BaLance

Towards Sustainable Financial Management of Cambodian Universities

Analysis of Financial Management Practices

T.1.2 - Benchmarking of Current Financial Models in European Union Member States Higher Education Systems

D1.2.2 Report on EU Financial Models

November, 2019

Co-funded by the Erasmus+ Programme of the European Union

Table of contents

Co-funded by the Erasmus+ Programme of the European Union

Co-funded by the Erasmus+ Programme of the European Union

1. FOREWORD

Analysis of Financial Management (FM) Practices

Over the last few decades, a continuous process of systemic governance change and funding system reforms have characterized Higher Education (HE) around the world. The same governance template - variously defined as steering at a distance, super-market model and supervisory model - seems to have been adopted under similar external and internal pressures, notwithstanding different contexts and legacies. There have been a few points of departure in implementation. For example, in Continental Europe, more institutional and financial autonomy have been given to the universities and different methods of central control and systemic address have been introduced. At the same time, in the Anglo-Saxon countries, the historically rooted institutional autonomy has undergone systematic constraints and it has been addressed by governmental policies. Overall, the traditional governance models have been significantly changed.

Also, the funding system (generally public and with feeble ex post evaluation procedures of performance) was stressed with many innovations. This process involves an apparent common trend characterized by a different role of the State and by the introduction of different logics of systemic coordination. This process of reforming systemic governance and funding in HE has been characterized by a dynamic of policy diffusion that has progressed toward a common model. In accordance with such a model, a renewed role of the State has resulted from mixing the following tools together: i) financial incentives to pursue specific outputs and outcomes in teaching and research, ii) student loans, iii) accreditation, iv) ex post evaluation conducted by public agencies, v) benchmarking and provisions by the law for greater institutional autonomy.

However, although it is a common trend representing a convergence of governmental approaches, the steering at a distance / supermarket / supervisory mode appears to be used as an umbrella category and therefore does not fully address what is really emerging. In fact, the less direct involvement of the State in HE systems does not mean the absence of regulation, and it can create different types of governance according to the way in which the new, soft way to steer HE systems is designed and

organized. Furthermore, all of the reforms have combined elements of hierarchical, market- and network-based logics but not the same policy combinations have been adopted, and this renders labels such as steering at a distance, supermarket and supervisory not very useful without any other type of specification.

This Report is aimed at attempting to focus on the analytical problem of identifying the features of the actual models of governance and funding in HE (and thus to discharge their intrinsic hybridity). The main components of the design of the adopted governance models will be checked, with regards to policy instruments together with two main financial dimensions (the amount of public funding and the weight of tuition fees in funding the systems). The aim will be the feasibility of a benchmarking useful to improve funding performance in Cambodian universities. The operationalization of policy instruments is achieved in a very detailed way by comparing the legislation on HE approved in European countries in past years. Based on a fourfold typology of substantial policy instruments (regulation, expenditure, taxation and information), many instrumental shapes were identified (according to the empirical literature). The result is the instrumental composition of governmental choices when designing the arrangements of systemic governance and funding reforms in order to assure financial resources to universities.

The concept of governance is conceptualized with regards to policy instruments and two financial dimensions, and thus governance reforms are conceptualized as processes through which different types of policy instruments are mixed together over time. In the section devoted to case studies, some empirical evidence is presented with respect to the basic data on financial sources (whereas public funding and tuition fee systems are conceived as specific types of policy instruments to be analysed separately because of their specificity).

Universities across Europe today face a challenging and complex financial situation in which traditional models of funding have been transformed and continue to evolve. Public sources in many countries are not as generous as they were in the past and often have become more demanding and competitive. The changes are particularly significant in Europe due to the traditional reliance of universities on public funding. The current economic and financial crisis has exacerbated even further these problems, with growing stress on the sustainability of university funding regimes and

mounting pressure to explore new sources of income. The efficiency of funding in terms of the capability to meet certain policy goals in a cost-effective way is therefore becoming increasingly important. Special attention will be devoted to the PBF (Performance-Based Funding).

Policy responses to these challenges take many forms. One way is to create a link between part of the public funding for universities and performance, using proxies for output such as the number of graduates or research contracts obtained, instead of pure input-based funding. Others favour system restructuring – for instance via institutional mergers – or try to foster differentiation of institutional profiles and the emergence of excellence hubs through specific funding schemes with a view to enhancing international competitiveness.
One of the objectives of these measures is to enhance efficiency and make universities achieve more with no extra resources. This poses a number of questions with regard to university funding and governance. It is important to assess in particular the impact such measures have on institutions themselves, on their teaching and research activities, as well as on their interaction with society and different stakeholders.

