

IZA Policy Paper No. 107

**European Universities during the Crisis:  
A Public Policy Perspective, with a Brief Excursion  
to the US**

Jo Ritzen

September 2015

# **European Universities during the Crisis: A Public Policy Perspective, with a Brief Excursion to the US**

**Jo Ritzen**

*Maastricht University  
and IZA*

Policy Paper No. 107  
September 2015

IZA

P.O. Box 7240  
53072 Bonn  
Germany

Phone: +49-228-3894-0

Fax: +49-228-3894-180

E-mail: [iza@iza.org](mailto:iza@iza.org)

The IZA Policy Paper Series publishes work by IZA staff and network members with immediate relevance for policymakers. Any opinions and views on policy expressed are those of the author(s). IZA takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The Institute for the Study of Labor (IZA) in Bonn is a local and virtual international research center and a place of communication between science, politics and business. IZA is an independent nonprofit organization supported by Deutsche Post Foundation.

The papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the corresponding author.

## ABSTRACT

### **European Universities during the Crisis: A Public Policy Perspective, with a Brief Excursion to the US\***

The crisis slowed down the implementation of the Lisbon Strategy (for the EU to become the most competitive region in the world). The crisis has aggravated the divergence between the North West of Europe and Southern Europe in labor productivity imparted by the knowledge economy. At the same time, equality of opportunity for participation in higher education seems to have been well-preserved in the EU Member States. This is in contrast to the US with its substantial higher private costs for university education. The relative stagnations in university education and research during the crisis is similar in Europe as in the US. Asian countries may – as a result – have improved their position in innovation. The room for maneuver of Governments of EU Member States to deal with universities (as with other public expenditures) was severely limited by the agreed upon maximum levels of the budget deficit and Government debt. Political institutions appear to determine the “code” for higher education expenditures. The quality of the minister responsible for higher education and the level of “trust” in the country may also the room for maneuver in setting university policy.

JEL Classification: H2, H6, I22, I23, I24, I28, O31, O38, O43, O51, O52

Keywords: economic crisis, university policy, university funding, equity, innovation, labor productivity, trust

Corresponding author:

Jo Ritzen  
Professor of International Economics of Science, Technology and Higher Education  
UNU-MERIT and Maastricht Graduate School of Governance  
Boschstraat 24  
6211 AX Maastricht  
The Netherlands  
E-mail: [j.ritzen@maastrichtuniversity.nl](mailto:j.ritzen@maastrichtuniversity.nl)

---

\* Gratefully acknowledging the comments on an earlier draft by Mueid Alraee, Julie Belanger, Milena Nikolova, Andree Surssock, Pedro Teixeira and Peter Tindemans.

## 1. Deficits and debt have reduced funding of universities.

Europe has a strong, long-lasting tradition in public funding of the direct costs of education. When comparing the impact of the crisis on universities in EU countries in comparison to the US it is important to realize that private participation in the funding of direct costs is in the EU no more than some 15% (as a weighted average), while it was 65% in the US<sup>1</sup>. This also implies that the impact of the crisis in the EU is likely to be more aligned with the impact of the crisis on public finance than in the US, while it will be more felt in the US through participation. EU university systems are more homogeneous than in the US. Notably, research universities in the US are likely to be less affected by the crisis public low-prestige and private colleges with small endowments have presumably suffered most.

Also the availability for students of student loans and grants has suffered from the collapse of public finance. On the surface here the difference between the EU and the US was less in 2011<sup>2</sup> when considering the percentage of students who are eligible for support. However, when juxtaposed to the private costs it is easy to see that the private costs to participate in higher education are on average much higher in the US than in the EU.

Public university research funding, of course, is also strongly related to the development of the Government budget, with the corresponding effects of the crisis.

In 2015 most European Union countries were emerging from the deep financial and economic crisis<sup>3</sup> which started in September 2008, marked by the default of the bank Lehman Brothers in the US. They emerged with positive growth rates, but also with higher rates of Government debt (to GDP) than the 60% allowed in the EU stability pact and after substantial budget cuts required to reduce Government deficits below the 3% level mandated in the stability pact. During the crisis university education and research<sup>4</sup> were hurt in their funding by the ensuing budget cuts and are likely to continue to be hurt as the need to reduce debt levels is still urgent in many EU countries.

The countries where universities were most hurt by the crisis were those who had to seek refuge under the umbrella of emergency funding: Cyprus, Greece, Ireland, Portugal and Spain (to be called: the CGIPS-group). Except for Cyprus, all of these showed positive economic growth rates as of 2013, Ireland leading the pack with the highest growth rate of all EU member states in the years from 2013 onwards.

The banking crisis shook Government finance seriously. Bail out costs of banks as a percentage of 2010 GDP ranged from a top of 30 in Ireland to a lowest of 2.9 in Spain, with an average of 6.5 for the countries which had to bail out banks like the Netherlands (14.4), Germany (10.8), the UK (7.1), the US (5.2), Greece (5.1) and Belgium (4.3).

The between-country differences in the impact of the crisis on public university funding are closely aligned with the growth rates in the EU during the crisis period and the corresponding room for the

---

<sup>1</sup> Education at a Glance, 2014, OECD, Table B3.1, p. 236

<sup>2</sup> Education at a Glance, 2014, OECD, Table B5.2, p.273; see also: Table B5.4. Public support for households and other private entities for tertiary education as a percentage of GDP (2011)

<sup>3</sup> "Almost half of Europeans (48%) say that the impact of the crisis on the job market has already reached its peak, more than at any time since the question was first asked in early 2009", ([http://ec.europa.eu/public\\_opinion/archives/eb/eb83/eb83\\_first\\_en.pdf](http://ec.europa.eu/public_opinion/archives/eb/eb83/eb83_first_en.pdf)).

<sup>4</sup> We will use the terms "Higher education", "tertiary education" and "universities" in the subsequent sections interchangeably.

Government budget. During the period 2005-2014 accumulated economic growth was negative in Italy (-4.4%) and Greece (-18.6%). It was above 20% in the Baltic States, many Central and Eastern European Member States (Bulgaria, Czech Republic, Poland, Rumania and Slovakia) and the City-States Luxemburg and Malta, with an average for the EU as a whole of 9.3%.

There was during the crisis period substantial debate on private funding (tuition fees) and on the funding of opportunity costs through student loans and grants. However overall the percentage of private contributions towards the direct costs of universities has hardly increased (recognizing great differences between countries) and financial aid to students, relative to total expenditures on higher education has hardly decreased.

Government debt to GDP ratios are a good predictor of the room for new public investments in universities. The countries Greece (1.8), Italy (1.3), Portugal (1.3), Ireland (1.2), Belgium (1.1), Spain (1.0) and France (1.0) will have little room for increasing public funding of universities unless they choose to consider this as an investment rather than as a regular spending and unless they are willing to prioritize the future above the present. Funding could also be enlarged by allowing for more private funding.

The above gives a general picture of the position of Government and private finance for universities within the economic development of the economy in the EU. This was the backdrop for individuals deciding on participation in higher education when incomes fell, but also when youth unemployment increased –reducing the opportunity costs for participating in higher education. It was also the platform on which Governments were deciding on their willingness to continue to fund higher education, university research as well as the student- loan and student-grant facilities meant to further equality of opportunity.

The Lisbon Strategy, launched by the European Commission in 2000 was an important signal for European (mostly public) universities. This Strategy was an action and development plan with the aim to make the EU "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion", by 2010, focusing on research and higher education. The role of universities for innovation was underlined, resulting –haltingly, but nevertheless- in more support for proper operating conditions for universities in funding and autonomy. It looked like European universities might strengthen their dismal position in the rankings of top universities (Ritzen, 2010), while the Bologna Agreement ensured that European university systems became more alike by defining the same study structure with a bachelor, master and PhD degree.

