

Latvia had a lower research record than the European average. Only 2.1% of its scientific publications were in the top 10% most cited worldwide in 2007 for example.

Research conditions may impact on Latvian research attractiveness. Latvia had no incoming Marie Curie fellow in 2008-2009 or ERC starting grant winner in 2011. But Latvia has increasingly been involved in international research programs. In 2010 644 project proposals submitted were submitted and 146 project proposals passed for the framework programme six. The Ministry of Education and Science has announced that it encouraged international cooperation through the participation of Latvian universities in the EU R&D programs, research involvement in technology platforms, and space research[205].

A broader investment in research could stimulate productivity but may be difficult given the financial constraints of the country. Prior European Commission recommendations have included improving the efficiency of the system including for example a further rationalization of the current R&D infrastructures, better attention given to the needs of the productive sector and opening more widely higher education to the international. Diversifying sources of funding could also facilitate research[206].

Latvian Higher education institutions also aim to allocated European Development Funds to various institutions including twenty five regional institutions, ten state scientific institutions and four or five institutions of European level[207].

Economic outcomes

Latvia's economic profile was also lower than the European average, with a GDP per capita close to four times lower than the European average at 6.400 euros, labour productivity half the European average and 30.1% of employees in knowledge intensive activities (as opposed to 34.5% for the European average) in 2009.

Conclusion

Latvian higher education has a particular challenge regarding research performance, a need recognized by the Government report regarding the necessary structural reforms to be adopted. Boosting Latvian

[204] Ministry of Education and science Republic of Latvia. Fact Sheet on Higher Education. URL: http://izm.izm.gov.lv/upload_file/en/higher_education.pdf

[205] Ministry of Education and science Republic of Latvia. Fact Sheet on Science. URL: http://izm.izm.gov.lv/upload_file/en/science.pdf

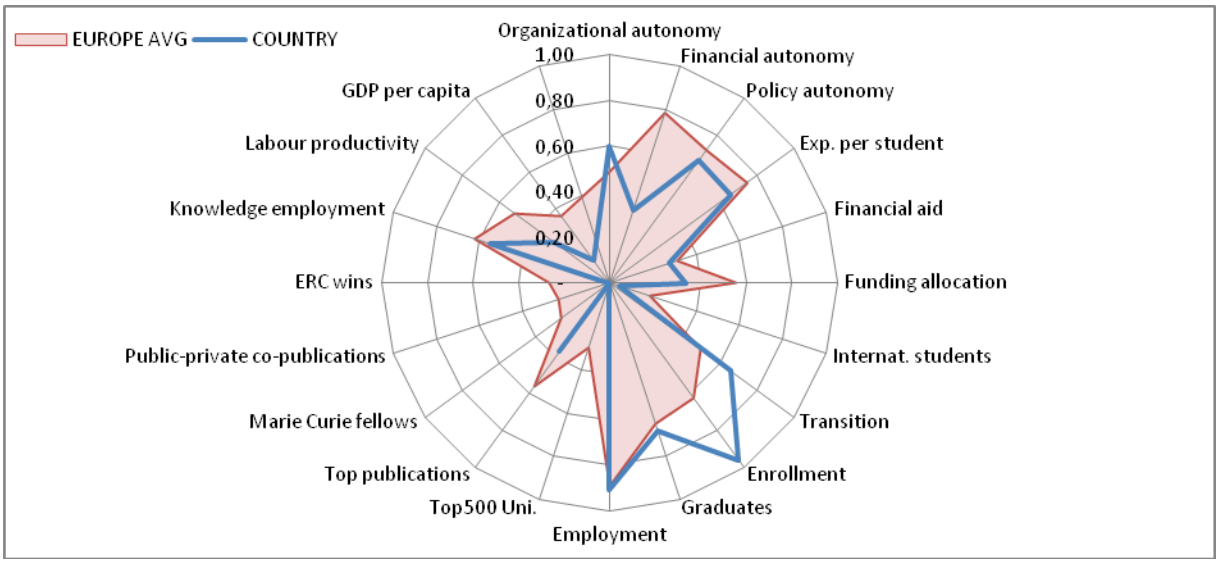
[206] European Commission Horizon 2020, Fact sheet Latvia.

[207] Ministry of Education and science Republic of Latvia. Fact Sheet on Science. URL: http://izm.izm.gov.lv/upload_file/en/science.pdf

research productivity would enhance the contribution of its higher education system to the broader economy.

Country Description – Lithuania

Statistical Presentation[208]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		3 (2,40)	1 (2,31)	2 (2,16)
		Exp. per student[209]	**Financial aid**	**Funding allocation[210]**
		33,37% (*) (8,0%)	15,5% (12,7%)	33,33 (56,2)
Performance	Education	**Internat. Students**	**Transition[211]**	**Enrollment**
		1,34% (5,9%)	15,7% (*) (11,9%)	55,2% (36,1%)
		Graduates	**Employment**	
		22,36% (21,2%)	84,8% (82,9%)	
	Research	**Top500 Uni.[212]**	**Top publications**	
		0 (0,34)	5,82 (8,7)	
		Marie Curie fellows	**Public private co-publications**	**ERC wins**
		0 (2,08)	3 (46,8)	0 (0,77)
Economic Output		**Knowledge employment**	**Labour productivity**	**GDP per capita**
		31,2% (34,5%)	18 PPS€ (31 PPS€)	7700€ (22963€)

(*) Imputed value / ( ) European average

[208] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[209] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[210] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008)

[211] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[212] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Overview of position in groups[213]

Overall	**Modest**
Graduation/employment	**Medium**
Research	**Modest**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employt	Size	Productiv	Attractiv	Comp	Innov
↓	→	↓			↑	→				

Our assessment suggests that Lithuania could improve i.e. it belongs the more modest group. Lithuania's employment and graduation performance is medium. But the country's research performance is more modest.

Policy

Autonomy

Lithuania had a lower level of financial and policy autonomy than the European average according to CHEPS (2008). The Lithuanian government has since amended the organizational management of universities. The 2009 law on Higher education and Research redistributed the power between the Senate and the university Board. External members of the board are selected by the Lithuanian Science Council and adopted by the Minister of Education and Science (the Board is composed of 50 academics and 50 external members appointed by the Ministry).

The responsibilities of appointing the Rector, strategic planning and budgeting, structural changes and other important decisions were granted to the Board, while the Senate concentrates solving only academic matters. In 2011, the Constitutional Court decided that the changes contradicted the principles of academic autonomy and amendments of the law were needed. In response to the decision adjustments have been made to the Law partially restoring the powers of the university Senates.

[213] These indicators are based on standardized country statistics.

Funding

The equivalent of 33,4% of GDP per capita was spent per student in 2008, below the 38,0% of the European average in 2008. Public budgets to higher education have suffered cuts above 10% in comparison to 2008[214].

The Lithuanian government spent 14.1% of total public expenditure tertiary education on financial aid. About 45% of all the students in the country receive state funding for their studies and fifty five percent pay the tuition fee, a loan system for students being under discussion to help students cover the costs of these fees.

The 2009 reform stressed the allocation of finances to students rather than to the institution, a concept called the 'education bag': the Government covers the costs of studies irrespectively of the type of institution (public or private) in which the student is enrolled. The Government will not cap the number of eligible students anymore. The Government is also planning to introduce a student loan scheme in order to complement the Lithuanian financial aid system.

There were no major policy changes besides political statements regarding research funding. The current higher education reform, which started with the adoption of the Law on Higher education and Research (2009), aims to reach 50% of financing for research allocated competitively. Lithuania had 26% of its financing for research allocated competitively in 2010[215].

University performance and outputs

Education

Lithuania's graduation and graduate enrollment outputs, as well as the size of the student body (enrollment and students from non-traditional background) were above the European average.

But Lithuania had a low percentage of international students, 1.34% of students were international in 2009. International data sometimes show that the amount of international students recently tripled in one year. The humanitarian university moved to Vilnius, bringing a lot of students there so the numbers changed dramatically.

84/4% of graduates were employed three years of less after graduation in 2010, above the European average. 22.36% of enrolled students graduated in 2010 (above the European average of 21.2%).

[214] European University Association (2012) Public funding observatory. URL: www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding/public-funding-observatory.aspx

[215] According to the Lithuanian Science Council (2011).

Research

Lithuania's research performance is much below the European average. 5.8% of Lithuanian scientific publications were in the top 10% cited worldwide in 2007.

Lithuanian universities have a low level of research attractiveness and visibility, with no registered incoming Marie Curie fellow, no university in the top 500 according to the 2011 ARWU ranking, no starting ERC grant winner. The Government yet has to enact policy changes in terms of research.

Economic outcomes

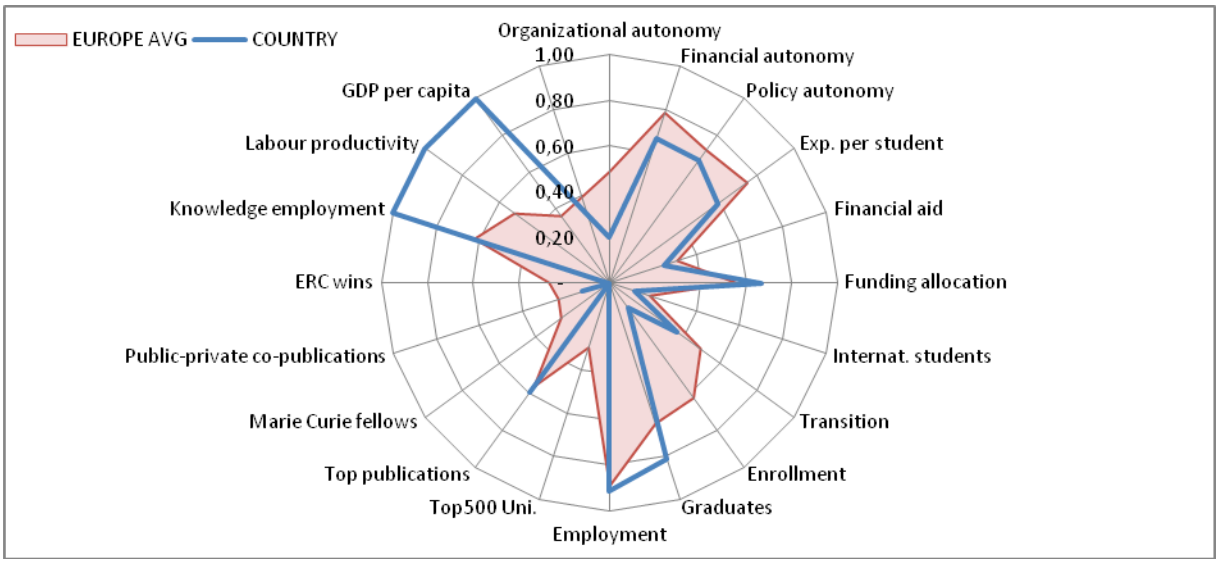
Lithuania has particularly low labour productivity with 18 euros of GDP per capita produced per hour worked (compared to 31 euros for the European average). Both the percentage of the population in knowledge employment and GDP per capita were also lower than the European average. Further synergies between innovation and higher education could be developed by the Ministry for Education and Science to improve the economic outlook.

Conclusion

The Lithuanian Government should recognize the value of higher education for the labour market and innovation, maintain the autonomy of its institutions and invest in increasing research attractiveness and productivity.

Country Description – Luxembourg

Statistical Presentation[216]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		1 (2,40)	2 (2,31)	2 (2,16)
		Exp. per student[217]	**Financial aid**	**Funding allocation[218]**
		30,0% (38,0%)	12,7% (*) (15,9%)	66,7 (56,2)
Performance	Education	**Internat. students**	**Transition[219]**	**Enrollment**
		3,7% (*) (5,9%)	8,4% (12,7%)	7,8% (36,1%)
		Graduates	**Employment**	
		26,7% (21,2%)	85,6% (82,9%)	
	Research	**Top500 Uni.[220]**	**Top publications**	
		0,00 (0,34)	9,3 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		0,00 (2,08)	24,9 (45,4)	0,00 (0,73)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[216] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.
[217] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).
[218] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).
[219] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).
[220] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	56,2% (34,5%)	60 PPS€ (31 PPS€)	64900€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[221]

Overall	**Modest**
Graduation/employment	**Medium**
Research	**Medium**

Our assessment places Luxembourg in the more modest group overall. Graduation and employment rate are comparatively high in Luxembourg. But research performance (even weighed by the number of inhabitants) is more modest, which may be due to a comparatively low level of funding per student as a percentage of GDP per capita and the relatively recent establishment of the university system, the University of Luxembourg being the only University in addition to higher education institutions such as the Institut Universitaire International.

Trends prediction

Policy					**Performance**				**Economic output**	
Govern	**Funding**			**System**	**Education**		**Research**			
Auton	Research	Educ	Access	Fundmix	Empl	Satisf	Productiv	Attractiv	Comp	Innov
	↓	↓		→						

Policy

Autonomy

The University of Luxembourg had a comparatively lower level of organizational autonomy than the European average, scoring 1 in comparison to 2.40 which is the European average organizational autonomy level. Universities had only a slightly lower level of policy autonomy than the European average (2 as opposed to 2.16) in 2008. Universities are restricted in determining their academic structure: faculties are determined by law. Universities determine the total number of admitted students, and fix tuition fees.

The University of Luxembourg also had a level of financial autonomy which was slightly below the European average (2 in comparison to 2.31 as a European average). Yet, the University of Luxembourg receives a block grant that universities manage from the Government, can accumulate surpluses from state funds, fix tuition fee levels, borrow money from banks and raise funds on the capital market[3].

[221] These indicators are based on standardized country statistics.

Funding

The Government spent the equivalent of 30% of GDP per capita per student on tertiary education in 2008 and an estimated 12.7% on loans, grants and scholarships in 2008. A national law (26th July 2010 Bill Number 6148) stipulated that only children over the age of 18 who are enrolled full time in higher education receive financial aid (instead of children aged 18 years old in general)[222].

University performance and outputs

Education

Luxembourg had a higher percentage of graduation than average (26.7% in comparison to 21.2%) as well as a comparatively higher employment rate three years after graduation (85.6% of graduates in employment in comparison to 82.9% for the European average) respectively in 2010 and 2009.

But Luxembourg had a comparatively low estimated percentage of international students, of 3.7% in comparison to the European average of 5.9% in 2009. Data from the University of Luxembourg suggests however that the number of mobile students who have not obtained their secondary education degree in Luxembourg is as high as 57% the overall percentage of mobile students (students having completed their secondary education abroad) is of 42.8%[223]. The enrollment rate was considerably lower than the European average in Luxembourg, equivalent to 7.8% of the population aged 20 in 2010, compared to 36% on average in Europe, which may have been an effect of previous financial aid designs or of the relatively small size of the Luxembourgish higher education sector.

Research

The University of Luxembourg had a higher level of scientific publications being among the top 10% cited worldwide than the European average (9.32% in comparison to 8.7%) in 2007. Luxembourg had a lower than average performance among other research indicators, with no registered Marie Curie incoming fellows in 2009, ERC grant winners or universities in the top 500 ARWU ranking in 2011.

Economic outcomes

The economic output of Luxembourg is very high, with a GDP per capita close to 3 times higher than the European average in 2011, close to twice the amount of GDP generated per hour worked and 1.6% more employees in knowledge intensive industries in 2009. The integration of higher education and innovation policies in a single ministry, namely the Ministry for higher education and research, may encourage synergies between higher education and innovation.

[222] For more information, see: http://www.pwc.lu/en/tax-consulting/docs/pwc-tax-230810-en.pdf
[223] University of Luxembourg, International students data 2011-2012 – winter semester as of the 31/12/2011

Conclusion

The economy of Luxembourg could become even stronger through the development of its higher education system. The recent higher education system means that the output of its university is still limited[224], particularly in terms of research attractiveness.