In several European countries, the university sector started to face these pressures earlier than the HE sector and the implementation of reforms has been ongoing for longer. This makes it possible to assess their impact with a view to extracting some lessons potentially transferable to the HE sector in other countries in the world. Similar policy responses have indeed been applied in both cases, such as changing funding modalities and fostering mergers. Key elements of comparison between EU HE sectors are included in the executive summary in the next pages.

On the basis of the evidence gathered throughout the duration of the project, recommendations are presented to BALANCE partners in Cambodian university system. They are aimed at supporting the relevant Balance university partners in developing strategies on how to sensibly use the respective measures with a view to mitigate the risks and reap the benefits.

The objective of this Report is to contribute to the improved design and implementation of HE funding policy and, in so doing, to enhance funding efficiency in the sector.

The analysis represented by this Report will support the achievements and the findings planned by the BALANCE project, which address the funding efficiency in HE as the main focus of surveys and activities. The project particularly includes the mapping of the use of funding efficiency measures such as performance-based funding, institutional mergers and excellence schemes across Europe. The Report is based on empirical data collection, questionnaires and interviews with experts across Europe. This was complemented by an academic survey and literature review.

To ensure that these developments are seen in a wider context, the research also included a cross-sectoral comparative element exploring lessons learnt from the university sector, and faces comparable constraints – especially growing demand, labour intensity, rising costs, more assertive users and as a result a growing emphasis on quality and transparency.

The analysis based on the literature review was conducted by the team of DISPO - Department of Political Sciences at UNIGE (University of Genova, Italy), Prof. Andrea Mignone and Dr. Monica Penco, supported by Mr. Angelo Musaio and Mario Picasso of UNIGE Development & Promotion Area.

2. PART I: METHODOLOGICAL NOTE AND MACROECONOMIC DATA

2.1. METHODOLOGICAL NOTE

University governance and the relationship between State and HE institutions are issues that have generated intense debate and reflection over the past decade. Institutional autonomy is widely considered as an important requirement for modern universities to be able to develop institutional profiles, to find financial resources, and to deliver efficiently on their missions. Discussions around governance and financial autonomy emerged across EU in different contexts as a response to diverse challenges. As a result, the need became manifest to develop a common terminology and structure to address such an important topic, with an increasing demand for comparability and benchmarking across borders.

When developing this report, relevant literature defining "financial autonomy" in various countries was studied. It was noticed that in some countries the meaning of this term is specified in the actual legislation regarding education or HE. Large differences in defining this term from one country to another or from one author to another have not been encountered. All unanimously declare that financial autonomy implies the right of the university to organize its activity independently and to self-manage financially respecting the legislation in force. The criteria taken into account when defining the concept differ insignificantly. Therefore, in order to exclude certain differences in this respect we started with the definition of financial autonomy of universities and the criteria submitted by scientific literature on this topic as the capacity of universities to decide on:

- the extent they can accumulate reserves and keep extra budgetary sources;
- the establishment of tuition fees;
- borrowing money from financial markets;
- investing in financial products;
- issuing shares and bonds;
- owning land and buildings.

In addition, when establishing specific criteria, the experience of countries with developed financial autonomy was taken into consideration.

This report aims to perform a reference analysis of financial autonomy in EU partner countries, namely in eight case studies. Data were collected using predefined templates. Before sending questionnaires in a target country, the authors collected and analysed openly available information on financial autonomy relevant to the country and identified problems as well as questions related to various aspects of financial autonomy that could not be clarified when consulting these available data sources. At the same time, the authors propose possible sources of information. The collected consolidated data regarding financial autonomy in target countries are presented in the second part of the report. Based on data analysis, a number of benchmarking criteria and with regard to financial autonomy were outlined. The exam of each criteria focuses on their definitions, concepts, separation between government and universities, possible links and relationships of financial autonomy with other types of autonomy.

Actual macroeconomic GDP and inflation data as well as conversion rates for non-Eurozone countries was sourced from Eurostat. Other official sources of qualitative data, including national HE decrees, ministerial portals and reports were used to complete the analysis of public funding trends in Europe.

In certain cases that seemed most relevant the Government - University delimitation was highlighted. In particular, there was not indicated the intersection with other components of university autonomy just because each analysed criterion cannot be separated from the academic, organizational or human resources components of university autonomy.