However when in 2008 the economic crisis hit, the process has been slowed down and perhaps –for some countries- been reversed, not all of a sudden, but gradually as the economic crisis persisted for an almost biblical seven year period, with the near future showing the need to further reduce Government debt, undercutting the space for higher Government outlays for higher education and public research and with no signals that private funding of education and research will compensate.

We will argue that –substantially differentiated between countries- the crisis has had a severe impact on the potential of universities to deliver high quality graduates and high quality research, while the effect on equality of opportunity has been minimal or absent. Often we reduce the differences in the EU into the three regions: "North-West", "South" and "East", well realizing that the borderlines between those regions are quite variable and also that within each of the regions substantial

differences exist. Even within countries, in particular if higher education is mostly the responsibility of the regions, like in Germany or in Spain, often substantial differences in the reaction to the crisis have been visible.

During the crisis EU Governments seemed to have hardly been involved in “university reform” or reform of the research structure, i.e. in adapting the legislation on higher education in such a way that universities would become more effective for learning outcomes and for research output. These three aspects (per student funding, student aid and reform) are considered in the following section 2. Section 3 looks into the potential damage in the EU as a result of the decrease in funding on outcomes of universities (both in competencies of graduates, in research performance and in equality of opportunity). These findings are juxtaposed to impressions of the US in section 4. Section 5 tries to explain from a public policy perspective the way Governments used their room for maneuver with respect to higher education during the crisis. It appears as if Governments were more or less “endogeneous”, that is responded to the crisis in an almost mechanical and predictable way given the changes in the state of public finance due to the crisis. The use of the remaining leeway (the room for maneuver) is explored in section 5 from a political science perspective. Section 6 presents policy recommendations, while the last section (7) contains a summary and conclusions.

## **2. Public funding, student aid and private funding between 2008 and 2010.**

The crisis took place in at a time when universities became increasingly recognized as an essential part of the (sustainable) growth engine (Aghion and Howitt, 1997), most clearly expressed in the Lisbon Strategy on innovation of 2000. This was at a time when European universities (in particular in the “old” EU) were more or less reaching “saturation” levels of participation after a period of several decades of fast increases in participation rates (the so called “massification”). Massification was accompanied by decreasing per student funding and by an unease to keep up learning standards. European Universities (with the exception of the UK) were underrepresented in the tops of the rankings of universities which appeared at the early parts of the 21<sup>st</sup> century.

Figure 1 shows the decrease in per student funding in over the longer period 1970-2010 for the UK. The UK can be considered to be representative for developments in funding in the EU until 2010. The pre-crisis years were in general in Europe excellent years in terms of growth of GDP per capita as well as of historically low unemployment. Nevertheless: university expenditures per student went down (if expressed relative to GDP per capita). [Figure 1 here; Source: UIS]. Figure 2 shows what happened in terms of overall expenditures for higher education during the crisis for 22 European countries and regions. [Figure 2 here]. The greatest cut backs were made in Greece and Hungary (greater than 40%). At the same time, public funding for universities (including student aid) rose during the crisis in somewhat more than one quarter of these 22 countries.

## *2.1 Funding per student and student aid<sup>5</sup>*

Public expenditure per student (including research expenditures of universities, but excluding student support) as a percentage of GDP per capita has slightly increased between 2008 and 2010 for the median (per student expenditures are 27% of GDP per capita)<sup>6</sup>. It remained stable for countries below the median (although increasing for new member states Estonia, Slovenia, Poland, Slovakia and Lithuania as well as Portugal and the UK). Malta has had the highest increase in public expenditure per student as a percentage of GDP per capita, despite an increase in enrolment. This is exceptional, since in the past in many countries increases in enrolments were accompanied by a 'watering down' of expenditures per student. Per student expenditures as a percentage of GDP per capita ranged in 2010 from 16% Slovakia (lowest) to 25% (Hungary and Bulgaria) highest. In general the countries with the most substantial financial problems (the CGIPS-group) saw on all fronts public expenditures declining, including for higher education.

Casual inspection shows that from 2010 through 2015 the general trends in funding have continued. The good news is that –with an exception of some of the CGIPS countries, notably Greece- no major disasters have occurred in Government funding for higher education. The bad news is that the Lisbon promises of a substantial increase in funding for higher education has been thwarted or at least delayed by the crisis (with Germany as the major exception). This means that the dismal picture presented in Figure 1 for the UK of a long run decrease in funding for higher education is –as yet- not reversed. The convergence observation (made in the above) is at odds with the conclusion of Skrbinjek and Lesjak (2014) who observe that countries that invested high levels of funding on higher education before the crisis did also increase their investment during the crisis. The difference can be explained because of the differences in measures: while they look at total expenditures, we consider per student expenditures relative to GDP per capita.

The median of financial aid to students relative to total public expenditures on higher education has slightly decreased in these 32 European countries between 2008 and 2010, passing from 14.2% to 13.9% of the total. Financial aid increased on average for countries below the median from 6.4% to 9%, whereas it decreased for countries above the median. Financial aid decreased in Norway and Austria; but increased in Estonia, and Poland. Private expenditure per student as a percentage of GDP per capita has slightly increased, at the median, across European countries, from 6.2% to 6.5%. The largest increase took place in the UK because of rising tuition fees. (The UK had another broad reform of its financing system in 2010. This is not yet captured in these data of 2010).

In the crisis period, private contributions to higher education in combination with student aid were dominant in the political discussions on higher education: in 17 of the 32 European countries such policy reforms took place. However: the subsequent reforms were not always in the same direction. In some countries, tuition fees were abandoned (like in Estonia, Germany and Turkey), but in others the student contribution was increased (in Ireland). Bulgaria and Hungary reformed their student loan systems. The UK has moved to tuition costs of 9000 pounds while expanding the comprehensive social student loan scheme. In several EU countries, like the Netherlands and Finland, a

---

<sup>5</sup> Data from: from [www.empowereu.org](http://www.empowereu.org) for 32 European countries are used in this chapter. These are all EU countries, plus Iceland, Norway, Switzerland and Turkey.

<sup>6</sup> By relating per student expenditures to GDP per capita we correct substantially for the differences between countries in salaries of university staff.

Governmental proposal is aimed at allowing universities to charge tuition fees for international students from outside the EU to broaden the funding base of universities.

This picture for 32 European countries can be enlarged with the information from Chubrik et al. (2013) on former Soviet Republics (FSRs) not part of the EU (Armenia, Azerbaijan, Belarus, Central Asia, Georgia, Moldova, Kazakhstan, Russia, Ukraine). University enrolment rates had been rising before the crisis. During the crisis, a reduction in the university enrollment rate was registered only in Georgia and in Azerbaijan. University enrolment in European FSU countries (except Moldova) is close to the EU15 level, while in Tajikistan and Uzbekistan, it is on par with enrolment in India.

The upsurge of university education in most of the FSR countries was associated with the expansion of private higher education institutions (HEI) and the growing proportion of students enrolling on fee-paying conditions. Education quality declined substantially in this process of massification. The rapid increase of tuition fees in public education and the development of private schools have left their mark household education expenditures constituting a sizable proportion of GDP almost everywhere in the FSR countries (between .5 and 1% of GDP) compared to the EU average (.4% of GDP) and even higher than the European maximum (0.7% of GDP in the UK). This translates roughly in per student private contributions relative to GDP per capita of between 40% and 80% in FRS countries compared to 12% for the EU.

The East (Poland, Hungary, the Czech Republic and the Slovak Republic) /West divide in Europe in university knowledge production is well described by Kwiek (2012). Central and Eastern European countries have fuelled the increase in participation in universities through private institutions in the past decades (Portugal being the only Western European country to go this route). Poland is the country with the highest (relative) enrolment in private universities. Common features underlying this trend are a late massification process and weak welfare states (in the East because of the transition to a market economy and in Portugal because of a dictatorship lasting until 1974).