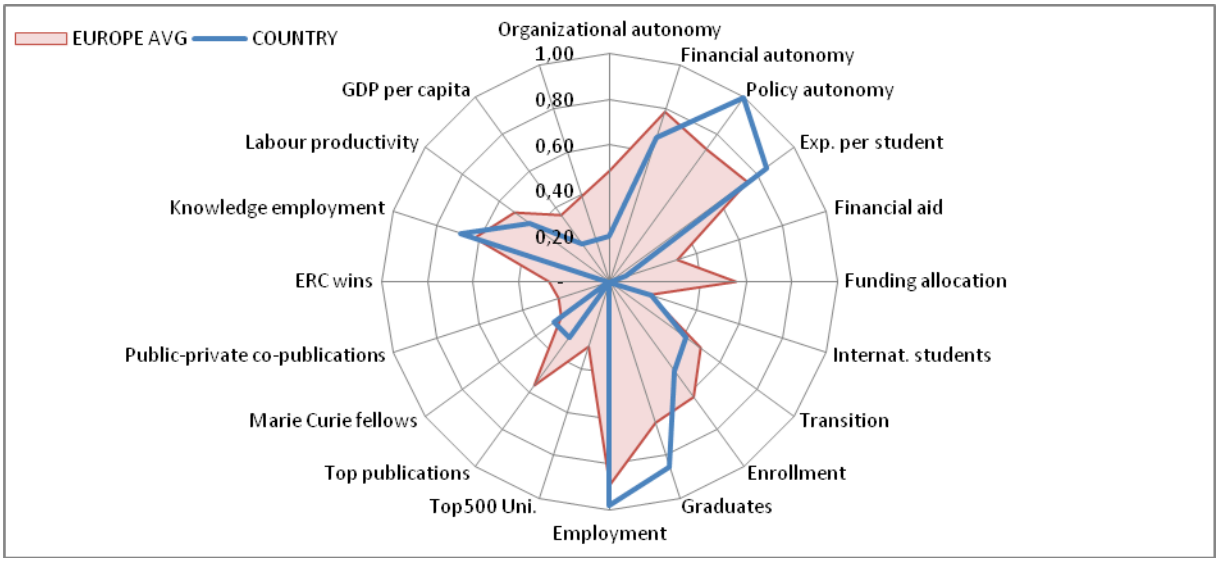
[2] For more information, see European University Association(2009): *University Autonomy in Europe I.* URL: http://www.rkrs.si/gradiva/dokumenti/EUA_Autonomy_Report_Final.pdf

[3] Eurofound: Eironline (European Industrail Relations Observatory on- line) (2010). *Reform of family allowances framework impacts cross-border workers.* http://www.eurofound.europa.eu/eiro/2010/10/articles/lu1010011i.htm

[4] PricewaterhouseCoopers(2010), *Luxembourg- Legislation governing government financial aid for students in higher education*.

Country Description – Malta

Statistical Presentation[225]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		1 (2,40)	2 (2,31)	3 (2,16)
		Exp. per student[226]	**Financial aid**	**Funding allocation**[227]
		43,2% (*) (38,0%)	3,8% (*) (15,9%)	0,0 (56,2)
Performance	Education	**Internat. students**	**Transition**[228]	**Enrollment**
		6,2% (*) (5,9%)	10,0% (12,7%)	27,7% (36,1%)
		Graduates	**Employment**	
		27,7% (21,2%)	91,5% (82,9%)	
	Research	**Top500 Uni.**[229]	**Top publications**	
		0,00 (0,34)	4,7 (8,7)	
		Marie Curie fellows	**Public private co-publications**	**ERC wins**
		2,44 (2,08)	1,2 (45,4)	0,00 (0,73)
Economic Output		**Knowledge employment**	**Labour productivity**	**GDP per capita**
		38,8% (34,5%)	26 PPS€ (31 PPS€)	13300€ (22963€)

[225] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[2] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[3] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[4] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[5] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

(*) Imputed value / ( ) European average

Overview of position in groups[230]

Overall	**Modest**
Graduation/employment	**Top**
Research	**Medium**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employt	Size	Productiv	Attractiv	Comp	Innov
N/A	↑	↑	↑	N/A	↑	↑	↑	↑	↑	↑

Our assessment suggests that Malta could improve i.e. it belongs to the more modest group. Malta's graduate employment rate is comparatively high. But Malta's research performance is a bit more modest than the Europe average.

Policy

Autonomy

Malta had a lower level of organizational and financial autonomy than the European average according to CHEPS (2008). The University has a limited ability to take organizational decisions such as the determination of internal academic structures and other legal matters. Moreover, higher education institutions in Malta do not have the capacity to take both internal and external financial decisions like setting salary bands for teaching and non-teaching staff, and trading on the financial market. This reduces their ability to prepare long-term strategic plans and achieve set goals. Maltese higher education institutions are, however, allowed to make certain staffing decisions including the appointment, promotion, and dismissal of administrative personnel. This is shown by the relatively higher policy autonomy of 3.0 compared to the European average of 2.16[231].

The Maltese Parliament recently debated amendments to the Education Act aimed at institutionalizing external audits of higher education institutions, leading to a legal framework for external auditing.

Funding

The government spent the equivalent per student of 43.2% of its GDP per capita on public institutions, which is higher than European average of 38% in 2008. The Government largely funds the University of

[230] These indicators are based on standardized country statistics.

[231] For more information, see EUA (2009) *University autonomy in Europe I: an exploratory study*, Brussels: EUA.

Malta, one of three postsecondary education institutions. The budget is allocated after the University submits and estimate of needs based on enrolled staff and students for the upcoming year and the Government does not use performance based funding indicators in formulas and contracts[232].

During the period 2002-2009, recurrent expenditure increased from EUR 21.7 million to EUR 39.6 million. Given the projected increase in student population to 35% by 2020, stipends (grants over and above free access) given to University of Malta students are forecasted to increase from approx. EUR 10.6 million annually to EUR 13.5 million annually by 2020. This increase may also require additional costs in terms of infrastructure.

The government spent an estimated 4% of public funding to tertiary education on financial aid (compared to a European average of 16%) in 2008. Students do not pay tuition fees for university access.

University performance and outputs

Education

Malta has a comparatively high percentage of graduates and graduate employment. 28% of enrolled students graduating in 2010, compared to the European average of 21%. 91.5% of graduates were in employment three years or less after graduation in 2009, compared to the European average of 82.9%.

Maltese higher education institutions welcomed an estimated 6.5% of inward mobile students compared to European average of 6% in 2009.

Malta had a lower student pool than the European average (although our study showed that student quantitative as such did not positively affect the performance of universities for economic innovation), 27.7% of the population aged 20years in 2010. And the transition of students from non-traditional backgrounds was lower than the European average by close to two percentage points.

The present government is engaged in attracting direct foreign investment which absorbs new graduates, mainly in the science, technology, finance and IT sectors[233]. There is also a conscious strategic plan to produce more graduates in the areas of science and technology, with bursuries aimed at promoting postgraduate studuies in the aforementioned areas.

Research

The performance of the University of Malta was more modest, except for the number of incoming Marie Curie fellows, 2.44 per million inhabitants, which were on par with the European average in 2009. Moreover, the university has not won any ERC starting grants from the European Research Council (ERC), even if it took part in a total of 112 funded projects since 2007 as part of the FP7 programme. The percentage of scientific publications in the top 10% cited worldwide was twice lower in Malta in 2011. Several initiatives aim to boost research. The National Research and Innovation Fund increased funding

[232] EACEA (2008) Higher Education funding in Europe: policies, structures, funding and academic staff, p. 51, URL: http://eacea.ec.europa.eu/education/eurydice/documents/thematic_reports/091EN.pdf

[233] Fore more information, see PwC 'Foreign Direct Investments', http://www.pwc.com/mt/en/about-us/doing-business/Chapter_4.pdf

by 58% in 2011 to 1.1 million euros[234], selecting eight industry-academic projects for funding. The Malta Council for Science and Technology is planning a National Interactive Science Center. Other programmes augmenting funds for research include government scholarships (MGSS and STEPS), Innovation Programmes (EUREKA, Euro Stars, Incentives for Enterprise), and the National Research and Innovation Programme (FP unit and COST). The Maltese Government aims to liaise with the R&D departments of multinational companies established in Malta and is investing heavily in two major developments (Smart City for ICT and Bio-medical park for bio-sciences) to provide state-of-the-art infrastructure for high-end research and development.

The University has freed up well-funded researchers from teaching duties, to focus exclusively on research. But many research projects still lack local funds. More could be done to stimulate research, for example by having a rigorous research assessment exercise with incentives tied to those performing excellently in research.

Economic outcomes

Malta has a higher percentage of employees in knowledge intensive activities than the European average, i.e. 38.8%, compared to the European average of 34.5%, Malta has a lower labour productivity (26euros generated of GDP per hour worked) compared to the Europe average of 31 euros in 2010. It also had a lower level of GDP per capita than the European average (13300 euros versus 23009 euros) in 2011.

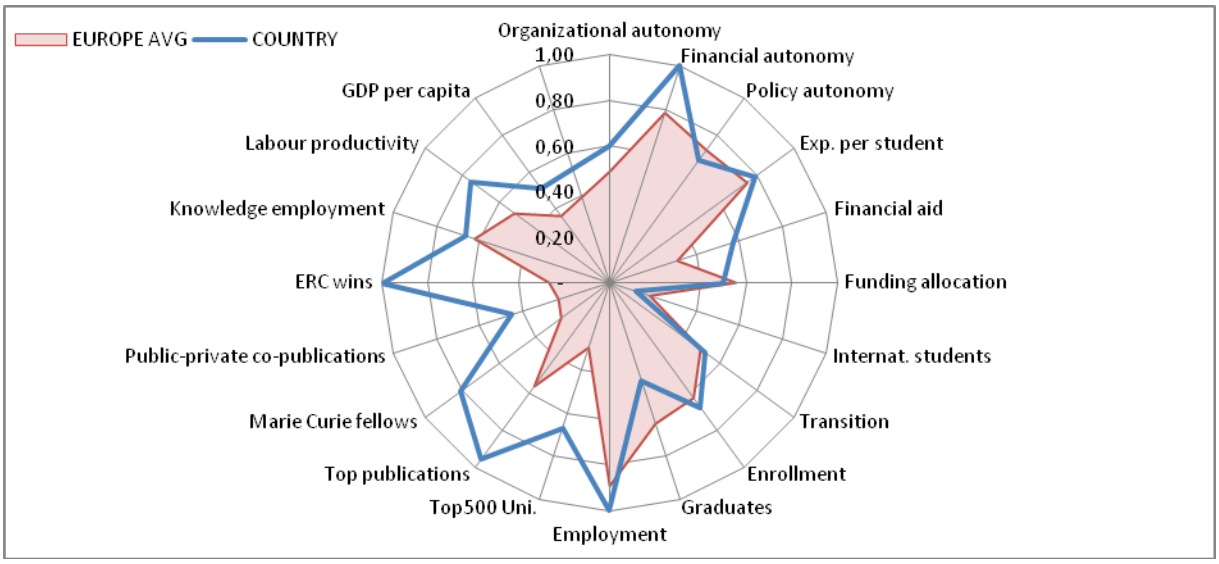
Conclusion

The University of Malta is performing above the European average, particularly in terms of graduate employment and graduation rates. These graduates contribute to high labour productivity and knowledge intensive sectors. The Government could boost the University of Malta's performance by providing incentives to improve research outputs, including for example a research assessment with financial incentives for research performance.

[234] For more information, see: http://www.timesofmalta.com/articles/view/20120717/local/Funding-boost-for-national-research-and-innovation.428930

Country Description – Netherlands

Statistical Presentation[235]



Policy	**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**	
	3 (2,40)	3 (2,31)	2 (2,16)	
	Exp. per student[236]	**Financial aid**	**Funding allocation[237]**	
	40,21% (38,0%)	28,9% (15,9%)	50 (56,2)	
Performance – Education	**Internat. student**	**Transition[238]**	**Enrollment**	
	3,83% (5,9%)	13,1% (*) (12,7%)	38,9% (36,1%)	
	Graduates	**Employment**		
	14,76% (21,2%)	93,5% (82,9%)		
Performance – Research	**Top500 Uni.[239]**	**Top publications**		
	0,78 (0,34)	14,93 (8,7)		
	Marie Curie fellows	**Public-private co-publications**	**ERC wins**	
	6,58 (2,08)	90 (46,8)	2,82 (0,77)	
Economic Output	**Knowledge employment**	**Labour productivity**	**GDP per capita**	
	37,39 (34,5)	45 PPS€ (31 PPS€)	33300€ (22963€)	

(*) Imputed value / ( ) European average

[235] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[236] Total public expenditure per student in tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities. Source: OECD at a glance (2008); WorldDataBank (2006 and 2008)

[237] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[231] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[239] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Overview of position in groups[240]

Overall	**Top**
Graduation/employment	**Medium**
Research	**Top**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Auton	Research	Educ	Access	Fundmix	Empl	Satisf	Productiv	Attractiv	Comp	Innov
↓	↓	↓	↓	↑					↓	

The Netherlands is part of the top group overall. The Netherland has a high research performance. Its graduation rate was comparatively more average.

Policy

Autonomy

The Netherlands had comparatively high financial and organizational autonomy in 2008, following the HOAK policy papers. These papers aimed to set up as little central steering as possible, and instated the 'state supervising model' as opposed to the 'state control model'. The Law on higher education and scientific research (WHW), first issued in 1992 and frequently adapted since, reflects this general philosophy.

However, autonomy could be higher: the legislation is still extensive in imposing regulations on the organizational structure of universities, even though some of the main characteristics (selection criteria for the executive head not specified by law) provide autonomy to universities. Policy autonomy is restricted by macro-efficiency procedures: universities can only start new degree courses after accreditation to be funded and if such courses are not in competition with existing degree courses. But the Government does not decide on the allocation of places (numerous fixus) to be funded, except for medicine.

University autonomy has decreased in the 21st century mainly as the result of incidents pertaining legal loopholes in funding and fraud were reported[241]. The Government, under the pressure of Parliament, then took step after step to impose more regulations. Universities feel that incentives in funding are decreasing autonomy, due to policies which focus public research on economic top sectors.

[240] The scores reported are standardized. Please refer to the technical report for further information.

[241] For more information, see for example: 'Minister was te laks bij voorkomen hbo-fraude, in Trouw p.4 , 19 December 2002.

In other words, the scores on autonomy in the Netherlands mask relatively high level of governmental interventions of Government in universities. The political culture combined with high political instability (8 Governments in 10 years, with every Government coming with new ideas on university-Government relations) can also stand in the way of a stable and long-term university policy.

Funding

The Netherlands had a higher expenditure per student as a percentage of GDP per capita (40.2% in 2008) than the European average. But public budgets have decreased by over 10% in comparison to 2008[242].

More generally, the Government, which provides funds in the form of a block grant, is also engaged in making contracts with universities which take profiling into account and in which successful mission differentiation is rewarded, implying that performance related criteria are significant in funding allocation. For example, the State secretary of education, culture and science (OC&W) announced that he would make 'performance agreements' with all Dutch universities and colleges, with the parameters of these agreements to be defined by the Association of Cooperating Dutch Universities (VSNU). All higher education institutions were invited to submit proposals for performance targets in quality of education and excellence, programme completion, standards for teachers and education. In addition, institutions were asked to name their plans regarding overhead and valorisation.

28.9% of the budget of tertiary education going went to financial aid in 2008. Public investment in loans, grants and scholarships compensates for tuition fees. The Netherlands was one of the first European countries to introduce student loan schemes, which are due to entirely replace the grant system by 2014. The current Government is also planning a reduction of other types of aid to students.

University performance and outputs

Education

The Netherlands had above average education indicators, bar for its graduation rates and international openness between 2008 and 2011. Graduate employment rates were comparatively high at 93.5%, due to policy measures geared toward facilitating employment. Graduate employment benefits from the work of municipalities, in cooperation with the Center for Work and Income (CWI), which provide support for graduates to find employment and not to rely on unemployment benefits (the value of it being tied to the number of years of experience)[243].