Data was collected from EU university systems through analysis of papers and documents (see bibliography), many questionnaires, several rounds of consultation and interviews with EU universities managers, national university associations and complemented by institutional case studies obtained through reports and data published by governments and independent organizations. Due to the lack of comparable data for some aspects of the analysis, not all systems are included in all tables, figures or overviews.

The analysis takes into account developments over the last two decades with a focus on more recent evolutions since the beginning of the economic crisis in 2008. Since 2008, comparative data has been available on the evolution of the amount of public funding to HE institutions through the Annual EUA (European University Association)

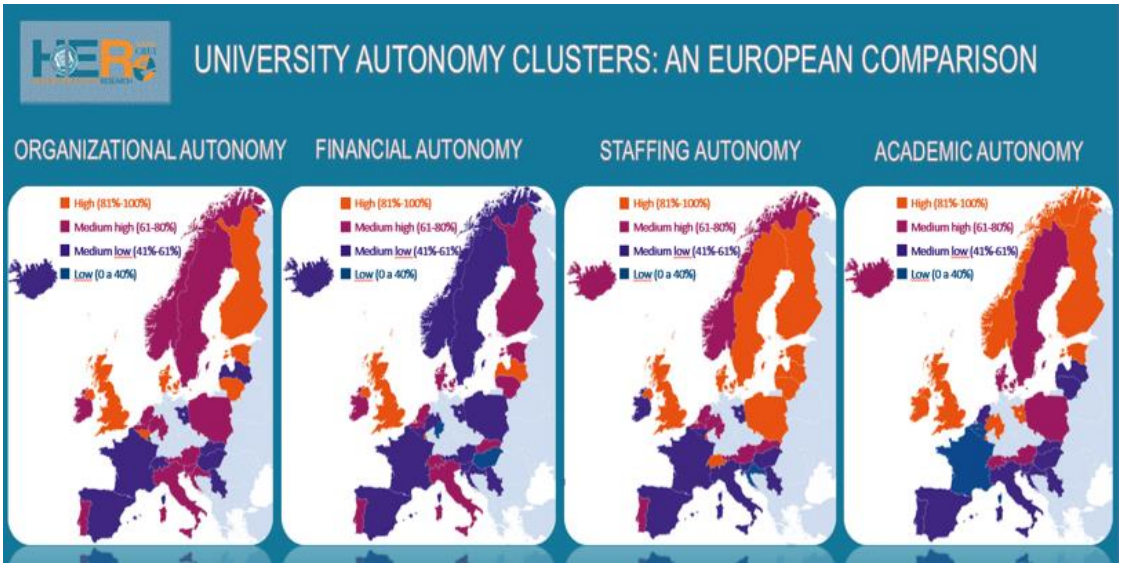
Public Funding Observatory. This helps to put into perspective the changes in the modes of public funding and the evolution of performance-based elements, and thus strengthens the analysis. The report draws on these different sources of information and presents EUA's analysis of the use of performance-elements in university funding across Europe and its impact on institutions.

During the drafting of the Report, we have devoted specific attention to the results of a very useful instrument adopted by EUA that is the Balanced Scorecard (BSC) tools derived from public management accounting. They offer a methodology to collect, compare and weight data on university financial autonomy. A core set of autonomy indicators was developed to offer an institutional perspective. The EUA BSC tools are based on more than 30 different core indicators in four key dimensions of autonomy. These include:

- organizational autonomy (covering academic and administrative structures, leadership and governance);
- financial autonomy (covering the ability to raise funds, own buildings, borrow money and set tuition fees);
- staffing autonomy (including the ability to recruit independently, promote and develop academic and non-academic staff);

academic autonomy (including study fields, student numbers, student selection as well as the structure and content of degrees.

IMAGE 1. UNIVERSITY AUTONOMY CLUSTER



High (81%-100%), medium high (61%-80%), medium low (41%-60%), low (0%-40%)

By generating information on the current state of university funding autonomy and governance reforms, the Scorecard allows a more successful benchmarking of national policies with regard to university autonomy as well as the exchange of good practice. On one hand, the Scorecard provides institutions and policy-makers with data, which inform decision-making processes and feed into initiatives aimed at driving the modernisation of HE. On the other hand, it contributes to raising awareness in the university sector of the changes needed to create a regulatory environment favourable to university autonomy.

In the following pages, we try to offer a benchmarking analysis of EU FM of universities: governance and funding, budgeting, accounting and full costing. The final part is devoted to analyse some case studies with references to European Union countries.

2.2. MACROECONIMIC DATA

In this section, we analyse some macroeconomic data about the EU economy and national accounts, and some general data about the different systems of funding of HE in EU, in order to describe the socioeconomic environment in which universities are embedded.