Public research has become a substantial part of the EU budget (through the Framework Programs) and has increasingly become a serious part of the research income of the European research universities (in the magnitude of some 8%). During the crisis (in 2013) the EU Financial Framework for the period 2014-2020 was accepted by the Parliament and the Member States, showing a 30% increase in the budget for the EU Research and Innovation Program "Horizon 2020". European public research programs compensated in part the cut backs from individual countries.

## *2.2 Enrollment and mobility 2008-2010*

Enrollment in European countries continued to converge during the crisis, but only very slightly (countries below the median increased their enrolments as a share of total population by 0.05% on average, whereas no change is observed for countries above the median). Enrolment numbers have increased in the Netherlands, Switzerland, Germany, Malta, Luxembourg, Belgium and Spain for example; but decreased in Romania, Latvia, Slovenia, and Slovakia.

There are several background factors leading to changes in enrolments: demographics, attractiveness to foreign students and access to higher education or changes in graduation rates because of youth



unemployment. Rates of return to HE, which were remained high in southern Europe, despite HE's expansion may also have been a driving force for enrollment.

Student mobility was (median) some 4% in 2010. The median European country has become slightly more attractive to mobile students, as the share of mobile students over total enrolments increased by 0.1%. The Netherlands has seen the largest increase (+3%). On average the increase in mobile students has been stronger in countries with a level which is below the median. The increase in mobility was prompted by European student mobility programs. During the crisis the new Erasmus program received some 40% more funding leading to some compensation for funding losses in the countries.

The number of new entrants has decreased in the majority of European countries. This decrease occurred after decennia of increased participation. It was stronger in countries above the median in 2008 and very visible in Portugal and Romania, related to demographics. The relation with the crisis is likely: Governments decided to make participation in higher education more difficult. Conversely, countries which were below the median have had a less drastic reduction in the number of new entrants. Some countries, like Denmark and Germany, saw an increase in the number of new entrants, encouraged by Government.

### *2.3 Graduation*

The tendency towards convergence is also observed for graduation rates (percentage of students graduating: bachelor, master and PhD degrees). Typically countries below the median value in the base period have had a higher increase in graduation rates than countries for which the graduation rate was above the median. The increase in graduation rate was particularly noticeable for Italy (which increased from 11% to 20%), the Netherlands and Portugal. In many North-Western EU countries Government policy has for a long time been focused on the increase in the graduation rate and the decrease in the length of the study period. The crisis has certainly led Governments to ask universities to increase graduation rates and to discourage long-stays, even though reduced employment opportunities might stimulate long-stays. Graduation rates have decreased the most in Romania and Turkey, likely to be due to reduced employment chances of graduates during the crisis.

### *2.4 Reform towards more autonomy*

Institutions play an important role in generating learning and research outcomes (Ritzen, 2015 and Ritzen et al. 2014a). However, during the crisis period the gusto for institutional reform (towards more autonomy of universities) was markedly less than in the pre-crisis time. Only the Romanian Government adopted a plan to guarantee university autonomy in combination with public accountability<sup>7</sup>. In Slovakia, universities were given the (policy) autonomy to set up their own courses, in combination with an accreditation system (as most other European countries have). In Turkey and Hungary in contrast university autonomy was reduced in order to have more political control over universities.

---

<sup>7</sup> Source: Correspondents network, see [www.empowereu.org](http://www.empowereu.org).

Reform towards more research competition between universities with the UK system as example also seems to have halted during the crisis.

### **3. University outcomes affected by the crisis.**

#### *3.1 Competencies of graduates and graduate productivity*

Average competencies of graduates of universities differ substantially between countries as the data of the Project International Assessment of Adult Competencies (PIAAC) shows. It is interesting (as in Figure 3) to show that these differences are in part explained by funding per student (proxied by public expenditures per student in relation to GDP per capita in one single year just before graduation). Numeracy is one of the three measures (next to literacy and “problem solving in a technological environment”) of PIAAC. The three measures show substantial correspondence [Figure 3 here].

Of course: it is not only funding, but also the institutional characteristics (e.g. the organizational form of the universities) that count in “producing” learning outcomes (Ritzen, 2015). There is also ample evidence shows that more competition in research will raise research productivity. The UK system of funding university research stands out as an example.

Learning outcomes in the past are well correlated with labor productivity. Figure 4 shows the development of labor productivity in the period 2000-2010 in selected European Union countries. The Figure shows the giant steps of Poland as an example for a Central/Eastern European country in labor productivity improvement. It also shows how badly Southern European countries performed. Germany is an example of a North-western European country where labor productivity continued to grow on a high level (the UK is the in North-Western Europe; it is closer to Southern Europe in labor productivity). These differences in labor productivity are part of the explanation of the resilience of countries for the crisis: those with higher and growing labor productivity were far more resilient than those in the South of Europe with lower and stagnant labor productivity, in particular for countries which shared the same currency (the Euro).

This analysis bodes ill for the future of the innovative power of universities, if innovation is proxied by labor productivity. The Southern European countries will be more than the North-Western and Eastern European countries under the pressure of reducing Government debt and thus have less leeway to build up their power to increase labor productivity through enhanced funding of universities. One should keep in mind the generalizations made here. For example: parts of Spain blossom in university education and research.

#### *3.2 Research*

Research productivity differs wildly between the 32 European countries analyzed in 2012 in Hoareau et al. (2012)<sup>8</sup>. Research productivity is measured by scientific publications within the 10% most cited scientific publications worldwide as a percentage of total scientific publications of a country. During the crisis the productivity of higher education and its connection to the external environment

---

<sup>8</sup> See footnote 5.

(measured as the number of public private co-publications) have increased in most European countries. This was to be expected as much of the publications in during the crisis were already in the pipeline at the time the crisis hit.

One could hardly expect that the European standing in the ARWU (Academic Ranking of World Class Universities, also called the 'Shanghai' or 'Jiao Tong' Ranking) and greatly determined by research performance would have changed greatly during the crisis period as that standing is the result of a long run trajectory towards excellence. Portugal is the only European country with a substantial change between 2011 and 2013 (increasing the number of its universities among the top 500 by two, while the Netherlands has one university fewer in 2013).

In many of the European countries concerns have been expressed on the insufficient level of public R&D efforts at the end of the crisis (when economic growth was picking up again). An example for one of the CGIPS countries is Santamaría et al. (2013) commenting on Spain's 2013–2020 research and development (R&D) strategy which shows all the signs of the crisis as it slims down public support for basic science and education while moving public research towards market-driven, applied research and fostering private participation in technology transfer by redirecting public funds toward private enterprises. This is exemplary for a tendency in many of the EU countries and very much in contrast with the findings on the important role of public research in promoting innovation (Mazzucato et al., 2015).

### *3.3 Equality of opportunity*

The crisis has hardly led to a shift from Government funding to private funding. Private higher education systems in Central and Eastern Europe as a result have not become the "trendsetters" for Europe, as some thought (Kwiek and Maassen, 2013). It is the other way around: private education in Central and Eastern Europe has become less popular as a result of the relatively high private costs in combination with the perceived low quality.

The dominant line of thought in Europe remains that equality of opportunity is safeguarded by low or non-existent tuition fees, against a smaller group of countries which believes that funding requires private contributions to be necessary for quality education, while equality of opportunity is safeguarded by social student loans and grants. Equal access to higher education has to be considered from the perspective of the tail that cannot wag the dog: the conditions in terms of cognitive development pre-university are the first and foremost determinant for participation in higher education. "Capital market restrictions" (not being able to participate because of a lack of funds) plays in Europe (in contrast to the US) a lesser role as generally ample social student loan and grant systems are available in relation to the private direct costs.