Enrolment rates were high with 38.9% of the population aged 20 in an ISCED5-6 course in 2010. Financial incentives may boost enrolment rates, public fund allocation being contingent on student enrolment. These incentives also encourage graduation, given that students who drop out are not financed, even if graduation rates remained lower than the European average at 14.8%. And students

[242] EUA (2012) *Public funding observatory*. URL: www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding/public-funding-observatory.aspx

[243] OECD (2008) Jobs for youth/Des emplois pour les jeunes. URL: http://www.oecd.org/els/employmentpoliciesanddata/39885340.pdf

have to pay the full price of education if they exceed the time period set by Government for the study plus a grace period.
The impact of the above mentioned financial aid reforms is still awaited, especially regarding whether or not there will be students that will choose not to study for financial reasons, and to what extent this is determined by parental background.

Research

Research in the Netherlands is above European average, notably with three times more Marie Curie fellow per million inhabitants than the European average in 2009. Universities have some room to allocate research funding as part of the block funding they receive from the Government. But public research funding is under pressure. Recent plans from the Government are negatively affecting an important source of competitive public funding for innovation and research of universities: the budget of the Netherlands Organisation for Scientific Research, which is forecasted to go down from 658 million to 245 million euros, a decrease of 63%, with the present debt crisis making further reductions likely.

Economic outcomes

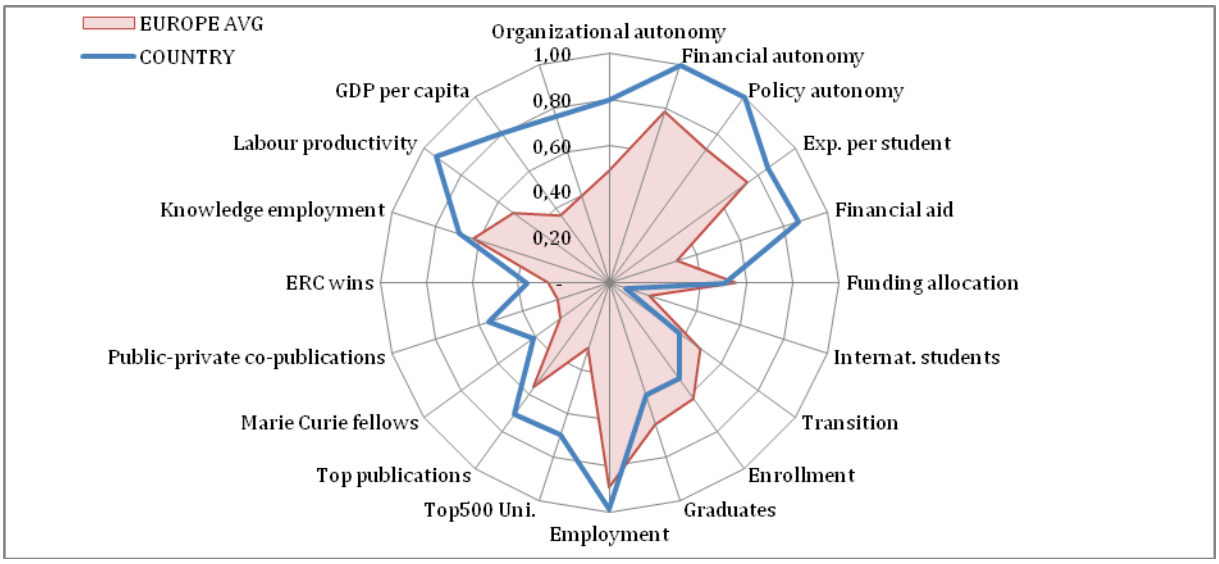
Economic output in the Netherlands was above European average, with 37.4% of employees in knowledge intensive activities, 41 euros generated per hour worked and a GDP per capita of 33300 euros in 2011. Innovation may suffer from the budget cuts which are foreseen and are also aimed at education and R&D in order for the Dutch public budget to reach the European deficit ratio of 3% of GDP.

Conclusion

The Netherlands higher education obtains a comparatively highly assessment, particularly in research. This is accompanied by a relatively high level of innovation. However, the country has changed in the recent past in terms autonomy and funding. The Dutch government therefore needs to be wary of the need to preserve autonomy and financing levels in higher education institutions in order to maintain the innovation potential of the economy.

Country Description – Norway

Statistical Presentation[244]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		4 (2,40)	3 (2,31)	3 (2,16)
		Exp. per student[245]	**Financial aid**	**Funding allocation[246]**
		43,3% (38,0%)	44,1% (15,9%)	50 (56,2)
Performance	Education	**Internat. students**	**Transition[247]**	**Enrollment**
		2,34% (5,9%)	9% (12,7%)	29,7% (36,1%)
		Graduates	**Employment**	
		16,84% (21,2%)	92,1% (82,9%)	
	Research	**Top500 Uni.[248]**	**Top publications**	
		0,81 (0,34)	11,03 (8,7)	
		Marie Curie fellows	**Public private co-publications**	**ERC wins**
		3,38 (2,080)	110,6 (46,8)	1,02 (0,77)
Economic Output		**Knowledge employment**	**Labour productivity**	**GDP per capita**
		38,74% (34,5%)	56 PPS€ (31, PPS€)	52200€ (22963€)

(*) Imputed value / ( ) European average

[244] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources

[245] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008)

[246] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[247] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011)

[248] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Overview of position in groups[249]

Overall	**Top**
Graduation/employment	**Medium**
Research	**Top**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employt	Size	Productiv	Attractiv	Comp	Innov
	↓	↓		→						

Our assessment suggests that Norway belongs to the top group, with high research performance, a medium performance in terms of graduate employment and graduation rates. Policy

Autonomy

Norway scored above the EU average in all three dimensions of university autonomy (4 compared to the EU average of 2.40 for organizational autonomy, 3 compared to 2.16 for financial autonomy and 3 compared to 2.31 for policy autonomy) in 2008 according to CHEPS.

Universities have considerable autonomy on management of internal structures, an autonomy which increased with the Act of the 1st of April 2005. For instance, they can determine their academic structures including admission criteria, enrolment size, academic programmes, language of instruction, and other legal entity matters. However, they are restricted in terms of appointment and dismissal of executive heads and external members of the board.

Financially, universities are allowed to keep surplus to a certain percentage. Universities are unable to trade in the financial market or borrow money and require external approval to sell their properties including historic buildings[250]. Officially, the Ministry of Education and Research, one of three levels of government involved in education policy, is responsible for administration of higher institutions and research.

Funding

The percent of expenditure per student proportionally to GDP per capita was 43.4%, more than 5% higher than the European average in 2008. The public budget for higher education has increased since

[249] These indicators are based on standardized country statistics.

[250] For more information, see EUA (2012) Autonomy scoreboard, URL: http://www.university-autonomy.eu/countries/norway/

2008[251]. Universities receive result-based public funding as block grant every two years for research and other financial activities.

44.1% of the public budget for tertiary education was spent on financial aid to students, close to three times more than the European average of 15.9% in 2008. Norway has strict tuition-free policy for all groups of students who pursue various programmes in the universities, a policy which has been the object of some debate[252].

University performance and outputs

Education

Norway's education output indicators were lower than the European average. Graduate employment was higher than the European average, with 92.1% of graduates in employment up to three years after graduation. But other education indicators were all below the EU average, in particular graduation rates and the percentage of foreign students.

These output indicators suggest that Norwegian universities are facing the challenge of making universities attractive and to promote graduation. According to the OECD (2009) Norwegian higher education does not provide enough incentives for students to graduate quickly enough, and upon graduation, graduates may be stuck in 'welfare traps' rather than seek employment[253].

Furthermore, the relatively generous public funding of university education (free tuition, generous loans and stipends) attracts students, while the relatively tight labor market makes many students drop out in favor of taking on a job before completing their education to a degree.

Research

Norwegian research indicators were above European average. The jiao500 Academic Ranking of World Universities (ARWU), our indicator of research visibility, shows that Norwegian universities were more internationally recognized than the EU average. The universities also have high attractiveness for grants support from Marie Curie and European Research Council (ERC) towards research. 11% of scientific publications were among the top 10% most cited worldwide in 2007. And close to 116 publications were co-published between the public and private sector, twice the European average of 46.8 in 2008.

Economic outcomes

Norway's economy is robust despite the recent wave of economic contraction in the European region. An hour worked generated 56 euros per hour and was thus well above the European average in 2010. 38.7% of employees worked in knowledge-intensive sector in comparison to the total number of

[251] EUA (2012) *Public funding observatory*. URL: http://www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding/public-funding-observatory.aspx

[252] Union of Education Norway (2007) *Main trends in higher education Norway.* URL: http://download.ei-ie.org/docs/IRISDocuments/Education/Higher%20Education%20and%20Research/2007-00150-01-E.pdf

[253] OECD (2009) 'Jobs for Youth', URL: http://www.oecd.org/els/employmentpoliciesanddata/41201137.pdf

employees, higher than the European average in 2010. The GDP per capita of Norway was 52,200 euros, more than twice the European average in 2011.

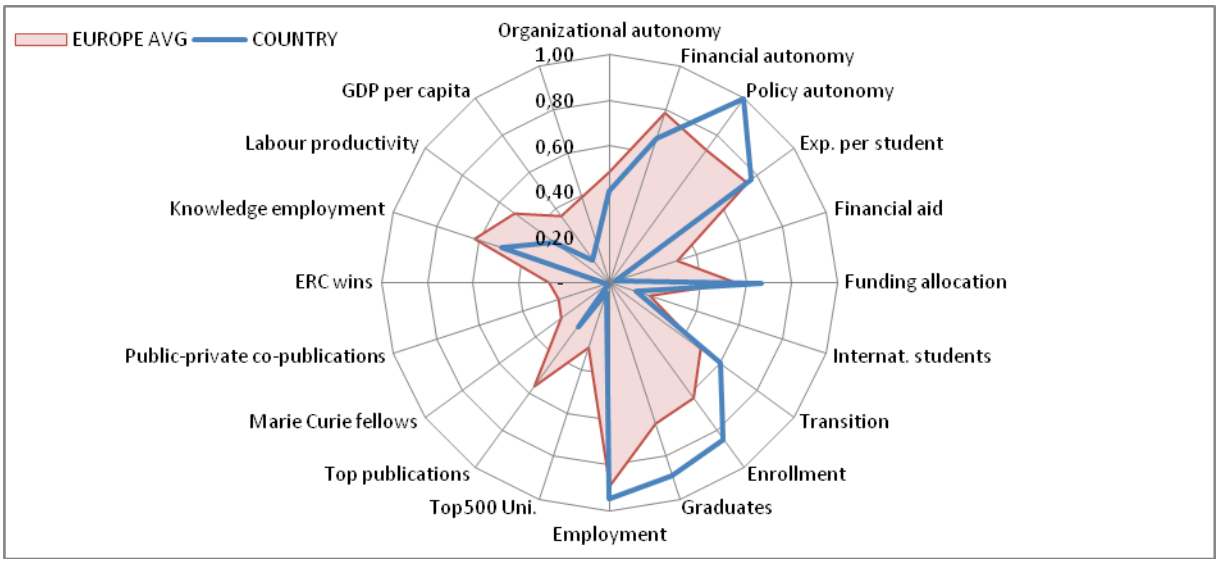
The Norwegian Government also encourages closer ties between higher education and innovation through inter-ministerial cooperation between the Ministry for Trade and Industry and the Ministry for Education and Research.

Conclusion

Norwegian higher education policies, which include generous public funding and university autonomy, obtained a favorable assessment in our exercise. Norwegian universities also have a strong research potential, but a lower educational output, particularly in terms of graduation rates and international students. Increasing the throughput of education could strengthen the quality of higher education and its contribution to the knowledge economy, especially if matched by high graduate employment rates.

Country Description – Poland

Statistical Presentation[254]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		2 (2,40)	2 (2,31)	3 (2,16)
		Exp. per student [255]	**Financial aid**	**Funding allocation** [256]
		39,1% (38,0%)	1,5% (15,9%)	66,66 (56,2)
Performance	Education	**Internat. students**	**Transition** [257]	**Enrollment**
		3,8% (*) (5,9%)	14,6% (*) (12,7%)	48,9% (36,1%)
		Graduates	**Employment**	
		29,08% (21,2%)	88,7% (82,9%)	
	Research	**Top500 Uni.** [258]	**Top publications**	
		0,05 (0,34)	3,68 (8,7)	
		Marie Curie fellows	**Public private co-publications**	**ERC wins**
		0,08 (2,08)	2,5 (46,8)	0,05 (0,77)
Economic Output		**Knowledge employment**	**Labour productivity**	**GDP per capita**
		28,0% (34,5%)	18 PPS€ (31 PPS€)	8100€ (22963€)

[254] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[255] Total public expenditure per student in tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities. Source: OECD at a glance (2008); WorldDataBank (2006 and 2008)

[256] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[257] Students entering higher education through an alternative route by type of route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain type of education and post-secondary (non-tertiary) education. Eurostudent (2011)

[258] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

(*) Imputed value / ( ) European average

Overview of position in groups[259]

Overall	**Modest**
Graduation/employment	**Top**
Research	**Modest**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employment and graduation	Size	Productiv	Attractiv	Comp	Innov
↑	↑	→	↑	→	→	→	↑	↑	↑	↑

Our assessment suggests that Polish higher education policies belong to the more modest group. Poland has high education performance in terms of both graduation and employment ratesbut a comparatively modest research performance.

Policy

Autonomy

Poland had a slightly lower level of autonomy than the EU average bar in policy autonomy in 2008 according to CHEPS. For example, the law states minimal requirements for the executive head of the University, who must hold a doctoral degree and restrictions apply if universities wish to keep surpluses or borrow money[260]. Policy autonomy increased further with the National Qualification Framework in the Higher Education Act of 2011. This act aimed to provide more flexibility to establish study programs. Polish universities can issue institution-specific diplomas (as opposed to national ones). The implementation of the reforms depends on the adhesion of academic and administrative staff. Finally, private universities have had their autonomy somehow restricted, as their financial plans must be submitted to the Ministry.

[259] These indicators are based on standardized country statistics.
[260] For more information, see EUA (2012) 'Autonomy scoreboard', URL: http://www.university-autonomy.eu/countries/poland/

Funding

The Government spent the equivalent of 39.1% of GDP per capita per student, similarly to the EU average in 2008. Public funding is deemed to have increased since then[261].

Polish universities have benefited from an investment program of 4.15 billion euros, 3.53 billion coming from structural and cohesion funds, to improve buildings and equipment in recent years[262].

Public funds to financial aid remained very small, 1.5% of the public budget to tertiary education in comparison to 15.9% in 2008. Students enrolled have the possibility to apply for several types of refundable and non-refundable financial support from the State budget. Financial support includes means-tested maintenance, meal and accommodation grants-all for students from low income families, temporary aid payments and merit award scholarships according to the Law on Higher Education of 2007[263].

University performance and outputs

Education

Poland had higher than average enrolment, graduation and graduate employment rates, the Higher Education Act of 2011 encouraging institutions to monitor employment situation of graduates - 3 and 5 year after graduation.[6] Polish universities were also more inclusive of students from non-traditional backgrounds than the EU average and had higher enrollment levels.
The estimated percentage of international students 3.8% of the student population, remained below the European average in 2009.

Research

Polish research indicators were below the European average. 3.7% of its scientific publications were among the top 10% most cited worldwide in 2007 for example.

The Government has introduced six pieces of legislation since the 1st of October 2010[264], in order to reform research. These reforms aimed to stimulate research through competition with financial incentives and to facilitate the concentration of research funding. Two research agencies, the NCN and the NCBiR finance respectively fundamental and applied research, and they have the obligation to distribute at least 20% of funds to young scientists. The agencies have been created to improve Polish research and higher education.