A macroeconomic overview

What are the main trends of the economy in EU Member States since 2000? How has Gross Domestic Product (GDP), investment and consumption evolved? Have we faced high inflation or have prices been stable? Is unemployment decreasing or not? The most common indicator to measure economic activity is GDP. In the period 2000 to 2018, the annual GDP growth in the EU was quite volatile. Between 2001 and 2007, the economy grew at an annual rate of between +1% and +3%. From 2008 to 2013, the EU economy was strongly affected by the financial crisis, with GDP dropping by more than 4% in 2009 and then again slightly in 2012. Since then, the economy has progressively recovered, with annual growth rates around +2% between 2014 and 2018. A similar pattern was observed overall for the euro area and the EU Member States. However, not all Member States have recorded the same magnitude of fluctuations. The impact of the financial crisis on GDP was in particular deeper in Greece, Croatia, Spain, Italy, Portugal and Cyprus with several years of consecutive negative growth. In the EU, investment and consumption follow the same phases as GDP, investment however with larger fluctuations. With the recovery from the financial crisis, investment and consumption grew steadily between 2015 and 2018: at around +4% and +2% per year respectively. Inflation in the EU is measured by the evolution of the Harmonised Index of Consumer Prices. Between 2001 and 2007, the annual inflation rate stood at around +2% in the EU. From 2008 to 2011, the inflation rate registered stronger variations from one year to another, while it slowed down progressively from 3% in 2011 to 0% in 2015, before reaching 1.9% in 2018. This pattern was followed largely by the euro area and most of the Member States. In 2018, the highest inflation rates were observed in Romania (4.1%), Estonia (3.4%), Hungary (2.9%), Bulgaria and Latvia (both 2.6%), and the lowest in Denmark and Ireland (both 0.7%), Greece and Cyprus (both 0.8%).

Large decrease in long-term interest rates since 2011

Long-term interest rates can be measured through the evolution of long-term bond yields.

In the EU, the rate was 5.3% at the beginning of the millennium, fluctuating between 4% and 5% until 2011. Since then it steadily decreased down to 1.1% in 2016 and after that increased to 1.4% in 2018. The Member States followed quite the same pattern. In 2018, the rates ranged from 0.3% in Lithuania, 0.4% in Germany and 0.5% in Denmark to 4.7% in Romania, 4.2% in Greece and 3.2% in Poland. As regards exchange rates, the euro has become stronger against the UK£ (from 0.61 UK£ for 1€ in 2000 to 0.88 UK$ in 2018) and the US$ (from 0.92 US$ for 1€ in 2000 to 1.18 US$ in 2018), while it has become weaker against the CHF (from 1.56 CHF for 1€ in 2000 to 1.16 CHF in 2018). Unemployment on the decline after being relatively stable at around 9% between 2000 and 2005, the unemployment rate fell to 7.0% in 2008. Since then the rate in the EU rose continuously to attain a peak of 10.9% in 2013. In line with the economic recovery, unemployment fell subsequently to reach 7.6% in 2017. A similar trend is observed for male, female and youth unemployment, however with slightly higher rates for women than men and around double the rate for young people. In recent years, the euro area and all Member States have also recorded a decreasing unemployment rate. However, large differences still exist between Member States, with rates ranging from 2.2% in Czechia, 3.4% in Germany and 3.7% in Hungary and Malta to 10.6% in Italy, 15.3% in Spain and 19.3% in Greece in 2018.

Large differences in price changes at detailed level

While the overall inflation rate can be considered as moderate in the EU since the start of the millennium, significant price variations are noticeable at a detailed level. Between 2000 and 2018, prices in the EU have risen by 39% overall. The highest increases were registered for «alcoholic beverages and tobacco» as well as for «education» where prices rose by more than 90%. «Housing, water, electricity and gas» as well as «restaurants and hotels» followed with growth rates of 60% or more. Prices for «clothing and footwear» remained nearly stable, while prices for «communications» decreased by more than 20%. Looking at detailed products, the highest increases were observed in particular for «tobacco» (+167% between 2000 and 2018), «gas» (+102%), «solid fuels» (+101%), «alcoholic beverages and tobacco» (+99%) and «jewellery, clocks and watches» (+98%). Lower increases

were observed for e.g. «cars» (+10%), furniture (+24%), «books» (+28%) and «wine» (+33%). On the other hand, prices for «audio visual, photographic and information processing equipment» decreased by 71%, «telephone equipment and services» by 26% and «games and toys» by 21%. Prices for «coffee» (+35%), «milk, cheese and eggs» (+42%) and «meat» (+43%) rose nearly at the same speed as the overall price increase of the EU in the period 2000 to 2018.