The volatility in the policy position within countries on student contributions in Europe is then remarkable. The countries which decreased student contributions had increased them in the recent past, while the countries which have raised them have decreased them in the recent past. The only country which reacted to the crisis by raising sharply tuition fees is the UK (and to a lesser extent Ireland), well compensated by a social loan scheme. The initial concerns that this would reduce the taste for higher education and in particular would hurt enrolment opportunities for youngsters who

came from family backgrounds without HE experience is until now fortunately not turned out to be realistic. The UK seems to intend now (2015) also to convert maintenance aid from grants into loans, raising new concerns on equality of opportunity.

The treatment of student-aid and tuition fees in politics shows a substantial bias towards higher and middle income groups. They benefit disproportionately while equality of opportunity could also have been safeguarded by income dependent student aid.

### *3.4 Never waste a good crisis*

There is very little evidence that crisis affected universities positively as Moran (2012) leads us to believe about teacher training in Northern Ireland. The introduction of good practices as observed worldwide, for example in students assessing teachers, in problem and case based learning seems to have been slowed down. Greek universities were particularly hard hit by the crisis. Koulouris et al. (2014) show the disastrous impact on one of the Greek universities, however, with the silver lining that the crisis has forced the staff to look for innovative approaches.

The crisis does not seem to have affected the use of more on-line learning. Before the crisis MOOCs were advanced as a way to make universities more efficient, as they would substitute students' time in electronic interaction with prerecorded lectures and electronic interaction for (expensive) teachers' contact hours. MOOCs could integrate academic talks with interactive coursework, the use of automated tests, quizzes and games. Students learn at their own pace, discuss, share and collaborate in a networked environment that feels like "home", due to profile matching techniques to create groups of students that have lots in common. Apparently the investment costs required to develop blended learning, using in part also MOOCs or on-line learning have been difficult to acquire within universities at the time of the budget cuts resulting from the crisis.

Particularly interesting is the impact of the crisis on business and entrepreneurship education. The financial scandals, like at ENRON have led to a new drive to spend time on business ethics in business schools, spearheaded by Harvard Business School. Rae (2015) believes that the international financial and economic crisis in 2008 produced a new economic era in which "ethical and environmental concerns are creating a discourse of responsible entrepreneurship informed by social entrepreneurship, where the prevailing mode of entrepreneurship education has been dominated by an ideology of neo-liberal deregulated market economic growth, based largely on a North American set of cultural values which are increasingly questioned in view of the negative effects experienced from the crisis, leading to a rethinking of the basis for enterprise education in this new era". However, there is little evidence to support that this has happened on a sizeable scale.

Germany notably weathered the crisis storm well according to Berger and Stenke (2011) in an analysis of public financing of universities as well as the co-operation between science and industry. Indeed Germany suffered from cuts in the science budgets of some German federal states, falling student numbers in specialized courses such as MBA programs and decreasing growth rates in the HEIs' income generated from private companies. However, the higher education system in Germany seems to have overcome the crisis without major negative effects especially in comparison with the situation other countries like the UK.

Overall the budget cuts have not led to fewer rules imposed for accountability and quality control on universities and for less bureaucratic research procedures. On the contrary: it seems like the paper mill has continued to grow. The finding that half of research time in the US is spent on administration is probably becoming similar in Europe, where the block grants to institutes like the Max Planck institutes and in the Netherlands to research universities are good examples.

These are just a few of the potential innovations within higher education which might have been stimulated by the crisis. However, there are no examples of indeed the use of the crisis to promote the innovation of university education and research.

## 4. Comparing Europe and the US

The US and EU higher education differ substantially in structure and funding, perhaps best proxied by the percentage of GDP spent on higher education institutions. The US (2.7%) spend in 2011 almost double the amount of the EU 21 (1.4%) on direct costs, while the percentage spent on student financial support is almost the same (.4%). The US system is primarily funded by private contributions, the systems of higher education in the EU by public funding.

Douglass (2010) is cautiously positive on Europe: “Preliminary indicators show that most nations have not thus far resorted to uncoordinated cutting of funding for higher education that we generally see in US state systems. Their political leaders see higher education as a key to short-term economic recovery, long-term competitiveness, and often their own political viability – particularly in nations with upcoming elections. We could not find any evidence in our study of 2014 (Ritzen et al. 2014a) supporting this positive note. In that study Poland turned out to be the only country for which the correspondent is optimistic on improvements in innovation<sup>9</sup>. Most of the country correspondents were neutral. Croatia, Cyprus, Hungary and Latvia were pessimistic. Correspondents’ perceptions appear tied to their countries’ economic situation which was at the time of their reflections (2013) not in the best shape.

Altundemir (2012) argues that the American higher education system has been much affected by the financial downturn. “Unemployment has continued to climb, and job availability for young people is low. At the same time, the cost of tuition at private colleges and state four-year universities has continued to grow. As a result, with a greater need for higher education, but fewer financial resources, families have chosen cheaper options”. “Spending in many American colleges and universities has been severely cut back”, despite the 2009 American Recovery and Reinvestment Act (ARRA), which allows States to use a portion of these funds for operating budget shortfalls in public colleges and universities, so that tuition increases could be mitigated and faculty and staff layoffs could be prevented during the fiscal years 2009 through 2012. Douglass (2010) noted some two years earlier something similar (with a focus on California – the largest US state in terms of population and in the size of its economy). Douglass (2010) sees the reaction to the crisis as a serious threat to US higher education: “there is the prospect that higher education degree production rates in the US will dip in the near term, particularly in states like California that have substantially reduced access to higher education even as enrollment demand has gone up.” He feels that European

---

<sup>9</sup> Correspondents of the Empower European Universities Network in each of the 32 countries mentioned in footnote 5 were asked to reflect on the changes in university funding, legislation and performance.

countries have reacted better to the “Great Recession”. Christopherson et al. (2014) also paint a particular grim picture of US universities being pushed further down the slide of less state funding, rising costs and its translation into individual long run debt. It is likely that equality of opportunity might suffer substantially in the process (Mettler, 2014, Putnam 2015).

The comparison with Europe shows provisionally that the US universities with large endowments catering for perhaps no more than 1% of the US students have by and large been able to maintain the effectiveness, but that US universities on the whole have suffered at least the same and perhaps more than their European counterparts.

The major difference between the US and Europe is that equality of opportunity seems to be far more safeguarded in Europe than in the US: private costs in the US are on average much higher than in Europe, while the public resources for student aid are the same (about .4% of GDP, in the US supplied by Pell grants or Fannie Mae). The US may be losing some ground compared to Europe in the global shifts in the race to develop human capital. However, both the US as Europe seem to have lost some ground compared to the increasing competition from Asia, visible in the worldwide rankings. At the same time the European systems of higher education continue to be regressive in their impact on income inequality: higher and middle income groups benefit disproportionately.

## 5. Explaining University Policy Response to the Economic Crisis

Political science provides insights on policy making (Keating, 2009). We explore here some inroads to analyze how Governments responded in EU countries to the crisis with respect to universities. The policy response to the crisis is in the preceding cast in terms of funding, funding incentives, financial aid to students, research funding and university legislation. The response was highly varied in the 32 European countries mostly considered<sup>10</sup>. The depth the GDP decrease and the heights of the budget deficits are have seriously limited the room for maneuver in funding universities.

We explore here three different lines of interpreting the way the room for maneuver was used:

- The country “code” on public expenditures. It appears like countries with a high level of support for (higher) education attempted to minimize budget cuts in education during the crisis. Political science would put this in the domain of institutions which help to engender a strong welfare state. We also explore here the role of the EU as a supra-national political construct which might have been able to compensate in part for the national budget cuts on universities.
- The strength of the minister for higher education might have been influential in averting or limiting budget cuts.
- Trust in society which would allow for maintaining the strength of long-run public investments above short run welfare expenditures. Perhaps this explanatory background coincides with the presence of political institutions which engender a strong welfare state.

A statistical analysis of these three factors is beyond the scope of this paper.