[261] EUA (2012) *Public funding observatory*.URL: http://www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding/public-funding-observatory.aspx
[262] Polish Ministry of Science and Higher Education (2010) *National Cohesion Strategy*. URL: http://www.nauka.gov.pl/financing/european-funds/structural-funds-for-science-and-higher-education/
[263] For more information, see: Higher education finance and cost-sharing in Poland(2010). URL: http://gse.buffalo.edu/org/inthigheredfinance/files/Country_Profiles/Europe/Poland.pdf
[264] These laws led to 92 pieces of regulations on both education and research. For more information, see http://www.premier.gov.pl/en/government_activities/science_and_higher_education/

A legislation adopted in March 2011 provides competitive faculty research units with funds to be able to increase the level of PhD stipends to the best PhD students[265]. A national centre of science has also been created to improve Polish research. This may help to increase effectiveness in research funding and has made it easier for universities to apply for more funding. Additional funding will be provided to the National Leading Scientific Centers (so called KNOW - in Polish). The first KNOWs were established on July 2011 in chemistry, physics, medicine, health care and pharmacy.

Economic outcomes

Poland had a GDP per capita equivalent to 8100 euros in 2011, 14863 euros lower than the European average. It also had lower levels of labour productivity, with 18 euros of GDP generated per hour worked in comparison to 31 euros for the European average. And 28% of employees were in knowledge intensive activities in 2009. Strengthening ties between higher education and the broader economic context could increase the economic outlook of Poland, and interministerial coordination could facilitate such ties. For example, the Ministry of Education and Science is officially involved with the Ministry of Economic Affairs and the Ministry of Regional Development in deciding about innovation policy.

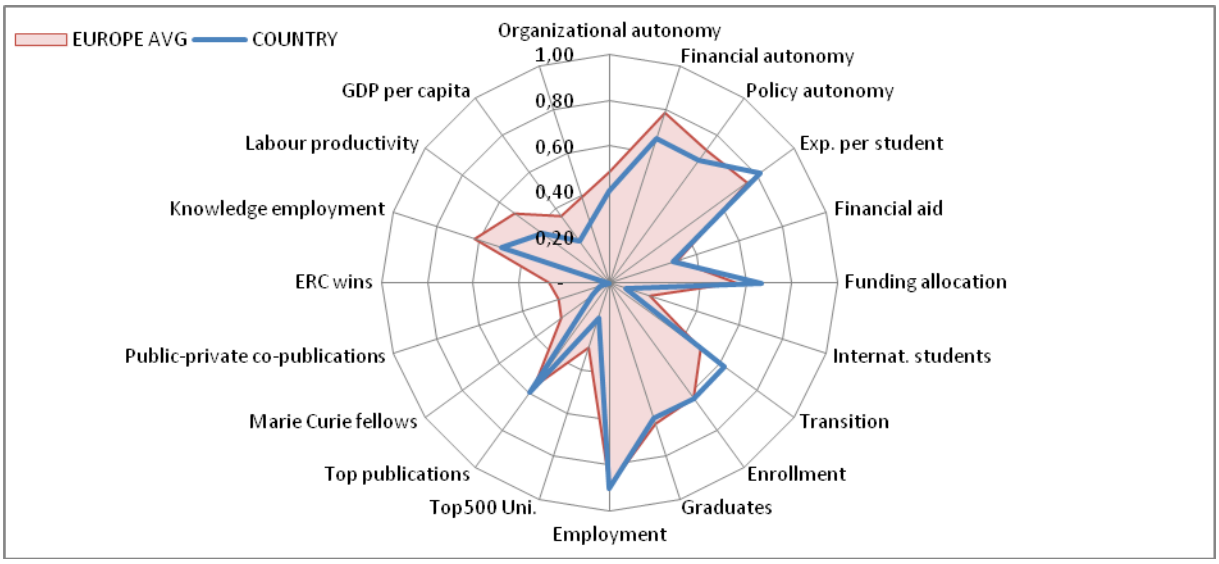
Conclusion

The main challenge of the Polish higher education landscape was the comparatively lower research performance, in addition to increasing its attractiveness to international students. The Polish Government has undertaken reforms to increase the research performance of universities, and worked in order to facilitate rewards for high quality research, which could boost the country's economic performance.

265 Kwiek, M. and Maassen, P. (2011) Changes in higher education peripheries and their context: Poland, Norway, and Europe URL: http://www.cpp.amu.edu.pl/pdf/Kwiek_Introduction_to_National%20Higher%20Education%20Reforms%20in%20a%20European%20Context.pdf

Country Description – Portugal

Statistical Presentation[266]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		2 (2,40)	2 (2,31)	2 (2,16)
		Exp. per student[267]	**Financial aid**	**Funding allocation[268]**
		41,6% (38,0%)	14,9% (15,9%)	66,7 (56,2)
Performance	Education	**Internat. students**	**Transition[269]**	**Enrollment**
		2,5% (5,9%)	15% (12,7%)	36,1% (36,1%)
		Graduates	**,Employment**	
		20,5% (21,2%)	84,3% (82,9%)	
	Research	**Top500 Uni.[270]**	**Top publications**	
		0,19 (0,34)	9,26 (8,7)	
		Marie Curie fellows	**Public private co-publications**	**ERC wins**
		0,75 (2,08)	8,7 (46,8)	0 (0,77)
Economic Output		**Knowledge employment**	**Labour productivity**	**GDP per capita**
		27,89% (34,5%)	22 PPS€ (31 PPS€)	14600€ (22963€)

[266] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[267] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[268] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[269] Students entering higher education through an alternative route by type of route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination and post-secondary (non-tertiary) education. Eurostudent (2011).

(*) Imputed value / ( ) European average

Overview of position in groups[271]

Overall	**Medium**
Graduation/employment	**Medium**
Research	**Medium**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employt And graduation	Size	Productiv	Attractiv	Comp	Innov
↓	↓	↓	↓	↓						

Our assessment places Portugal in the middle group. This grouping is on a par with Portugal's education performance, in terms of graduation, graduate employment performance. Portugal's research performance was more modest.

Policy

Autonomy

Portuguese universities had a slightly lower level of autonomy than the European average according to CHEPS (2008). Portuguese universities are impeded by a longstanding tradition of strong bureaucratic regulations by the state. The Government also often undercuts existing rules on autonomy in order to constrain institutions to behave as expected by the Government, and not necessarily as the institutions would otherwise be responding (Teixeira and Amaral, 2010). Portuguese higher education have undergone a series of significant reforms since 2005. These reforms included new statutes for all higher education institutions and a new type of Universities as Public Foundations operating under private law; a new accreditation agency, and new regulations for the academic careers in addition to the implementation of the Bologna process (a series of law in 2007 aimed to reform quality assurance mechanisms for example[272]). Since 2008, however, the number of initiatives has diminished, mainly due

[271] These indicators are based on standardized country statistics.

[272] Law 38/2007 of 16 August 2007 and Decree Law 82/2007 of 5 November 2007.

to a reform fatigue, but also because of the financial, now economic crisis and the restrictions that came as a consequence of it.
Restraints are currently placed on the financial autonomy of HEIs, due to budgetary pressures which are a consequence of the recent economic crisis.

Funding

Public expenditure per student was equivalent to 41.55% of GDP per capita in 2008 including R&D activities according to the OECD, more than 3 points over the European average. Public budgets have declined between 2005 and 2012 and decreased by more than 10% since 2008[273]. The Government spent 14.9 % of the public budget for tertiary education on financial aid, which was 1 percentage point below the average of European countries in 2008.

The loan scheme introduced in 2007, which was based on private funding with a public guarantee was recently suspended. The award of grants has also been made more selective.

These changes are responses to the economic crisis rather than reforms as such. The crisis is expected to deepen the inequities already present in the Portuguese higher education system and to worsen access to education. -The tight financial retrenchment has forced higher education institutions to be more parsimonious and to diversify revenue, making it more difficult for universities to receive funding.

University performance and outputs

Education

Portugal had a higher graduate employment rate than the European average in 2011, as well as a higher ability to integrate students from non-traditional backgrounds. Students above 23 years of age had favorable access conditions. The institutions which profited the most from this system were the ones which were struggling to get students beforehand.

Portugal's attractiveness to international students was lower, with 2.45% foreign students in comparison to the European average of 5.9% in 2009. The Government attempted to facilitate the mobility of students through the recognition of ECTS credits, with the Decree law 341/2007 of 12 October 2007 and the Ministerial order 401/2007 of the 5th of April 2007, but further reforms may be necessary to increase international students' intake.

Moreover, graduation rates proportionally to the population of enrolled students were slightly lower as well (20.49% of enrolled students as opposed to 21.2% in the European average) in 2010.

Research

Almost all Portuguese research indicators were below the European average between 2008 and 2011. The only exception was the percentage scientific publications within the 10% most cited science journals

[273] EUA (2012) *Public funding observatory.* URL: www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding/public-funding-observatory.aspx

worldwide[274] indicator which equaled 9.26%, roughly 0.5 points over the average in 2007. Portuguese research was comparatively less attractiveness on a European scale. There were 0.75 incoming Marie Curie scholars per million inhabitants in 2009, as opposed to 2.08 for the European on average per million inhabitants, and no recorded ERC starting grant wins per million inhabitants (recorded after the evaluation process) in 2011, while the European average was 0.77. Public and private sectors co-authors 8.7 co-publications in 2008, between the private and public sectors lower than the European average of almost 47.

The recent decade and a half has seen a major transformation in the research intensity of the country, mainly due to a persistent focus on strengthening the research basis of the Portuguese higher education system and the expectation that it would carry along the private sector as well. For example, the reforms of 2007 mentioned above also aimed to simplify the procedures related to the recruitment of foreign faculty. This drive was significant and persisted even during the first phase of the current crisis. Since 2011, the depth of the crisis and the changes in the Government have led to a weakening of that commitment. If the current cuts in science persist, they may endanger some of the advances that took place in the recent past. However, past reforms may still have an impact, for example nurturing a strong interaction between research networks and business players in Portugal. But further conclusions are necessary to draw firm conclusions about its depth and sustainability.

Economic outcomes

Economic outcomes for Portugal were below the European average. GDP per capita was around 14,600 € in 2011, 22 euros were generated per hour worked, 9 euros below the European average and 27.89% of employees were in knowledge intensive activities, more than 6 points below the European average.

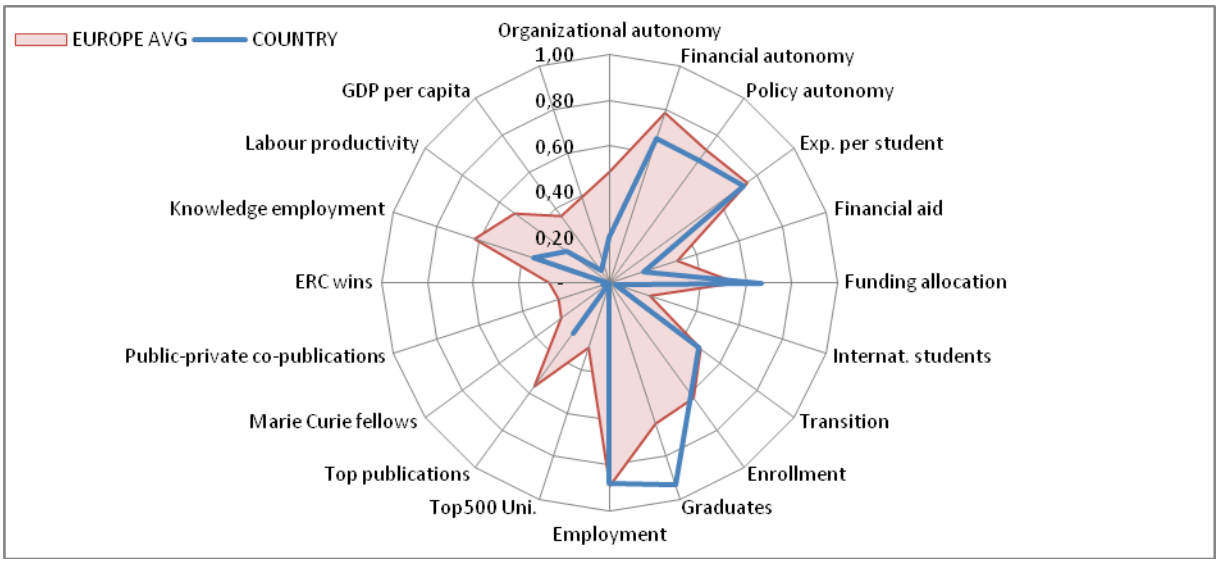
Conclusion

Current reforms triggered by the economic crisis, in addition to a reform fatigue, could negatively influence the drive for improvement of Portuguese universities of the previous decades. The Government should stress developing the potential for Portuguese research cooperation and international attractiveness.

[274] As a percentage of total publications in a country, Innovation Union Competitiveness report 2011 edition

Country Description – Romania

Statistical Presentation[275]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		1 (2,40)	2 (2,31)	2 (2,16)
		Exp. per student[276]	**Financial aid**	**Funding allocation[277]**
		36,97% (*)(38,0%)	7,89% (*)(15,9%)	66,66 (56,2)
Performance	Education	**Internat. students**	**Transition[278]**	**Enrollment**
		0,94% (5,9%)	12,5% (*) (12,7%)	34,7% (36,1%)
		Graduates	**Employment**	
		30,55% (21,2%)	82,3% (82,9%)	
	Research	**Top500 Uni.[279]**	**Top publications**	
		0 (0,34)	4,22 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		0,05 (2,080)	6,3 (46,8)	0 (0,77)
Economic Output		**Knowledge employment**	**Labour productivity**	**GDP per capita**
		19,81% (34,5%)	14PPS€ (31)PPS€)	4200€ (22963€)

[275] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[276] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[277] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[278] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[279] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

* imputed values / ( ) European Union average

Overview of position in groups[280]

Overall	**Modest**
Graduation/employment	**Top**
Research	**Modest**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employt	Size	Productiv	Attractiv	Comp	Innov
	↑		↓							

Our assessment suggests that Romanian higher education policies could improve i.e. it belongs to the more modest group. Romania had a comparatively high graduation rates, its graduate employment rate was on a par with the European average. Its its research performance was modest.

Policy

Autonomy

Romanian universities had lower levels of autonomy than the European average in 2008 according to CHEPS. The autonomy of Romanian universities is set in the Education Law no. 84/1995 of 1995[281]. Romanian universities are also able to manage the funds they receive from the State together with other sources.

Romania has 56 public universities, 35 private accredited universities, 21 provisionally authorized private universities, and 5 provisionally authorized private universities that organize only MA and post-university courses[282]. Their regulation is ensured by the University Charter whose main goals are providing the norms for the University community and establishing its rights and obligations[283].

[280] These indicators are based on standardized country statistics.
[281] Law 84/1995, republished, subsequently amended and completed
[282] Official governmental website regarding education in Romania. URL: http://www.edu.ro/index.php/articles/c108/
[283] Eurypedia: Higher Education in Romania URL: https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Romania:Higher_Education

The new Education Law no.1/January 2011 makes some amendments to the autonomy of universities, which are perceived bas reducing this autonomy by the academic community. For example, the 'national interest criterion' necessary for courses to be publicly funded is said to be prone to misuse[284].

Funding

Public funding for higher education per student was lower than the European average, with the equivalent of 36.97% of the GDP per capita spent per student. Financial aid expenditure was almost twice lower than the European average in 2008, estimated at 7.9% of the public expenditure on tertiary education (80% of the fellowships being merit-based). The Government has planned the introduction of student loan schemes to compensate for this low financial aid level through the Law on National Education nr 1/2011.

University performance and outputs

Education

Graduation rates equalled 30.6% of the enrolled student population, higher than the European average in 2010, and graduate employment was on a par with the European average in 2009 at 82.3%. But other indicators indicate a lower performance than the European average. For example, the percentage of inward mobile students was 5 points below the European average.