---

<sup>10</sup> See: footnote 5.

## *5.1 The country “code” on higher education*

Political scientists suggest that Government institutions, like the electoral rules and the form of Government might play a role in determining the relative size of the public sector. Fumagallia and Narciso (2013) find that countries whose institutions which increase voter turn-out favor higher public expenditures. This finding is not so simple to translate towards a period of general retrenchment, however, and even more difficult to translate to the way politicians choose between public expenditures for higher education and other public expenditures, including the welfare payments which are likely to rise during a crisis period.

Several authors explain the strength of the welfare state (and hence presumably of the support for higher education) by “the quality of Government”. Svallfors (2012) and Rothstein et al. (2012) show how perceptions of government quality – in terms of impartiality and efficiency – impact on attitudes to taxes and social spending.

Busemeyer (2014) finds in a survey in OECD countries that increasing public investment on education is indeed extremely popular among voters. Even when forced to choose between education and other social policies, a relative majority supports to focus on education. But voters do not like to pay higher taxes or accept higher levels of debt for education and they strongly dislike the redistribution of funds from one part of the welfare state to another. This could be interpreted as saying that they would accept budget cuts in (higher) education as part of an overall cut-back of the welfare states in a period of recession. Busemeyer and Iversen (2014) give an impression of the reasons why the crisis did not give rise to a greater importance of private funding of higher education. They argue that electoral institutions play a crucial role in shaping politico-economic distributive coalitions that affected the original division of labor in education financing. “In systems with proportional representation, the lower and middle classes formed coalition supporting the establishment of a system with a large share of public funding. In majoritarian systems [i.e. an electoral system which gives a majority of seats to the party with a plurality of votes], in contrast, the middle class voters aligned with the upper income class and support private education spending instead”. This then turns into a “code” which –once established- has a strong change for survival, also under changing circumstances. Empirical tests both on the micro level well as on the macro level for 20 OECD countries do not contradict their hypothesis.

The European Union as a supranational structure of Government has had little or no impact on the way the room for maneuver for individual countries was used in dealing with higher education during the crisis. This is no surprise as (higher) education is not part of the EU competencies but fully the responsibility of the Member States.

However the EU exerted substantial compensatory power for the budget cuts by means of the successful Erasmus program supporting student exchange between the EU countries and the EU research and innovation programs (in the past called: Framework Programs) as mentioned before. Heidbreder (2013) notices that the institutional architecture of the European Union is based on two fundamentally competing ideas: supranational rule and national sovereignty. “These two underlying ideas are not reconcilable and work at different levels in the background of the policy debate”. This is tantamount as the earlier awareness of a lack of legitimacy on the EU level (e.g. Scharpf, 2009). In this respect the increased EU budgets for the Erasmus Program and Horizon 2020 are at odds with the national sovereignty which has led to budget cuts for higher education and public research.

The crisis has highlighted the internal contradiction in the EU noted by amongst others Heidbreder (2013). It has also increased Euroskepticism which is seen as the expression of an increase of those who feel threatened by globalization (Teney et al., 2014). One can very well follow the reasoning of Lefkofridi and Schmitter (2015) that the crisis could well be detrimental for the future of the EU.

### *5.2 The Minister.*

The strength of the minister responsible for higher education within the cabinet can be an important factor in generating support for HE. Strength is derived from the popular sentiments on education. Jacqmin and Lefebvre (2015) suggest that the strength of the minister in the cabinet also has to do with his/her knowledge of the sector and its political experience. The period in office does not appear significant in their analysis, even though it is well recognized that this is short (on average 2.5 years with a standard deviation of 1.7 years). An intervening factor may be the trust of the political leadership in the civil service. Education is much less ideologically laden than many other sectors: there is broad agreement across the political spectrum of the importance of equality of opportunity and of efficient and effective learning of students. At the same time it is observed that changes in the ministerial position are often accompanied by see-saw movements. Ministers supported by their cabinet or the president feel free to undo what previous Governments did, to come up with new plans, even if it should be known that the implementation of educational reforms has a long gestation time (in the order of magnitude of 5 to 10 years). Some of the German states are good examples of such see-saw behavior. This is likely to be to the detriment of the contribution of the universities to student learning and to research performance. The role of the Minister can be best illustrated with Portugal finding now two universities in the top 500 (see section 3.2). This is widely attributed to the late Minister Mariano Gago's role in HE and Science between 1995 and 2010.

### *5.3 Trust, room for maneuver and empowerment.*

Trust in Government has been suggested as a major factor for "room for maneuver" in political decision making. Warren (1999) puts out the question: "Is declining trust in government [as we witness across OECD countries] and in other citizens bad for democracy? ...Trust can develop where interests converge, but in politics interests conflict. Democracy includes a healthy distrust of the interests of the powerful, and institutionalizes it by providing opportunities for citizens to oversee them. Yet democratic institutions depend on a trust among citizens sufficient for representation, resistance, and alternative forms of governance". Room for maneuver in the EU countries during the crisis period may have suffered from the reduced levels of trust in Government, which happen to go or are perhaps expressed in an increased fractionalization of politics (Naim, 2013).

General, bridging trust (Putnam, 2000) is a likely explanation for the acceptance of university autonomy by Governments. Indeed: in the period up to 2008 there is some correspondence between the countries who engaged in more empowerment of universities (Denmark, Finland, the Netherlands and Sweden) and the levels of trust (shown in Figure 5). Perhaps "trust" can be also serve as an explanation for the reaction to the crisis with the hypothesis that in countries with more trust there is also more room for long-run policy and thus safeguarding higher education and R&D from budget cuts.



## 6. Policy Recommendations

Recent (2015) Government documents in the EU on higher education and research show considerable complacency with the present state of affairs. The complacency is expressed in:

- The acceptance of the decrease in per student funding even when this may stand in the way of increasing capabilities and the corresponding labor productivity of graduates;
- The limited ability to increase tuition fees while focusing student support on the students from low and lower-middle income groups which de facto implies an acceptance of a serious redistribution of income from lower and lower-middle income groups to higher income groups;
- A virtual absence for considering in legislation universities as goal-oriented organizations leaving substantial lee-way for bureaucratic control, for political interference and for private interests of students and staff in deciding on quality education and research.

The preceding also shows a disturbing divergence in development of the “knowledge segment” of societies between on the one hand the North-West and East of Europe and on the other hand the South (well realizing major differences with these regions). The crisis appears to have strengthened this divergence.

Perhaps the “reconstruction” after the damage done by the crisis should be first sought in funding, with the following recommendations<sup>11</sup>.

- National governments need to find the right balance between public and private contributions to higher education with student grants/loans as a means to promote equality of opportunity while avoiding that makes the income distribution (after Government benefits) more unequal.
- Economic constraints as implied in the Maastricht Criteria should not be a barrier to the pursuit of quality of a higher education system. University outlays in EU Member States should be exempted from the criteria of the European stability pact and regarded as investments. At the same time, the use of structural and cohesion funds could improve the performance of higher education in less economically developed regions, as is the case in Poland with a multi-billion Euros investment.
- National governments need to concentrate on promoting skills acquisition (rather than mere enrolment and attainment levels). Universities should feel responsible for providing graduates with skills that are crucial for innovation while sustaining their emphasis on “Bildung” making those citizens’ and personal skills better measurable.
- Given the contribution of higher education to economic innovation, governments should do more to integrate the promotion of economic innovation into higher education policies. Eight governments have such an integrated strategy (e.g. Denmark now has a Ministry of Science, Innovation and Higher Education).
- Government policy needs to be long run policy and be moved away from the electoral cycle. The implementation of new legislation in universities is a process of at least five to ten years. The

---

<sup>11</sup> See also Ritzen et al. (2014b)

electoral cycles often take the form of a yo-yo seriously affecting the performance of universities for society.

- Higher education policy and higher education outlays should be part of the country specific recommendations of the EU so that they are held against the framework of the best available practice.

- There is still insufficient measurement (in the form of time-series) of the quality of graduates and of autonomy of universities. It seems to be an EU relevant task to develop such statistics so that our understanding of the impact of organizational characteristics like autonomy and the relation between policy and the skills of graduates can be improved.

## 7. Summary and conclusions

After a biblical 7 year period the economic crisis seems in 2015 to be over with economic growth picking up again in most EU countries. During the crisis economic growth fell and fewer taxes were collected; banks were rescued with public money; debt levels rose and (youth) unemployment increased. Governments cut budgets in order to satisfy the “Maastricht” criteria of budget deficits no greater than 3% and a Government debt to GDP ratio of no more than .6. This has impacted universities, both through the reduction of direct costs of students and the reduction of student aid (loans and grants). EU Governments, except for the UK, hardly allowed universities to compensate for the loss of public funding of the direct costs through increased tuition fees.

The financial and economic crisis has hit Europe more than the US (in terms of bail out costs of banks and decline in GDP). This was felt by universities and (potential) students alike. In particular universities of the CGIPS group were hard hit in terms of funding direct costs and student aid. The economic crisis has slowed and perhaps –for some countries- reversed the process initiated with the Lisbon Strategy, not all of a sudden, but gradually as the economic crisis persisted for a seven year period, with the near future showing the need to further reduce Government debt, undercutting the space for higher Government outlays for higher education and public research.

The economic convergence in Europe of the pre-crisis period was mirrored in university convergence. During the crisis convergence in university structures (the Bologna agreement), funding and -to a lesser extent- legislation continued between Central and Eastern Europe and North-Western Europe, while it halted between the South of Europe and the North-West. This might strengthen the converging trends in labor productivity (between North-Western and Eastern Europe) and diverging trends (between the North-West and the South), with a substantial threat for the cohesion of the European Union, in particular between the North-West and the South. The EU Program for student exchange (Erasmus Program) has been beneficial for convergence.

Equality of opportunity in Europe has not suffered if measured by the availability of financial aid to students relative to total public expenditures on higher education. During the crisis European countries mostly abstained from raising the private (direct) costs of higher education as a potential way to compensate for budget cuts in the public expenditures, even though on the political scene the division of total per student costs between the public and the private was the main topic of

discussion. The political debate on university reform towards a more effective university organization (captured in the term: “more university autonomy”) halted during the crisis.

Competencies of university graduates appear to be related to both university funding and organization. The impact of the crisis has then reduced the innovative power of the EU economies in so far they depend on the competencies of graduates. Research productivity continued to increase. However, this is likely to be the result of pre-crisis investments. The future will show to what extent research has been hurt by the crisis. The EU Framework Program has compensated to some extent for research cuts on the national level, while encouraging convergence.

There is little or no evidence to support the notion that the crisis has encouraged innovation in learning or in research inside the universities in Europe.

In comparison to the US, Europe may not have fared too badly during the crisis, by preserving equality of opportunity. The US, with substantial higher tuition fees, may have lost its edge in promoting intergenerational mobility through higher education. It is likely that the crisis made it more difficult for youngster from low and middle income groups to participate in higher education, compared to Europe (with similar levels of student aid, in relation to GDP).

Both the US and Europe may have lost some of its comparative advantage to Asian universities.

Political science explanations for the use of the room for maneuver for politics to deal with the crisis vis-à-vis universities are sought in political institutions, in the quality of the minister and in “trust” in societies. The room for maneuver was limited as a result of EU agreements on budget deficits and debt levels. The “code” for higher education expenditures, resulting from political institutions appears to be important in explaining the use of the room for maneuver.

Policy conclusions focus on funding, both public and private (and the healthy mix there-off which supports equality of opportunity with too much of a redistribution of income from poor to rich) and on the legislative framework of a goal-oriented organization which the university is.

## References

- Aghion, Philippe and Peter W. Howitt (1997). *Endogenous Growth Theory*, The MIT Press.
- Altundemir, M.E. (2012). The Impact of the Financial Crisis on American Public Universities, *International Journal of Business and Social Science Vol. 3 No. 8 [Special Issue - April 2012]* 190.
- Berger, F. and G.Stenke (2011). Auswirkungen der Wirtschafts- und Finanzkrise auf die Hochschulen (Impact of the Crisis on Universities: The Situation in Germany in an international comparison), *Vierteljahrshefte zur Wirtschaftsforschung, DIW Berlin, 80: 131-141.*
- Busemeyer M.R. (2014). How popular is education really? *Procedia - Social and Behavioral Sciences* 147 (2014 ) 518 – 526.
- Busemeyer Martin R. and T. Iversen (2014). The Politics of Opting Out: Explaining educational financing and popular support for public spending, *Socio-Economic Review*, 12(2), pp.299-328.
- Chubrik, A., M. Dabrowski, R. Mogilevsky, and I. Sinitsina (2011). The impact of the global financial crisis on public expenditures on education and health in the economies of the former Soviet Union, *CASE Network Reports, No. 100.*
- Christopherson, S., M. Gertler and M. Gray (2014). Universities in Crisis, *Cambridge Journal of Regions, Economy and Society*, 7:209-215.
- Douglass, John A. (2010). Higher education budgets and the global recession: tracking varied national responses and their consequences. *Research and Occasional Paper Series: CSHE. 4.10.* California: University of California-Berkeley.
- EUA (2014). Public Funding Observatory, “Crisis and Universities”, [http://www.eua.be/Libraries/Governance\\_Autonomy\\_Funding/PFO\\_analysis\\_2014\\_final.sflb.ashx](http://www.eua.be/Libraries/Governance_Autonomy_Funding/PFO_analysis_2014_final.sflb.ashx).
- Fumagalli, Eileen and Gaia Narciso (2012). [Political institutions, voter turnout, and policy outcomes](#), *European Journal of Political Economy*, 28(2), pp 162-173.
- Heidbreder, Eva G. (2013). European Union governance in the shadow of contradicting ideas: the decoupling of policy ideas and policy instruments. *European Political Science Review*, 5, pp 133-150.
- Hoareau, Cecile , Jo Ritzen and Gabriele Marconi (2013). Higher education and economic innovation, a comparison of European countries, *IZA Journal of European Labor Studies*, 2:24.
- Jacqmin, Julien and Mathieu Lefebvre (2015). "[Does sector-specific experience matter? The case of European higher education ministers](#)", [Working Paper BETA](#) (Bureau d'Economie Théorique et Appliquée), 2015-07, UDS, Strasbourg.
- Keating, Michael (2009). Putting European political science back together again. *European Political Science Review*, 1, pp 297-316.
- Koulouris, A, V. Moniarou-Papaconstantinou and D. Kyriaki-Manessi (2014). Austerity Measures in Greece and their Impact on Higher Education, [Procedia - Social and Behavioral Sciences](#), Nov. pp 1-9.

Kwiek, M. and P. Maassen (2013). Higher Education in Turbulent Times, Chapter 9, Concluding Reflections, in: In: Kwiek, M. and P. Maassen (eds), *National Higher Education Reforms in a European Context: Comparative Reflections on Poland and Norway*. Frankfurt am Main: Peter Lang Verlag. pp. 227-242.

Kwiek, M. (2012). Universities and Knowledge Production in Central Europe, *European Educational Research Journal*, 11 (1): 111-126.

Lefkofridi, Z. and P. Schmitter (2015). Transcending or Descending? European Integration in Times of Crisis. *European Political Science Review*, 7, pp 3-22.

Mazzucato, M. and C. Penna (2015). [Mission-Oriented Finance for Innovation](#), New Ideas for Investment-Led Growth, Policy Network.

Mettler, S. (2014). *Degrees of Inequality: How the Politics of Higher Education Sabotaged the American Dream*, New York, Basic Books.