The current Minister responsible for education acknowledged that Romania had far more international students before the end of Communist regime in 1989 than nowadays. Since then, there have been numerous attempts to change the situation and reverse the decline as well as to make the HE system more attractive to Romanian academics currently working abroad.[285]

Finally, the high level of parental support may make higher education inequitable, with some population, like the Roma, being excluded. Families support students during their studies and the expenditure that burdens the family budget rests mainly on fees, accommodation and board. According to the Quality Barometer (QB) 2010 survey, 77% of student population is supported by parents and relatives, 25% live on their own salaries, 16% have business-generated incomes and only 20% live on scholarships (these percentages are not mutually exclusive).

Research

Romania's research performance was lower than the European average until 2011. The percentage of scientific publications in the most 10% most cited worldwide was twice lower for Romania than for other European countries. There were 0.05 Marie Curie scholars per million inhabitants in 2009 in comparison to 2.08 for the European average, and Romania had no recorded starting grant wins.

[284] Erawatch (2011) 'Romania', URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/ro/country?section=NationalPolicyDevAndEuropeanResearchArea&subsection=ResearchOrganisations

[285] Reisz, M. (2011) 'Romania calls on EUA help to split sector', in *Times Higher Education Supplement*, 7th of April, URL: http://www.timeshighereducation.co.uk/story.asp?storyCode=415696&sectioncode=26

The National Authority for Scientific Research (ANCS) develops research in order to reduce the relative large gap in research and technology development between Romania and the European average.

The Law on Education nr 1/2011 introduced two career tracks, distinguishing research from teaching in order to increase research performance[286] (until then the majority of faculty members concentrated on teaching with very weak to non-existent research activity). But the 2009 economic crisis has affected research funding. R&D funding for higher education, which had gone up from 0.04% to 0.12% of GDP from 2004 until 2008, has since then decreased to 0.11% in 2011.

Economic outcomes

Romania's economic indicators were lower than the European average, the GDP per capita amounting to 4,200€ in 2011, 14euros of GDP were produced per hour (more than 15 euros below the European average), [287] and 19.81% of employees work in knowledge intensive activities in 2009, more than 15 points below the European average. The integration of education and innovation policies in a similar Ministry, namely the Ministry of Education, Research and Innovation, may encourage synergies between higher education and economic innovation.

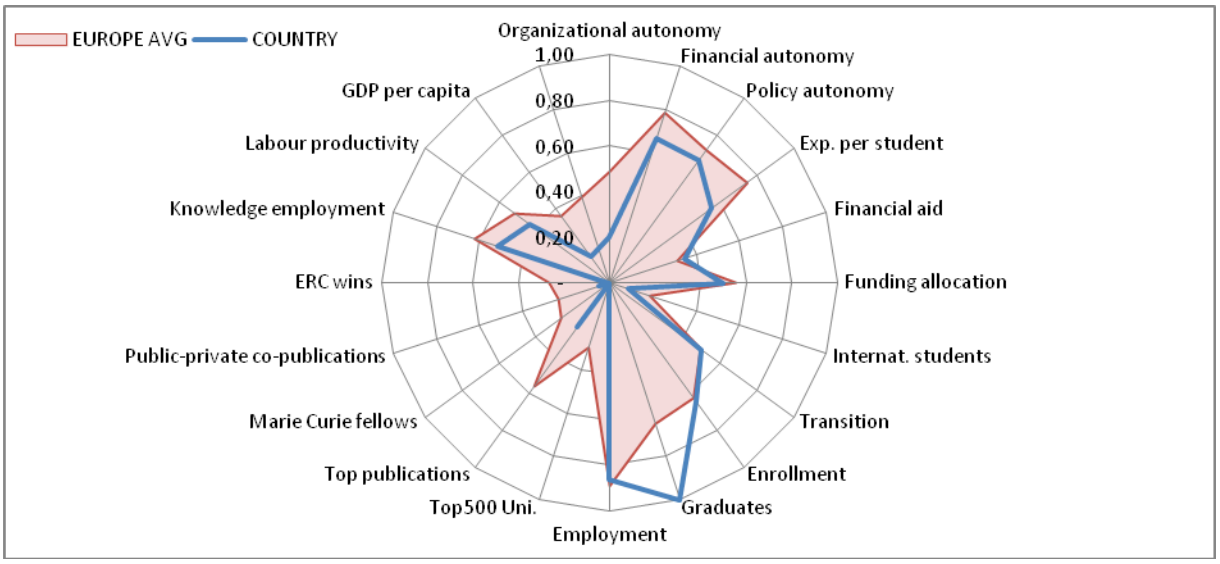
Conclusion

The Romanian higher education systems has several issues related to low levels of financial aid to students (potentially leading to equity problems), comparatively low research performance, and a low percentage of international students. The reforms implemented in 2011 have been criticized in terms of their impact to the autonomy of universities. The consequences of these reforms, in addition to reductions in funding levels, will need to be carefully evaluated.

[286] Cabuz, (2008) *Reforming Romanian higher education: the ivory tower and the entrepreneurial model*, in Ad Astra Journal 7.
[287] GDP per hour worked in PPS€, we have used data from Eurostat.

Country Description – Slovakia

Statistical Presentation[288]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		1 (2,40)	2 (2,31)	2 (2,16)
		Exp. per student[289]	**Financial aid**	**Funding allocation[290]**
		28,3% (38,0%)	17,5% (15,9%)	50,0 (56,2)
Performance	Education	**Internat. students**	**Transition[291]**	**Enrollment**
		2,7% (5,9%)	12,8% (*) (12,7%)	37,1% (36,1%)
		Graduates	**Employment**	
		32,8% (21,2%)	80,6% (82,9%)	
	Research	**Top500 Uni.[292]**	**Top publications**	
		0,00 (0,34)	3,8 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		0,00 (2,08)	10,3 (45,4)	0,00 (0,73)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[288] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[289] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[290] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[291] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[292] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	29,1% (34,5%)	26 PPS€ (31 PPS€)	9200€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[293]

Overall	**Modest**
Graduation/employment	**Top**
Research	**Modest**

Trend prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employment and Graduation	Size	Productiv	Attractiv	Comp	Innov
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Our assessment suggests that Slovakia belongs to the more modest group. The country's performance in terms of graduation and graduate employment is comparatively high. Its research performance is comparatively more modest.

Policy

Autonomy

Slovakia was significantly below the European average in organizational autonomy (1 compared to the European average of 2.40) and slightly below the European average for both financial and policy autonomy (2 compared to 2.31 and 2 compared to 2.16 respectively) in 2008 according to CHEPS. Organizational restrictions imposed by the Slovakian Government include the capacity to decide on academic structures for example. At present faculties and other academic structures are listed in the law. Universities may freely keep surplus funds and sell the buildings they own but can only borrow money up to a certain percentage[294].

Funding

The Government spent the equivalent per student of 28.3% of GDP per capita compared to 38 % in 2008. Slovakian universities are funded by block grants divided into broad cost categories. The National Strategic reference framework of the Slovak republic for 2007-2013 aims to utilize EU funds in order to improve higher education[295]. Higher education expenditure is therefore expected to increase in Slovakia

[293] These indicators are based on standardized country statistics.
[294] European University Association: University Autonomy. URL: http://www.university-autonomy.eu/countries/slovakia/.
[295] Ministry of Education of the Slovak Republic (2007), *Strategy of Lifelong Learning and Lifelong Guidance*

as a significant fraction of the EU funds received in recent years (post 2007/ 2008) will be invested in higher education[296].

17.5% of the public budget on tertiary education was spent on financial aid as opposed to 15.9% in 2008.

University performance and outputs

Education

Slovakia had higher graduation rates than the European average, 32.8% of students graduating in 2010. In addition the estimated percentage of students from non-traditional backgrounds was on a par with the European average between 2008 and 2011. This follows a decision from the Government, which accredited non-formal educational activities in 2008.

Graduate employment was lower than the European average by 2.3%, 80.6% of graduates being in employment up to three years after graduation in 2009. A Youth Action Plan aims to tackle youth employment, and the European Commission urged for its implementation in the near future[297]. The most important goals of this plan consist in improving the quality of higher education (by strengthening quality assurance and result orientation), as well as increasing the relevance of the labour market (via the introduction of an apprenticeship). And the Government could work toward improving student integration in the labour market, for example by encouraging curricula involving business cooperation

The percentage of international students was also lower than the European average in 2009 (2.7% compared to the European average of 5.9%).

Research

The research indicators of the Slovakian higher education system were below the European average. 3.8% of scientific publications were in the 10% most cited worldwide in 2007, a percentage twice lower than the European average. Slovakia had no incoming Marie Curie fellow in 2009, no starting grant winner for the ERC and no university in the top 500 according to ARWU in 2011.

The Program Declaration of the Government of the Slovak Republic committed to improving the effectiveness and quality of research as well as enhancing innovation for the years 2006 – 2010[298]. A new model of financing science and technology in the Slovak Republic reform adopted on 12 May 2010 support applied and international scientific-technical cooperation, and aims to encourage the use of Structural funds[299].

The Slovak Academy of Science also obtains structural funds of 6.43 million euros[300].

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[296] Program Declaration of the Government of the Slovak Republic, August 2006

[297] European Commission (2012), *Recommendation for a Council Recommendation on Slovakia's 2012 national reform programme and delivering a Council opinion on Slovakia's stability programme for 2012-2015.*

[298] Program Declaration of the Government of the Slovak Republic, August 2006

[299] Erawatch (2011) New Model of Financing Science and Technology in the Slovak Republic, URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/sk/policydocument/policydoc_0010

[300] Erawatch (2009) 'Slovak Academy of sciences', URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/sk/organisation/organisation_mig_0007?searchType=simple&sort=&action=search&matchesPerPage=5&orden=path&query=&displayPages=10&reverse=true&country=sk&searchPage=6&index=Erawatch+Online+EN&tab=template

Economic outcomes

Slovakia being a convergence country, its indicators of Knowledge employment, labor productivity and GDP per capita were somewhat lower than the European average (29.1% compared to 34.5% of employees in knowledge intensive activities and 26 PPS€ compared to 31 PPS€ of GDP per hour worked respectively). The GDP per capita indicator was also significantly below the European average (9200€ compared to 22963€) in 2011.

The current financial crisis has decreased Slovakian GDP levels further, while also increasing unemployment rates[301].

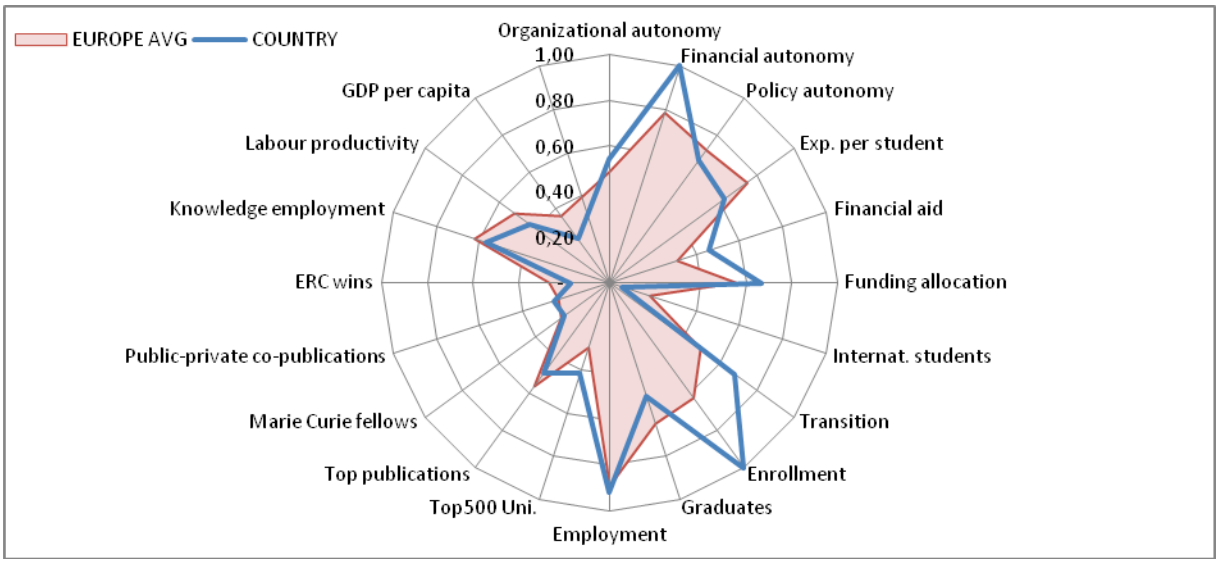
Conclusion

The overall assessment of Slovakia's university policies, performance and economic leads us to conclude that the Government could do more to empower Slovak universities. Developing Slovakia's research capacity with the continuous use of structural funds, as well as promoting the quality of educational provision and links with employers could lead to higher rates of knowledge employment as well as labor productivity to facilitate the convergence process.

[301] Palenik, M. (2012) *Youth Unemployment in Slovakia,* in *Social Europe Journal*.

Country Description – Slovenia

Statistical Presentation[302]



Policy	**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**	
	3 (*) (2,40)	3 (2,31)	2 (2,16)	
	Exp. per student[303]	**Financial aid**	**Funding allocation[304]**	
	31,7% (38,0%)	23,2% (15,9%)	66,7 (56,2)	
Performance – Education	**Internat. students**	**Transition[305]**	**Enrollment**	
	1,8% (5,9%)	15,9% (*) (12,7%)	57,5% (36,1%)	
	Graduates	**Employment**		
	17,1% (21,2%)	85,8% (82,9%)		
Performance – Research	**Top500 Uni.[306]**	**Top publications**		
	0,49 (0,34)	7,6 (8,7)		
	Marie Curie fellows	**Public-private co-publications**	**ERC wins**	
	1,99 (2,08)	51,0 (45.4)	0,49 (0,73)	
Economic Output	**Knowledge employment**	**Labour productivity**	**GDP per capita**	
	31,9% (34,5%)	26 PPS€ (31 PPS€)	15400€ (22963€)	

(*) Imputed value / ( ) European average

[302] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[303] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[304] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[305] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[306] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Overview of position in groups[307]

Overall	**Medium**
Graduation/employment	**Medium**
Research	**Medium**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employment and Graduation	Size	Productiv	Attractiv	Comp	Innov
		↓	↓	↓						

Our assessment positions Slovenian higher education policies in the middle group overall. Slovenia's research performance also places Slovenia in the middle group of European countries. Its graduate employment was above average but its graduation rates were a bit more modest.

Policy

Autonomy

Slovenia was performing above the European average on both organizational and financial autonomy (2.7[308] compared to 2.40 and 3 compared to 2.31 respectively), but slightly below the European average in terms of policy autonomy (2 compared to 2.16) according to CHEPS (2008).

The law provides guidelines for the academic structure. The legal framework that determines only the basic organisational structure and higher education institutions can decide freely on their own organisational structure and internal authority as well as their institutional leadership.

The selection criteria and procedure for the executive head are not stated in the law for example. Universities can keep surpluses for predetermined activities. Universities can also set up new programs after accreditation. The final decision for staff selection belongs to the universities, within Government guidelines for example regarding the yearly quotas of students[309]. The National Higher education

[307] These indicators are based on standardized country statistics.
[308] Rounded to 3 in our dataset.
[309] European University Association study (2009): University Autonomy in Europe I. URL: http://www.rkrs.si/gradiva/dokumenti/EUA_Autonomy_Report_Final.pdf

Programme (2011-2020) aims to relax this form of Government approval, as well as to provide greater autonomy for institutions to decide on the type and scope of work of their employees (the law will no longer administratively regulate pedagogical workload), remuneration and work duties will not be regulated by the Government.

Regarding financial autonomy, the Constitutional Court has put an obligation to the Government to prepare for a new legal framework for funding of higher education institutions, so that mechanisms of funding from public funds will be designed in a manner to enable higher education institutions' independent and stable decision-making regarding the use and integrated management of funds.

Funding

The percentage of GDP expenditure per student in Slovenia was lower than the European average (31.7% compared to 38.0%) in 2008. The percentage of expenditure on financial aid, on the other hand, was above the European average (23.2% of the public budget on tertiary education compared to 15.9%). Slovenian institutions receive a block grant that they spend according to the budget headings they submitted to the funding body.

A 2010 Act, translated as 'Intervention Step because of Economic Crisis', amended in 2011, has introduced various budget restrictions and reductions. Furthermore, the Act for Intervention Step designed in 2012 will most probably decrease higher education expenditure levels even further[310]. However, according to the European University Association, the impact of 2012 public budget cuts remains difficult to assess[311].

University performance and outputs

Education

Slovenia had comparatively high enrollment rates (57.5% of the population aged 20 in 2010 in comparison to the European average of 36.1%) but proportionally low graduation rates in comparison to enrollments in 2010 (17.1% in comparison to 21.2% for the European average).

According to Erawatch, the low graduation rate in comparison to enrollments reflects the fact that some young people enroll at universities 'to take advantage of the benefits of being a student'[312]. Slovenian students benefit from a free access and universal grant scheme. The low level of international attractiveness (1.8% of incoming students compared to the European average of 5.9%) may also suggest that the quality of education in Slovenia needs to be improved.

The Slovenian government is planning on further facilitating the increase the proportion of foreign students to 10% by 2020, as stated in the new draft of the Higher Education Master Plan[313] (percentage of international students which has admittedly doubled over the past five years). The Governments

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Republic of Slovenia Stability Programme (2011). URL: http://ec.europa.eu/europe2020/pdf/nrp/sp_slovenia_en.pdf

[311] EUA (2012) *Public funding observatory*. URL: http://www.eua.be/Libraries/Governance_Autonomy_Funding/June_2012_report_FINAL.sflb.ashx

[312] Erawatch (the European Commission's information platform on European, national and regional research systems and policies). URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/si/country?section=ResearchPerformers&subsection=HigherEducationInstitutions

[313] According to Eurypedia, Higher Education in Slovenia.

aims to increase quality-based funding measures as well as the implementation of a more internationally comparable degree structure[314].

The aforementioned plan also aims to improve the collaboration between academic institutions and the economic as well as the non-commercial sectors, which would potentially increase already above average graduate employment rates[315].

The Government funding formula includes a performance in its "lump sum" funding which will create opportunities for achieving more efficiency behaviour of higher education institutions regarding discrepancy between high enrolment and low graduation rate.

Research

Slovenia's research performance is in line with the European average and praiseworthy given the transition period that the country had to face over the past twenty years.

The University of Ljubjana ranked in the top500 universities according to the ARWU ranking of 2011. 7.6% of scientific publications were among the top 10% most cited worldwide in 2007, close to the European average of 8. 7%. Slovenia had two incoming Marie Curie fellows per million inhabitants in 2009 (close to the European average of 2.08) and it had 0.49 European Research Council starting grant winners per million inhabitants in 2011, also close to the European average of 0.73. Slovenia also had higher public private co-publications than the European average in 2008, 51 compared to 45.4. Some of this research output may also come from Slovenia's fifteen research institutes.

Higher education institutions are treated as any other public research unit and therefore they apply for research funds through public calls for research programmes/projects at the Slovenian Research Agency. Such a system leads to a competitive allocation of research funds[316].

The funding of research has increased between 2002 and 2010 (from 0.19% of GDP to higher education institutions) to 0.22% in 2010, with a 0.01% reduction estimated for 2011 according to Eurostat. The relationships and collaboration between higher education institutions and research institutions will be fostered as stated in the aforementioned Master Plan [317]. Finally, in recent years there has been an increasing trend of using promotion criteria to reward highly performing researchers[318].

[314] Ministry of Higher Education and Technology (2011) *Higher Education in Slovenia*, Ljubljana: Centre of the Republic of Slovenia for Mobility and European Educational and Training Programmes.
[315] According to Eurypedia, Higher Education in Slovenia.
[316] Erawatch (the European Commission's information platform on European, national and regional research systems and policies). URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/si/country?section=ResearchPerformers&subsection=HigherEducationInstitutions
[317] Eurypedia, Higher Education in Slovenia.
[318] Erawatch (the European Commission's information platform on European, national and regional research systems and policies). URL: http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/si/country?section=ResearchPerformers&subsection=HigherEducationInstitutions

Economic outcomes

Slovenia's GDP per capita was 15,400 euros in 2011, compared to 22,963 euros for the European average. 26 euros were produced per hour worked and 31.9% of employees were in a knowledge intensive activity in 2009. Until March 2012, Slovenia had an organizational integration of higher education and innovation in the Ministry of Higher Education, Science and Technology, which could have helped to develop synergies between higher education and innovation.

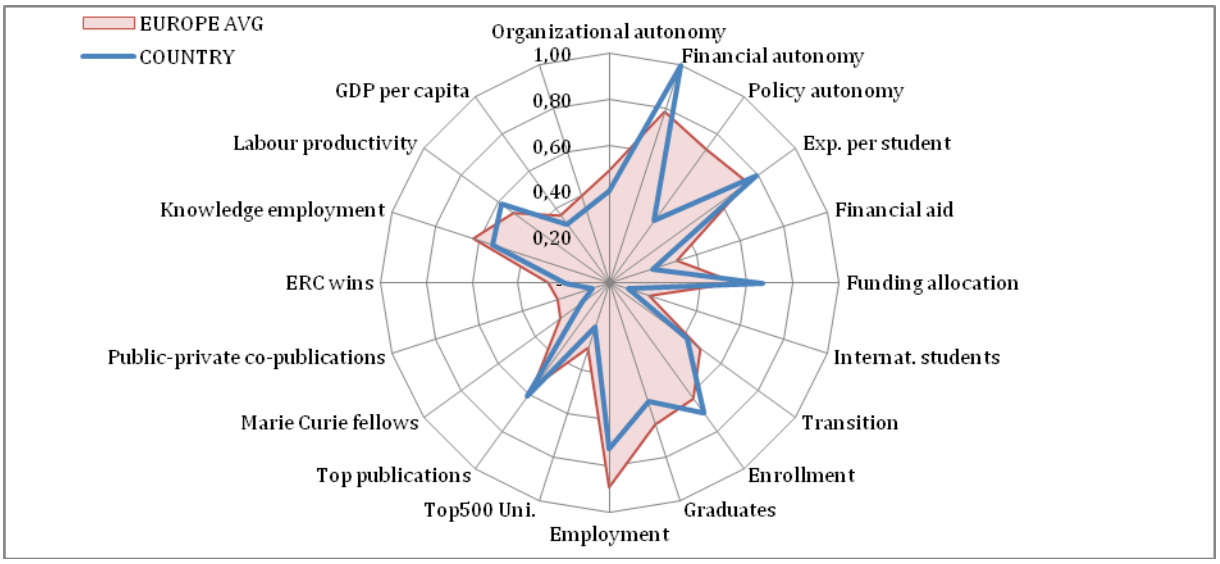
Conclusion

Slovenia's university policies were overall on par with the European average, with comparable research performance to the European average and appropriate levels of university autonomy. The Government could continue to address the issues of graduation rates as well as increasing Slovenia's international attractiveness to students. The intervention acts undertaken in 2011 and 2012 due to the economic crisis might, however, decrease the overall score as cuts in the funding of public higher education expenditure have occurred and further evaluation is required to understand the impact of these cuts on the higher education landscape.

Despite the high overall score, Slovenia has room for improvement particularly in terms of research, graduation rates and international openness to students, which could increase labor productivity, knowledge employment and the overall economic outlook of the country.

Country Description – Spain

Statistical Presentation[319]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		2 (2,40)	3 (2,31)	1 (2,16)
		Exp. per student[320]	**Financial aid**	**Funding allocation[321]**
		40,3% (38,0%)	9,9% (15,9%)	66,7 (56,2)
Performance	Education	**Internat. students**	**Transition[322]**	**Enrollment**
		2,7% (5,9%)	10,0% (12,7 %)	40,3% (36,1%)
		% Graduates over enrollment	**% Employment rate**	
		17,9% (21,2%)	67,9% (82,9%)	
	Research	**Top500 Uni.[323]**	**Top publications**	
		0,24 (0,34)	9,5 (8,7)	
		Marie Curie grant holders	**Public-private co-publications**	**ERC wins**
		1,26 (2,080)	15,9 (46,8)	0,54 (0,77)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[319] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources

[320] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[321] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[322] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[323] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	30,3% (34,5%)	35 PPS€ (31 PPS€)	20600€ (22963€)

( ) European Union average

Overview of position in groups[324]

Overall	**Medium**
Graduation/employment	**Modest**
Research	**Medium**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employt	Size	Productiv	Attractiv	Comp	Innov
→	↓	↓	↓	↑	↑	↑	→	↑	→	→

Our assessment places Spain in the middle group. Spain's graduation and graduate employment performance and research performance are more modest.

Policy

Autonomy

Spanish universities had less policy and organizational autonomy than the European average, a determinant of educational quality. But Spanish universities had comparatively more financial autonomy than the European average according to CHEPS (2008). For example, universities must negotiate the number of enrolled students and admission criteria with an external authority, and the Government stipulates that the executive head must come from within the university. But there are no restrictions on how universities use the block grants they receive from the Government, and universities can sell buildings without restrictions[325].

Nevertheless, several changes have occurred in Spain since the beginning of the economic crisis. These reforms are more centered around funding than autonomy. But they affect the university management, for example through the reduction of staff, and force institutions to rethink their strategic plans.

[324] These indicators are based on standardized country statistics.

[325] For more information, see European University Association (2012) 'Autonomy tool', URL: http://www.university-autonomy.eu/countries/spain/

Funding

The Government spent the per student equivalent of 40.3% of GDP per capita was over the European average in 2008. Expenditure on financial aid was lower than the European average, covering 9.9% of the public budget for tertiary education (almost 5 points below the average of the European countries). Spanish universities had a decrease in public funding of more than 10% in comparison to 2010 according to the European University Association[326].

The Spanish Government has recently approved a set of laws[327] due to the economic downturn. These include planned reductions of staff, infrastructures and research funds as well as lower investments in grants and loans. A recent decree[328] has increased student fees. This increase compensate for the reduction of public funds instead of providing more resources to universities because the public incomes will be reduced by the same amount. This situation is very likely to continue in the coming years.

University performance and outputs

Education

Despite higher than average enrollment rates, Spain has a comparatively low graduation rate (the equivalent of 17.9% of enrolled students graduated in 2010) and much lower graduate employment levels than the European average. 67.9% of graduates were in employment three years or less after graduation in 2009 (around 15 points below the European average), which could reflect a social problem related to the integration of young people in society.

Spain attracted 2.69% international students, below the European averages of 5.9% in 2009. Spain also has a lower level of students from non-traditional backgrounds than the European average (10% compared to 12.7%).

Research

Almost all the Spanish research indicators were below the average. The only exception are scientific publications: 9.52% of its scientific publications were among the 10% most cited science journals worldwide, 1 percentage point over the European average.

However, Spain attracted 1.26 Marie Curie fellow annually per million inhabitants in 2009 as opposed to around 2 per million inhabitants for the Europe on average, and had 0.54 ERC starting grant wins per million inhabitants in 2011, which is lower than the European average of 0.77. Spain also had a lower proportion of universities in the top 500 according to the ARWU ranking in comparison to its population than the European average.

[326] EUA (2010) *Public funding observatory.* URL: www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding/public-funding-observatory.aspx

[327] Universities Act 4/2007 of 12 April (BOE 13/04/2007); Royal Decree 1393/2007 of 29 October, establishing the organization of university teaching programs; Royal Decree 1313/2007 of 5 October, regulating the system of selection of faculty (BOE 08/10/2007; Royal Decree 99/2011 of 28 January, which regulates the doctorate;Royal Decree-Law 14/2012 of 20 April, on urgent measures to rationalize public spending in education

[328] Royal Decree-Law 14/2012 of 20 April, on urgent measures to rationalize public spending in education

The lack of research performance is coupled with a tendency for Spanish researchers to emigrate. Estimates point to a 76% probability for junior researchers to migrate during 2013[329], a probability which would increase by 14 points in 2012, and which constitutes a significant risk factor regarding the ability of Spanish universities to develop competitive research.

The Spanish university system, which includes 73 universities, was also concentrated on increasing the offer to a wider range of the population, rather than in targeting excellence / performance. Limitations regarding the ability of universities to specialize in a given field may for example impinge on the research excellence of Spanish universities.

Economic outcomes

Spanish labour productivity was higher than the European average, with 35 euros of GDP per capita per hour worked in 2010, 4 points over the European average. But a lower than average proportion of employees were in knowledge intensive activities, namely 30.3%, 4.2 percentage points below average.

According to the OECD, 44% of Spanish university graduates between 25 and 29 years old are employed in jobs requiring lower skill levels than they possess, in contrast with the 23% average of OECD countries[330]. A better coordination between universities and businesses could balance the supply of graduates according to labour market's demands and raise GDP per capita (in 2011 set at 20,600 euros). The integration of higher education and innovation policies in the Ministry of science and innovation could also encourage synergies between higher education and innovation.

Conclusion

The set of laws and regulations recently approved mainly concentrate on the cost-effectiveness of the current higher education system in Spain as a result of the economic crisis. Most of the decisions (which mainly evolved around spending cuts) will most certainly play a major role in shaping the landscape of Spanish higher education in the upcoming years (or even months).

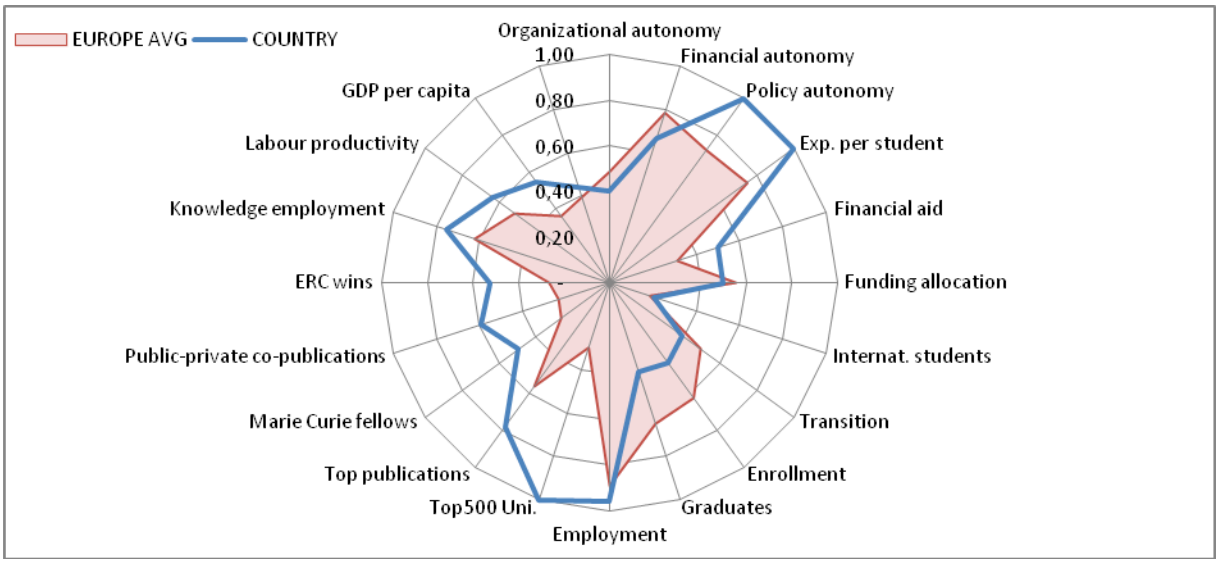
Higher education institutions are required to maintain (if not improve) the education level while having fewer resources. Research is also affected by all the experienced cost reductions, leading to a migration of some of the strongest researchers in search for funds to complete their work.

The significantly low rate of graduate employment level is likely to remain at this level in the next years. No short-term policy has been planned to stimulate the job market. The Government could set up targeted and incentives measures to develop ties between universities and businesses and integrate labour market cooperation in university education.