Moran, A. (2012). Crisis as catalyst for change: re-energizing teacher education in Northern Ireland. *Educational Research*, 54 (2), 137-147.

Moropoulou, Antonia and Pieter de Vries (2013). "On the Problems, Challenges and Prospects for the European Higher Engineering Education arising from the global economic Crisis" In: Come, F., ea. SEFI@40 Driving Engineering Education to Meet Future Challenges. Brussels. Pp. 81-85.

Naim, Moses (2013). *The End of Power*, Basic Books.

OECD (2014). *Education at a Glance*, OECD.

Putnam, Robert D. (2000). *Bowling Alone: The Collapse and Revival of American Community*, Simon and Schuster.

Putnam, Robert D. (2015). *Our Kids; The American Dream in Crisis*, Simon and Schuster.

Rae, D. (2010). Universities and enterprise education: responding to the challenges of the new era, *Journal of Small Business and Enterprise Development*, 17 (4): pp. 591-606.

Ritzen, Jo, Gabriele Marconi and Simone Sasso (2014a). University policy needs to beef up for Europe to be more innovative, Technical Report, [www.empowereu.org](http://www.empowereu.org).

Ritzen, Jo, Gabriele Marconi and Simone Sasso (2014b). University policy needs to beef up for Europe to be more innovative, Policy Report, [www.empowereu.org](http://www.empowereu.org).

Ritzen, Jo, 2015, University Policy, Innovation and Employment, International World of Labor (to appear end 2015)

Rothstein, Bo, Marcus Samanni and Jan Teorell (2012). Explaining the welfare state: power resources vs. the Quality of Government. *European Political Science Review*, 4, pp 1-28.

Santamaría, L., M. Diaz and F. Valladares, (2013). Dark Clouds over Spanish Science, POLICYFORUM 14 June 2013, Science, 1292, [www.sciencemag.org](http://www.sciencemag.org).

Skrbinjek, V. and D. Lesjak (2014). Changes In Higher Education Public Funding During Economic And Financial Crisis, Conference: Human Capital without Borders, Postoroz, Slovenia.

Ritzen, Jo (2010). A Chance for European Universities (translated in Arabic, German, Russian and Korean), Amsterdam University Press.

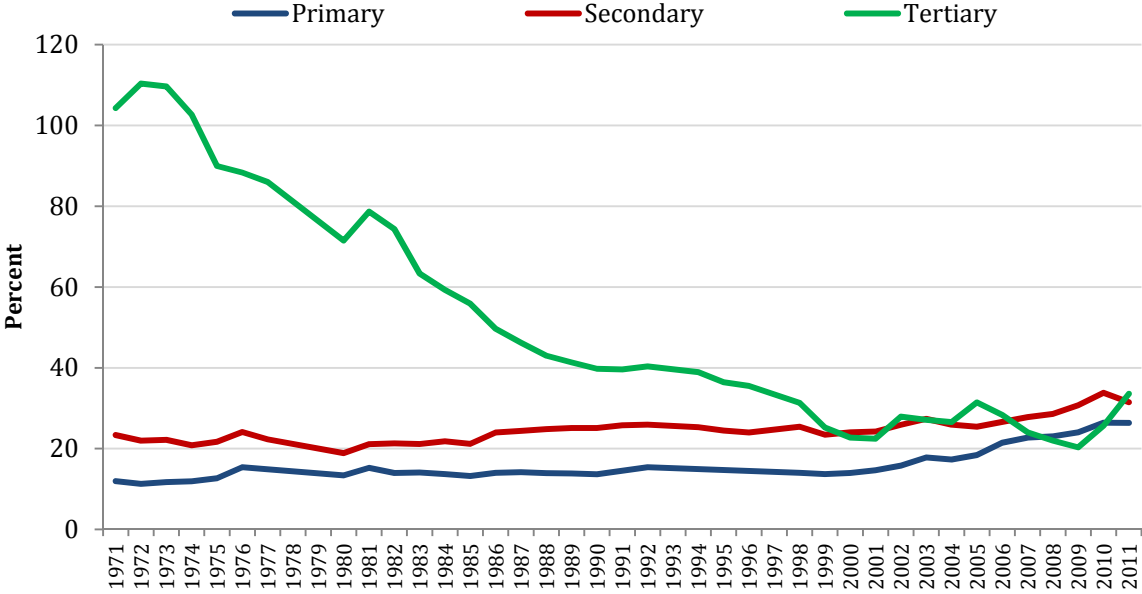
Scharpf, Fritz W. (2009). Legitimacy in the multilevel European polity, [European Political Science Review](#), 1(2), pp 173-204.

Svallfors, Stefan (2013). Government quality, egalitarianism, and attitudes to taxes and social spending: a European comparison. *European Political Science Review*, 5, pp 363-380.

Teney, Céline, Onawa Promise Lacewell and Pieter De Wilde (2014). Winners and losers of globalization in Europe: attitudes and ideologies. *European Political Science Review*, 6, pp 575-595.

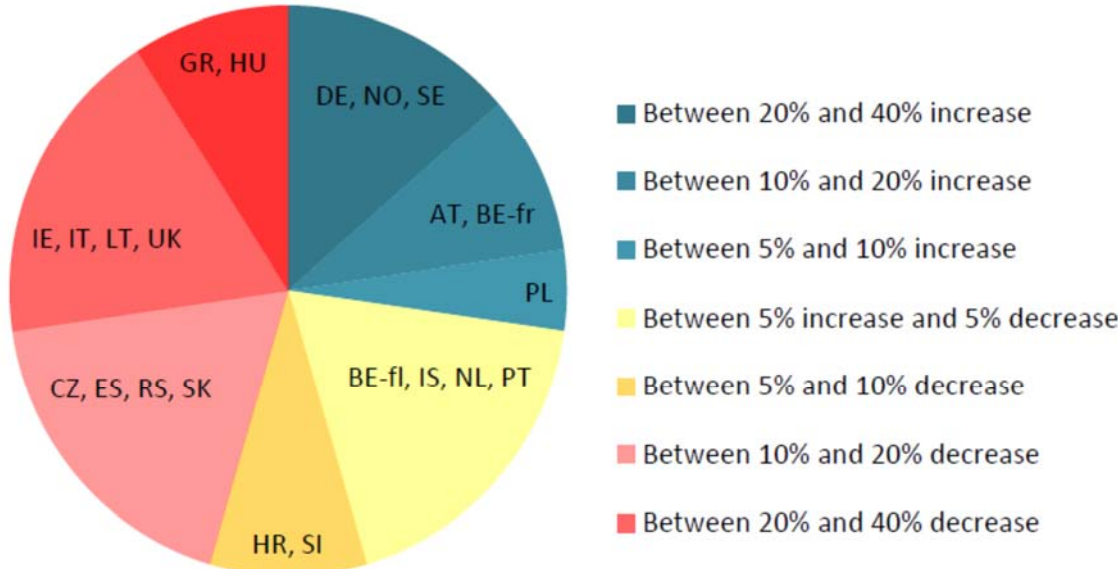
Warren, Mark E. (ed.) (1999). *Democracy and Trust*, Cambridge University Press.

**Figure 1: UK Government expenditure in % of GDP per capita**



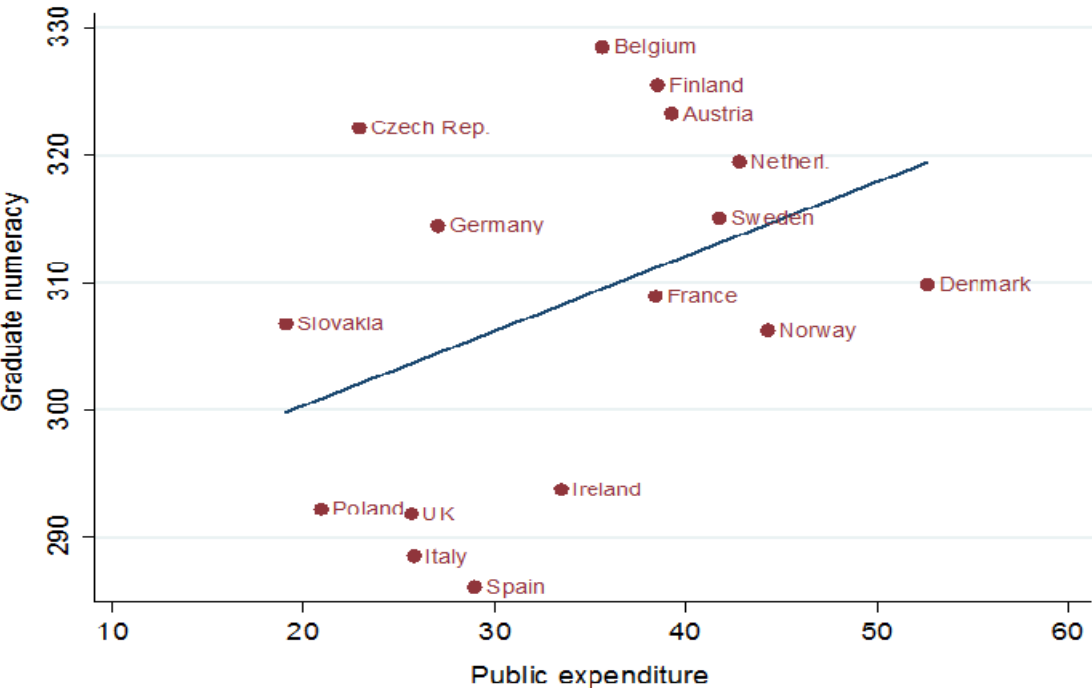
Source: Unesco Institute of Statistics

**Figure 2: Evolution of public funding 2008-2014 (adjusted for inflation)**



Source: EUA, 2014, p. 9

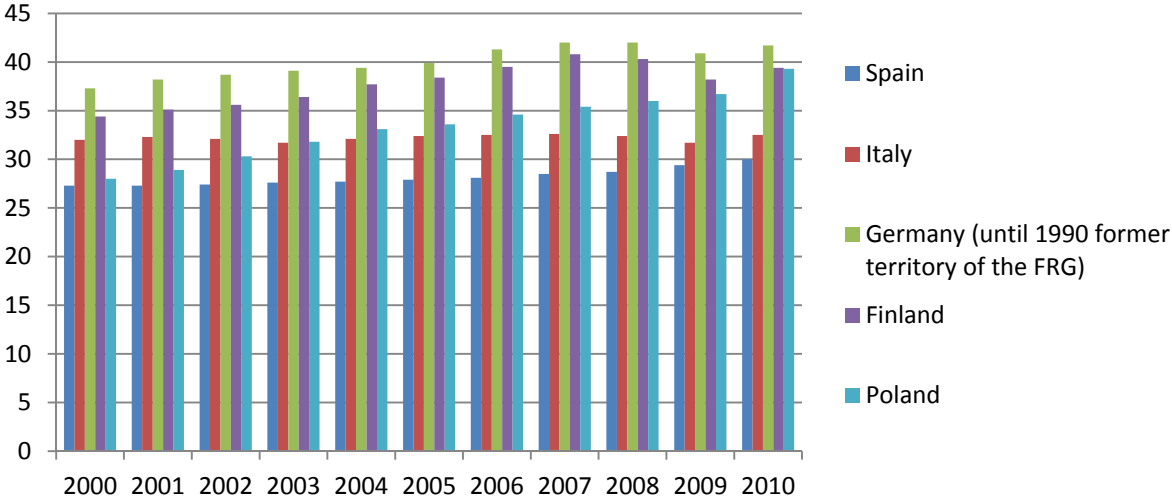
**Figure 3: Graduate competences and university funding, 2010, 17 European countries**



**Y-axis:**  
**Graduate numeracy**, average score graduates (ISCED 5-6) 25-34 years old.  
**X axis:**  
**Public expenditures**, expenditure per student as a percentage of GDP per capita.

Sources: PIAAC data and data from Empower European Universities ([www.empowereu.org](http://www.empowereu.org))

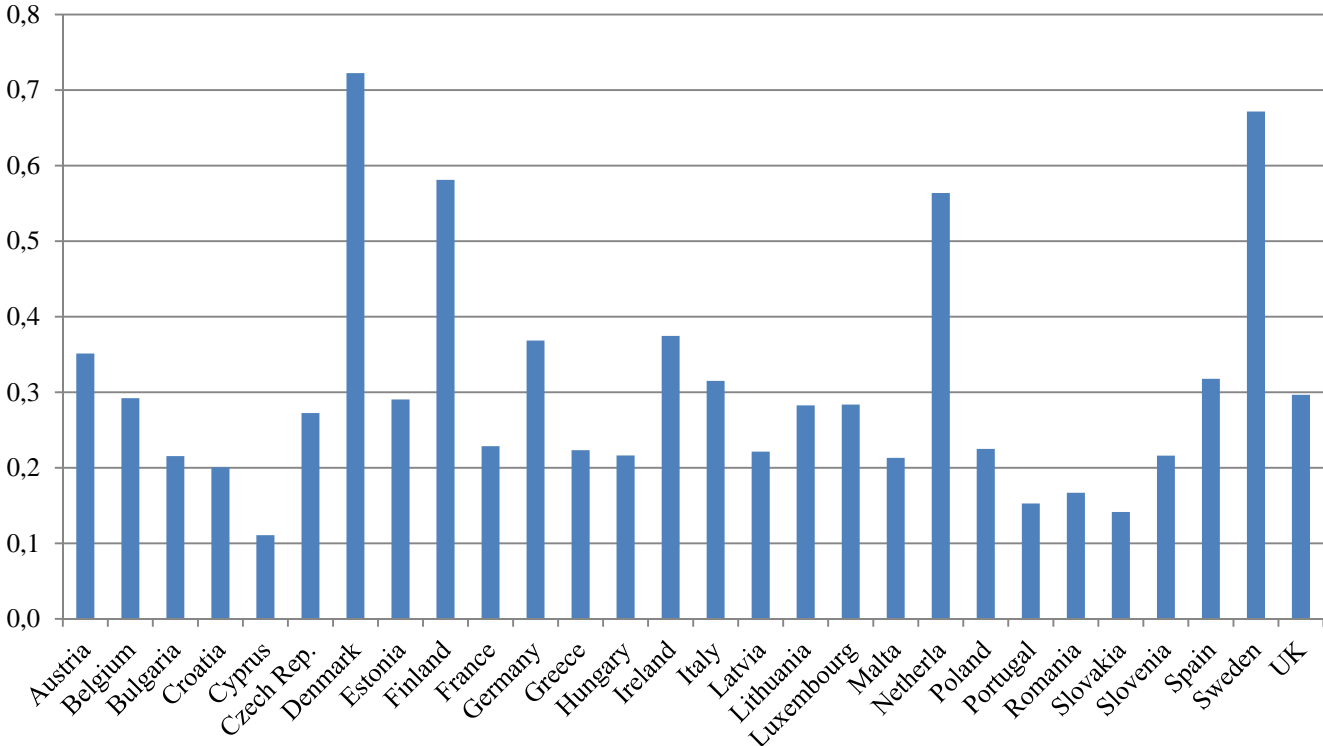
**Figure 4: Labor productivity 2000-2010**



Source: <http://ec.europa.eu/eurostat/en/web/products-datasets/-/TEC00116>



**Figure 5: Proportion reporting that “most people can be trusted”, by country, average over 1999-2008**



Source: Integrated Values Surveys 1981-2014 constructed from the EVS Longitudinal Data File 1981-2008 and the World Value Survey 1981-2014 official aggregate