[329] 7th INNOVACEF Report. Data from Centro de Estudios Financieros (CEF) and Universidad a Distancia de Madrid (UDIMA)
[330] OCDE. URL: http://www.oecd.org/about/secretary-general/spainafterthecrisisanewgrowthmodel.htm

Country Description – Sweden

Statistical Presentation[331]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		2 (2,40)	2 (2,31)	3 (2,16)
		Exp. per student[332]	**Financial aid**	**Funding allocation[333]**
		50,9% (38,0%)	25,4% (15,9%)	50 (56,2)
Performance	Education	**Internat. students**	**Transition[334]**	**Enrollment**
		6,4% (5,9%)	29% (*) (12,7%)	24,8% (36,1%)
		Graduates	**Employment**	
		13,45% (21,2%)	89,5% (82,9%)	
	Research	**Top500 Uni.[335]**	**Top publications**	
		1,17 (0,34)	12,19 (8,7)	
		Marie Curie fellows	**Public private co-publications**	**ERC wins**
		4,03 (2,08)	117,3 (46,8)	1,49 (0,77)
Economic Output		**Knowledge employment**	**Labour productivity**	**GDP per capita**
		42,27% (34,5%)	38 PPS€ (31 PPS€)	35600€ (22963€)

[331] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[332] Total public expenditure per student in tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities. Source: OECD at a glance (2008); WorldDataBank (2006 and2008)

[333] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[334] Students entering higher education through an alternative route by type of route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain type of education and post-secondary (non-tertiary) education. Eurostudent (2011)

[335] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

(*) Imputed value / ( ) European average

Overview of position in groups[336]

Overall	**Top**
Graduation/employment	**Medium**
Research	**Top**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employment and graduation	Size	Productiv	Attractiv	Comp	Innov
↑	→	→	↑							

Our assessment suggests that Swedish university policies belong to the highest performing group, with a matching research performance, and a more average performance in terms of graduation rates.

Policy

Autonomy

Swedish universities had a comparatively high level of policy autonomy according to CHEPS in 2008. Swedish universities can decide on their curricula, staff recruitment and dismissal, but admission criteria are co-regulated between the university and an external body. Swedish universities have comparatively more constraints in terms of organizational and financial autonomy. Legal guidelines regulate the academic structure, and the Government provides criteria for the executive head (who must hold a doctoral degree). Universities are not allowed to own their own buildings, and can only borrow money from specific banks[337].

Autonomy was the subject of a proposal for reform in 2009, but the Government only introduced a fraction of this proposal, even if it was positively received by the sector. This reform allowed among others universities to choose members of the University board. Swedish universities changed their status to autonomous organizations under public regulation.

[336] These indicators are based on standardized country statistics.

[337] For more information, see EUA (2012) 'Autonomy tool': http://www.university-autonomy.eu/countries/sweden/

Funding

Swedish universities had the highest level of public financing per student as a percentage of GDP per capita (50.9%) in 2008, and the highest proportion of public funding for tertiary education going to financial aid to students (25.4% in 2008). Student financial aid includes a grant and a loan.

The public budget has increased since 2008 according to the European University Association[338]. Funding is allocated by subject area[339], depending on the number of registered students and the graduation rate of students. The budget allocation for education in humanities and social sciences increased further in Autumn 2011. Financing for research increased but was available to large research universities. At the same time, smaller more applied universities got the possibility to apply for more focus subject areas for PhD education and research, and with only a limited amount of funds dedicated to applied research. University performance and outputs

Education

Swedish universities have higher levels of graduate employment rates than the European average. 89.5% of graduates were employed three years after graduation in 2009. But Swedish universities also have a lower graduation rate than the European average, the equivalent of 13.5% of the population of enrolled students graduating in a given year.

The economy actually has a shortage of an additional 170,000 educated individuals in Sweden, notably in the health sector and school teaching.

Average enrollment levels of the population aged 20 are also comparatively low (24.8% while the European average in 36.1%), even if universities are open and accessible to all.

Sweden had a higher percentage of students from non-traditional backgrounds and international students than the European average, 6.4% of students being international in 2009. The adoption of tuition fees for non-Swedish students in 2011 may however affect the international attractiveness of Sweden.

Research

Sweden's research performance is very high. Sweden has twice the amount of Marie Curie grant holders and ERC starting grant winners per million inhabitants than the European average in 2011. 12.2% of its scientific publications were among the 10% most cited worldwide, compared to 8.7% on average in Europe in 2007. Sweden had more than twice the number of public-private co-publications of the European average in 2008, the product of policies introduced to facilitate cooperation with businesses.

The reforms of research funding have favoured large research universities. But there is still a need for researchers in order to leverage Sweden's research capacity.

[338] EUA (2012) *Public funding observatory*. URL: http://www.eua.be/eua-work-and-policy-area/governance-autonomy-and-funding/public-funding-observatory.aspx

[339] Ranging from 5,243 euros for humanities and social sciences to 59,810 euros for media studies (exchange rate of the 12th of October 2012, 1 swedish krona = 0.11 euros.

Economic outcomes

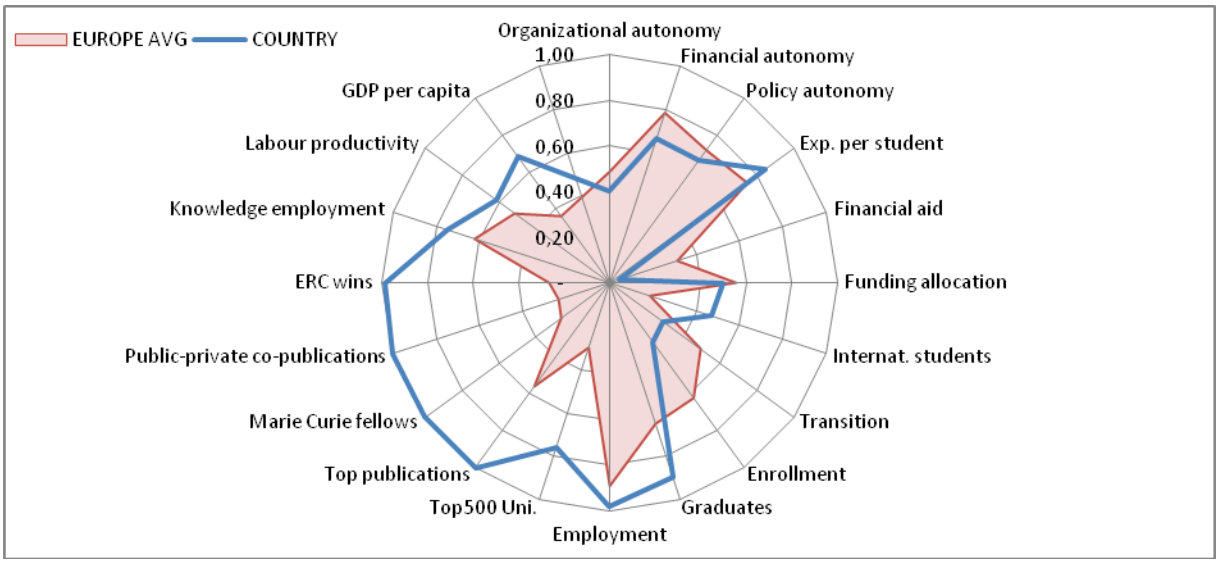
Sweden has high economic outputs. Sweden had 35,600 euros of GDP per capita in 2011, in comparison to 22963 euros on average in Europe. 42.3% of its employees worked in knowledge intensive industries (compared to 34.5% on average in Europe), 38 euros were generated per hour worked (compared to 31 euros on average in Europe). The Ministry of Education and Science decides of innovation policy in coordination with the Ministry of Industry, Employment and Communications.

Conclusion

In conclusion, Swedish universities have benefited from high levels of public funding, and suitable levels of policy autonomy. These reforms, related to a comparatively high research performance and graduate employment, promote the context of a highly performing economy. This context leads to a positive forecast for Swedish Universities.

Country Description – Switzerland

Statistical Presentation[340]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		2 (2,40)	2 (2,31)	2 (2,16)
		Exp. per student[341]	**Financial aid**	**Funding allocation[342]**
		43,0% (38,0%)	2,2% (15,9%)	50,0 (56,2)
Performance	Education	**Internat. students**	**Transition[343]**	**Enrollment**
		14,9% (5,9%)	7,0% (12,7%)	18,7% (36,1%)
		Graduates	**Employment**	
		29,4% (21,2%)	91,8% (82,9%)	
	Research	**Top500 Uni.[344]**	**Top publications**	
		0,89 (0,34)	15,6 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		8,16 (2,08)	198,5 (45,4)	2,79 (0,73)
Economic		**Knowledge employment**	**Labour productivity**	**GDP per capita**

[340] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[341] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[342] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[343] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[344] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Output	42,0% (34,5%)	37 PPS€ (31 PPS€)	44600€ (22963€)

(*) Imputed value / ( ) European average

Overview of position in groups[345]

Overall	**Modest**
Graduation/employment	**Top**
Research	**Top**

Trends prediction

Policy					Performance				Economic output	
Govern	Funding			System	Education		Research			
Autonomy	Research	Education	Access	Fundmix	Employt	Size	Productiv	Attractiv	Comp	Innov
⇩	⇧	⇨								

Our assessment suggests that Switzerland belongs to the top group in terms of research, graduation rate and graduate employment. Yet, the overall assessment of Switzerland is a bit more modest. This may be because part of the Swiss Government policies, for example the percentage allocated on financial aid, is comparatively lower than the European average.

Policy

Autonomy

Swiss universities were somewhat in line with the average score in university autonomy according to CHEPS in 2008 (2 compared to the European average of 2.40 for organization autonomy, 2 compared to 2.31 for financial autonomy and 2 compared to 2. 61 on policy autonomy).

There may be some variations across cantons and across cantonal and federal institutions. The federal authorities regulate the two federal institutions and provide funds to the cantonal universities but do not interfere at all in the composition of their councils.

Swiss institutions have a large autonomy over staffing polices, including recruitments, salaries and promotions of both teaching and non-teaching staff but some restrictions apply for dismissal and student admissions are regulated.

Most of the universities receive free allocation of block funding from federal institutions where they can set short-term financial goals. Swiss universities (except the federal universities) are not allowed to

[345] These indicators are based on standardized country statistics.

borrow from the financial markets or receive grants from private co-operations, and can only sell their properties with external approval from the central government[346].

Swiss universities are submitted to an iterative quality evaluation process for their educational program with internal and external review supervised by a central federal Accreditation Institute.

Funding

The Swiss Government country spent an estimated equivalent of 43% of its Gross Domestic Product (GDP) per capita per students in 2008 and the equivalent of 2% of its public expenditure on tertiary education on financial aid.

All Swiss institutions have applied very low fees for decades. Any attempt to increase the fees has been politically blocked. Student grants are presently attributed on a cantonal basis with large intercantonal differences. An intercantonal agreement is being negotiated to set common standards for means-tested support to students but has not yet been reached[347].

University performance

Education

In parallel to the relatively low investment in student financial aid, enrollment figures are comparatively lower than the European average at 18.7% of the population aged 20 years old (compared to 36.1% on average in Europe). The percentage of students entering higher education from non-traditional backgrounds was also lower than the European average at 7% in 2008-2011.

Swiss universities have some of the highest percentages of international students, graduation and graduate employment rates. About 15% students are international, three times more than the European average in 2009. The employment rate of graduates was close to 9 percent higher than the European average in 2009 and graduation rates proportionally to enrolled students eight points above the European average.

Swiss universities require a cantonal or federal maturity certificate to admit students at university, which could be considered a hallmark of Swiss higher education.

Research

Swiss universities also attract significant grants from research-sponsored institutions such as Marie Curie and European Research Council (ERC) as the country scores considerably high over the European average. Swiss universities had four times more Marie Curie fellows per million inhabitants than the European average in 2009. Swiss universities have 198.5 public private co-publications and 15.6 % of its scientific publications were among the 10% of most cited publications worldwide in 2008 and 2007 respectively. Switzerland also had a high number of universities in the top 50 ARWU ranking proportionally to its population size.

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[339] European University Association (2012) 'University autonomy tool'. URL: http://www.university-autonomy-edu/countries/switzerland/

[347] OECD (2009) *Economic survey of Switzerland: raising education further*.URL: http://www.oecd.org/education/labourmarketshumancapitalandinequality/economicsurveyofswitzerland2009raisingeducationoutcomes.htm

Switzerland performs considerably higher than other European countries. The federal government supports Swiss universities with research grants to undertake scientific and other research.

Economic outcomes

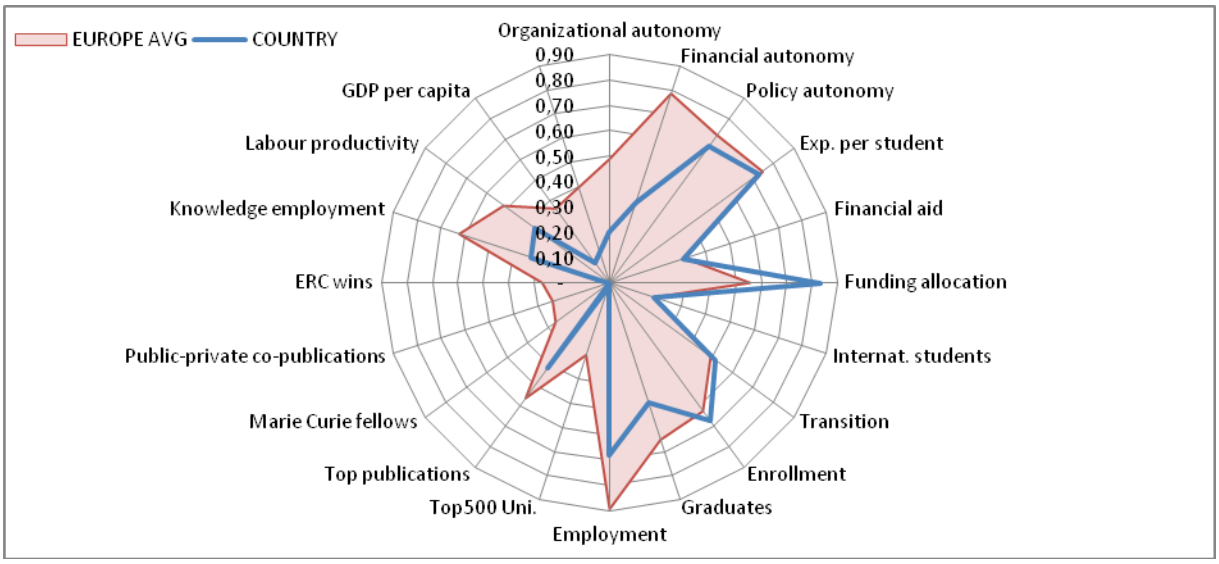
Switzerland has a strong economy, with 44600 euros of GDP per capita in 2011 (the European average was 22693 euros), 37 euros of GDP generated per hour worked and 42% of the population in a knowledge intensive activity in 2009 (compared to 34.5% in Europe).

Conclusion

Switzerland has a very strong economy. The high proportion of graduates and graduate employment, as well as strong research productivity and attractiveness, contribute to Switzerland's strong economic outlook. The Swiss Government could increase the performance of higher education further by encouraging the conclusion of the intercantonal agreement and promoting financial aid measures to higher education.

Country Description – Turkey

Statistical Presentation[348]



Policy	**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
	1 (2,40)	1 (2,31)	2 (2,16)
	Exp. per student[349]	**Financial aid**	**Funding allocation[350]**
	37,1% (*) (38,0%)	15,5% (*) (15,9%)	83,3 (56,2)
Performance – Education	**Internat. students**	**Transition[351]**	**Enrollment**
	5,9% (*) (5,9%)	13,1% (*) (12,7 %)	38,8% (36,1%)
	Graduates	**Employment**	
	16,2% (21,2%)	63,8% (82,9%)	
Performance – Research	**Top500 Uni.[352]**	**Top publications**	
	0,01 (0,34)	6,5 (8,7)	
	Marie Curie fellows	**Public-private co-publications**	**ERC wins**
	0,01 (2,08)	1,7 (45,4)	0,00 (0,73)
Economic Output	**Knowledge employment**	**Labour productivity**	**GDP per capita**
	18,4% (34,5%)	22 PPS€ (*)(31 PPS€)	6300€ (22963€)

(*) Imputed value / ( ) European average

[348] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[2] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008)

[3] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[4] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011)

[5] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Overview of position in groups[353]

Overall	**Modest**
Graduation/employment	**Modest**
Research	**Modest**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employment and graduation	Size	Productiv	Attractiv	Comp	Innov
↓	↑	→	↑	↓	→	↑	→	↓	↓	↓

Our assessment suggests that Turkey could improve:it belongs to the more modest group. This assessment is reflected in Turkey's research and graduation and graduate employment performances.

Policy

Autonomy

Turkish universities fared lower than the European average in autonomy according to CHEPS (2008), with scores of 1 in organizational autonomy, 1 in financial autonomy and 2 in policy autonomy. Universities in Turkey are mostly public institutions under centralized state control [354], even if private universities have increased since 1997. The Government stipulates the formation of the governing bodies, the recruitment of faculties and the various disciplines in universities for example[355].

Universities are limited in their decisions regarding academic structures. The Government imposes restrictions on the selection of the executive head, who must for example hold a doctoral degree. The 2012 draft law of higher education proposed that the selection of candidates and appointment of the rector in public universities be carried out by a University Council composed of academics. The University Council will exist only in institutionalized universities. Universities are institutionalized if they are established for at least 10 years, have enrolled students, as well as academic staff, fulfill criteria of research and financial performance etc. The universities which do not meet the criteria will be subject to the previous system for rector appointments, which relies on external validation.

[353] These indicators are based on standardized country statistics.

[354] Mizikaci, F. (2010) *Isomorphic and diverse institutions among Turkish foundation* universities, in *Education and Science,* 25(157).

[355] European University Association(2009): *University Autonomy in Europe I* URL: http://www.rkrs.si/gradiva/dokumenti/EUA_Autonomy_Report_Final.pdf

[7] Eriş, A. and Durman, M. (2011), Quality Assurance Activities in Turkish universities. URL: http://www.intconfhighered.org/ICHE%20Presentation%20by%20A%20EriFE%20&%20M%20Durman-Bilkent-17%2006%202011%20edited.pdf

The Government has also announced reforms the creation of an Inter-University Coordination Board (UAK) to coordinate programs between universities[356].
Turkish universities have restricted financial autonomy. They cannot decide on budgetary allocations, need permission to keep surpluses, cannot raise or borrow money, but may receive donations in the form of buildings. In this case, any building donated to Turkey Universities becomes State property. Turkish universities' accounts are also audited by a governmental auditing agency.
Turkish Higher Education has also seen a series of quality assurance activities and reforms since the Bologna Process. Turkish universities have however acquired the right to carry out independent recruitment according to the European University Association, even if the number of positions is regulated.

The Turkish Government is also planning a new higher education law concentrating on various aspects of higher education, including governance. This proposal is currently under consultation with stakeholders. Changes resulting from changes from the Turkish government are more prominent in new universities, for example in smaller cities such as Anatolia.

Funding

The Government spent per student an estimated 37.1% of GDP per capita in 2008, lower than the European average of 38%. Funding per student has been decreasing since 2008[357].
Overall, the actual budget of a public higher education institution is made up of three main sources of income: the state subsidy, self-generated income sources (research fund), and student fees, as defined by the *Law on Higher Education* (YÖK, 1981). The Government abolished student fees in 2012, leaving universities with two main income sources: revolving fund which provides universities about 30% -%40 of their income and the rest is state subsidy. The itemized budget system of higher education (for public universities) gained flexibility with the enactment of an analytical budget classification in 2003.
The Government also spent an estimated 15% of the public budget for tertiary education on financial aid. Support to students include for example one or two years of financial support to promote cross-university mobility under the Farabi program, launched in 2009.

University performance and outputs

Education

Turkish Universities have a comparatively high enrollment rate. 38.8% of the population aged 20 was in an ISCED 5-6 course in 2010, higher than the European average of 36.1%. But Turkish universities produce lower than average graduation rates, with 16.2% graduates in 2010, compared to the European average of 21.2%. This low graduation rate may reflect the levels of selectivity of some Turkish universities.
Moreover, Turkey had a comparatively low level of graduate employment. 63.8% of graduates were employed three years or less after graduation in 2009, almost 20% below the European average.

[356] For more information, see: http://www.esu-online.org/news/article/6001/257/
[357] www.eğitimsen.org.tr and www.osym.gov.tr

Research

All research indicators were below European average in terms of research. 6.5% of Turkey's scientific publications were in the 10% most cited worldwide in 2007. 0.7 publications were co-authored between the public and the private sectors in 2008 (compared to the European average of 45.4%), the lowest number of co-publications in Europe. Turkey had no registered ERC starting grant winners and 0.01 incoming Marie Curie fellow per million inhabitants in 2009.

Economic outcomes

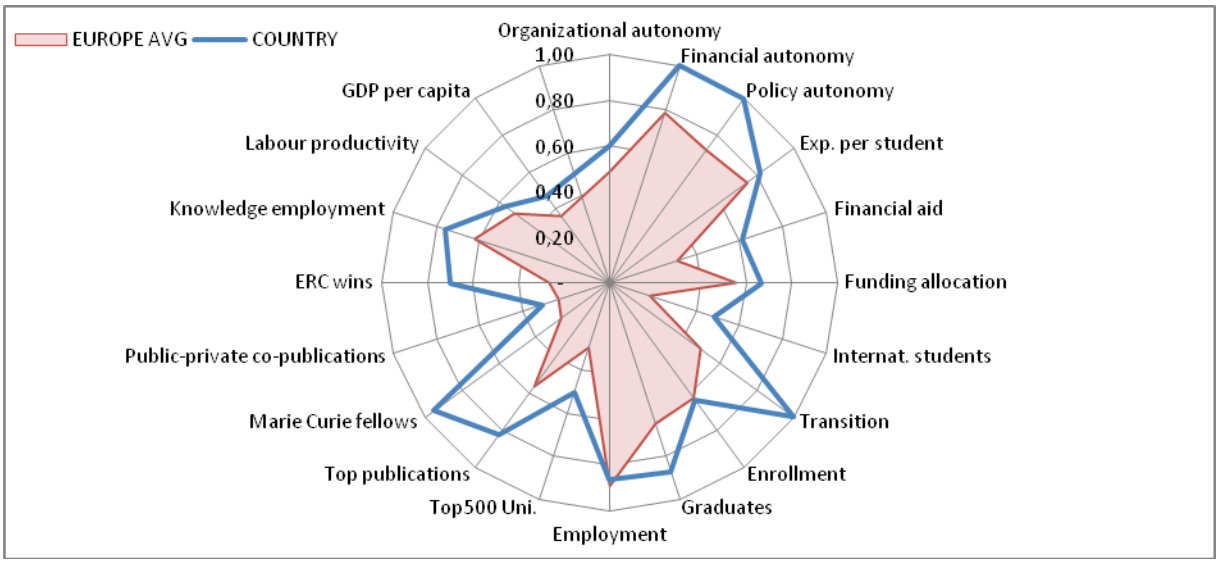
The economic output indicators of Turkey were below European average. 18.4% of employees were in knowledge intensive activities in comparison to the European average of 34.5% in 2009. 22 € were generated per hour worked, 9 euros lower than the European average of 31 PPS€. Turkey had a relatively low GDP of 6300€ as compared to the European average of 22963€ in 2011.

Conclusion

Turkish universities are generally restricted by law in a number of ways. Increasing the autonomy of Turkish universities could boost its performance, especially in research, graduation rates and employment. The planned legislative proposal illustrates a Governmental willingness to support the performance of higher education. Moreover, the Government could encourage the development of stronger ties between universities and the labour market, in order to increase graduate employment as well as collaborative research between public and private sectors in order to diffuse innovation.

Country Description – UK

Statistical Presentation[358]



Policy		**Organizational autonomy**	**Financial autonomy**	**Policy autonomy**
		3 (2,40)	3 (2,31)	3 (2,16)
		Exp. per student[359]	**Financial aid**	**Funding allocation[360]**
		41,6% (38,0%)	31,2% (15,9%)	66,7 (56,2)
Performance	Education	**Internat. students**	**Transition[361]**	**Enrollment**
		15,3% (5,9%)	24,0% (12,7%)	36,5% (36,1%)
		Graduates	**Employment**	
		28,6% (21,2%)	80,7% (82,9%)	
	Research	**Top500 Uni.[362]**	**Top publications**	
		0,59 (0,34)	12,8 (8,7)	
		Marie Curie fellows	**Public-private co-publications**	**ERC wins**
		7,80 (2,08)	61,7 (45,4)	1,98 (0,73)
Economic Output		**Knowledge employment**	**Labour productivity**	**GDP per capita**
		42,8% (34,5%)	34 PPS€ (31 PPS€)	30600€ (22963€)

(*) Imputed value / ( ) European average

[358] The data in this graph are normalized to a maximum of 1, considering the maximum value of the indicator among the 32 countries analyzed. The graph allows readers to compare their countries' performance across indicators in comparison to the European average as well as other countries. The indicators are more fully explained in the Technical Report, as well as sources.

[359] Total public expenditure per student on tertiary education as a percentage of GDP per capita. Public expenditure includes government spending on educational institutions, education administration as well as subsidies for private entities, OECD (2008) and WorldDataBank (2006 and 2008).

[360] Importance of formulas and contracts in the allocation of public funding on a scale from 0 to 100, CHEPS (2008).

[361] Students entering higher education through an alternative route. The alternatives routes are vocational training, work experience, accreditation of prior learning, aptitude/entrance examination for certain types of education and post-secondary (non-tertiary) education. Eurostudent (2011).

[362] Number of universities ranked in the top 500 divided by population (in millions) of the country. Academic Ranking of World Universities (2011).

Overview of position in groups[363]

Overall	**Top**
Graduation/employment	**Medium**
Research	**Top**

Trends prediction

Policy					Performance				Economic output	
Govern	**Funding**			**System**	**Education**		**Research**			
Autonomy	Research	Education	Access	Fundmix	Employt	Size	Productiv	Attractiv	Comp	Innov
↓	↓	→	↓	↓						

Our assessment suggests that England[364] belongs to the highest performing group. The country's research and graduation rates are high.

Policy

Autonomy

University autonomy in England was higher than the European average according to CHEPS in 2008 (3 compared to the European average of 2.40 for organization autonomy, 3 compared to 2.31 for financial autonomy and 3 compared to 2.16 for policy autonomy). Universities in England own their own assets and can decide on their own programmes, recruit their own staff. Universities have the right to award degrees being monitored by the Privy Council, albeit "lightly" given that many universities have acquired these rights a long time ago. This does not suggest that British universities are fully independent from the Government. The integration of vocational institutions polytechnics into the university system in 1992 increased the role of the Government in accreditation. The articles of government of these post-1992 institutions had to be approved by the Government.

The Government also exercises control by regulating the number of admitted students, capping university fees and tying public financing to an assessment of research performance with targeted indicators in the research excellence framework. The lift on the cap on recruiting students with top A-level grades, i.e. two A's and a B, is a way to maintain the quality of educational outcomes from higher education but is also likely to favor a concentration of resources (through fees) around the top institutions. According to the Higher Education Funding Council, 34 institutions (26%) are estimated to

[363] These indicators are based on standardized country statistics.

[364] Please note that higher education is a devolved competency in the UK. Our statistical data refers to the UK as a whole, but most of the reforms mentioned may apply more specifically to the UK.

have a 10% or greater drop in student numbers for 2012-2013 compared with 2011-2012, and in some cases it could be over 12%[365].

Funding

The Government expenditure on higher education was greater than the European average with 41.6% of expenditure per student as a percentage of GDP per capita in 2008. Reductions in direct Government funding announced in 2010 and the increase in reliance on student funding ought in theory to limit government intervention. The Government announced real terms reductions in capital funding[366] for both research and teaching of 56.52% in research and 45.51% in teaching. Those reductions were introduced in 2010 alongside increases in student fees which were used as a replacement source of higher education funding. Those changes are forecasted to lead to a reduction in the total funding for higher education by 4.15% according to the Government between 2010 and 2012[367].

Income-contingent public loans and maintenance grants from the Department for Business, Education and Skills provide subsidies for students to help them cover the costs of this education. Loans also became available to part-time students to increase equity in access.

University performance and outputs

Education

England had higher education output levels than the European average bar for graduate employment, which was 2.3% below the European average in 2009. As mentioned above, the Government recently introduced measures to facilitate access to financial aid for part-time and mature students.

The increased student fees may provide a disincentive for potential applicants, particularly from the most disadvantaged background, especially because they may not have access to information regarding subsidised loans. The previous increase in tuition fees in 2004 did not decrease overall enrolments. A report from the National Audit office showed that students entering via UCAS increased from 332000 in 2002-03 to 346000 in 2006-07[368]. But a recent study by the Institute of Fiscal studies showed that access to higher education, although it had increased in terms of absolute numbers, had become more and more inequitable in England in the past thirty years[369]. Other evidence suggests that applications from young people from low participation neighborhoods (a widely established proxy for disadvantaged background) have held steady, falling by just 0.2% from 2011.

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[365] The Guardian . URL: http://www.guardian.co.uk/education/2012/apr/27/cap-students-universities

[366] England allocates funding to universities through a mixture of capital and recurrent grants. For a more detailed explanation of the different types of public finances higher education institutions get in England, see University of Sheffield. 2011. "How finance works ... in the Higher Education Sector."

[367] Willetts, D. and Cable, V. (2010) *Higher education funding for 2011-12 and beyond Bristol: Higher Education Funding Council for England.*

[368] National Audit Office (2007) *Staying the course: the retention of students in higher education*, ordered by the House of Commons to be printed 24 July 2007.

[369] Lindley, J. and Stephen, M. (2011) *The Quest for more and more education: implications for social mobility*, in *Fiscal Studies*, 33(2): 265-86, URL: http://onlinelibrary.wiley.com/doi/10.1111/j.1475-5890.2012.00161.x/pdf

The impact of the financing reforms on student application needs to be analyzed over time: UCAS figures show a modest reduction (10%) in English-domiciled applicants to full-time undergraduate courses. This reduction comes in the context of a record number of applications in 2011/12, and the fact that the size of the 18 year old cohort in the UK has fallen by 6% since its peak in 2009[370]. England also had a high percentage of international students proportionally to its total student population (15.3% compared to 5.9% in the European average in 2009), but recent changes in immigration laws may affect this proportion of international students.

Research

England had a higher research performance than the European average until 2011. English language may be an advantage for some indicators (for example in measuring the percentage of scientific publications within the top 10% most cited worldwide). The funding cuts increase competitiveness in the funding system, meaning that universities are finding it increasingly difficult to get state research funding. Performance at the research excellence framework assessment determines the funds that universities get. Several additional measures have been set up to promote a diversification of research funding.

Economic outcomes

Economic output was higher than the European average, the UK's GDP per capita being set at 30600 euros, above the 22963 euros in the European average in 2011. Knowledge employment and labor productivity were higher in the UK than in other European countries on average. The organizational integration of higher education to Innovation in the Department for Business, Innovation and Skills Department for Business, Innovation and Skills could help to increase the synergies between higher education and innovation.

Conclusion

The UK/England comes out as a top performer in our assessment. Policy changes introduced since 2008, including lifting recruitment from the highest achieving students and increasing competitive funding, are expected to lead to a concentration of the higher education landscape, which could increase the performance of some higher education institutions. The recent reforms of tuition fees, albeit accompanied by an increase in the value of public maintenance grants and in Governments' investment in loans, may affect educational equity. The reforms of the higher education landscape, which include a larger shift away from public funding for teaching to student contribution, have been pointed as factors which could have a lasting impact on the performance of higher education institutions.

[370] Peck G. (2011), *Higher education reform in England, Department for Business Innovation and skills* .