More people in work

Since the start of the millennium, more and more people are in work, while working conditions have changed. Strong increase in female employment rate In the period between 2002 and 2018 the employment rate for the total working age population increased from 67% in 2002 to 73% in 2018, mainly due to the high increase of the employment rate of women (from 58% to 67%). For men, the rate slightly increased from 75% to 78%. However, for young people aged 20 to 24, the pattern was different as the employment rate was 53% in 2002, after that fluctuated between 55% in 2008 to 48% in 2012 to 2014 and was back at 53% again in 2018. The pattern of an increasing employment rate can also be seen in the euro area and in a large majority of Member States with the largest rises in Bulgaria, Poland and Malta. In 2018, the highest employment rates for women were found in Sweden (80%), Lithuania (77%), Germany and Estonia (both 76%), and for men in Czechia (87%), Malta (86%) and Sweden (85%), the UK, the Netherlands and Germany (all 84%). In all Member States, the employment rate for men was higher than for women. Temporary and part-time employment increasing in the period 2002 to 2018, the possibility to find a job with an unlimited duration has slightly reduced with the share of temporary employees in the EU increasing from 11% in 2002 to 13% in 2018. Temporary employment in 2018 was nearly the same among women (14%) as among men (13%) in the EU. The total share of temporary employees varied among the Member States, with the highest shares observed in Spain (26%), Poland (24%), Portugal (22%) and Croatia (19%), and the lowest in Romania and Lithuania (both 1%), Estonia and Latvia (both 3%). Another important change in working conditions is the development of part-time work. In the EU, the proportion of those working part-time rose from 15% in 2002 to 19% in 2018. Part-time employment in 2018 was much more common among women (31%) than among men (8%) in the EU. The total share of part-time workers varied among the Member States, with the highest observed in the Netherlands (47%), Austria (28%), Germany (27%), Belgium (24%)

and UK (23%), and the lowest in Bulgaria (2%), Hungary (4%) and Croatia and Slovakia (both 5%). In the following pages some graphs with macroeconomic data.

Source: EUROSTAT, *The European economy since the start of the millennium. A statistical portrait*, 2019 edition.

IMAGE 2. GROSS DOMESTIC PRODUCT

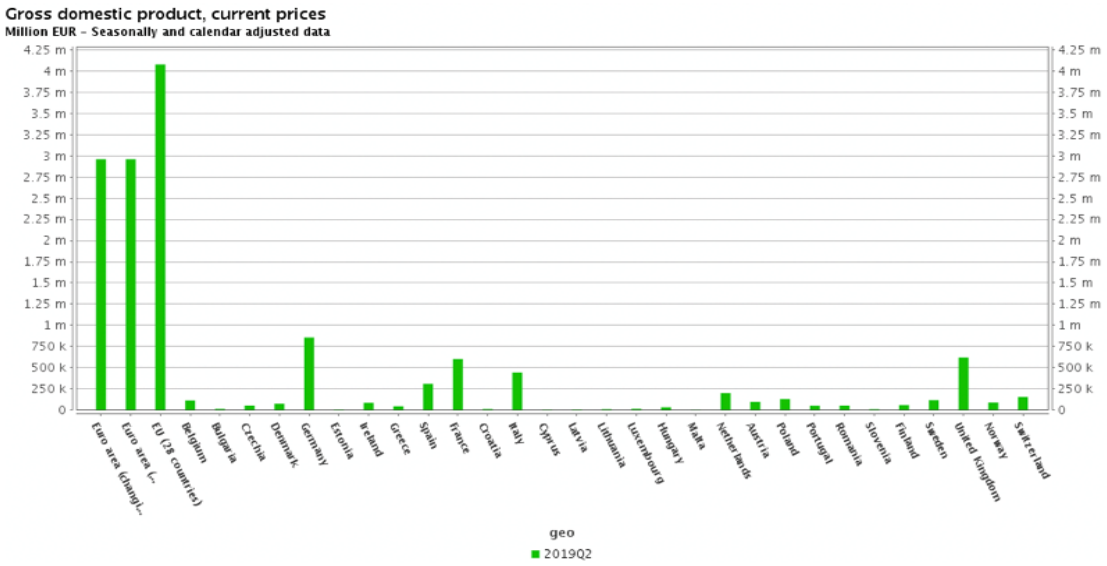
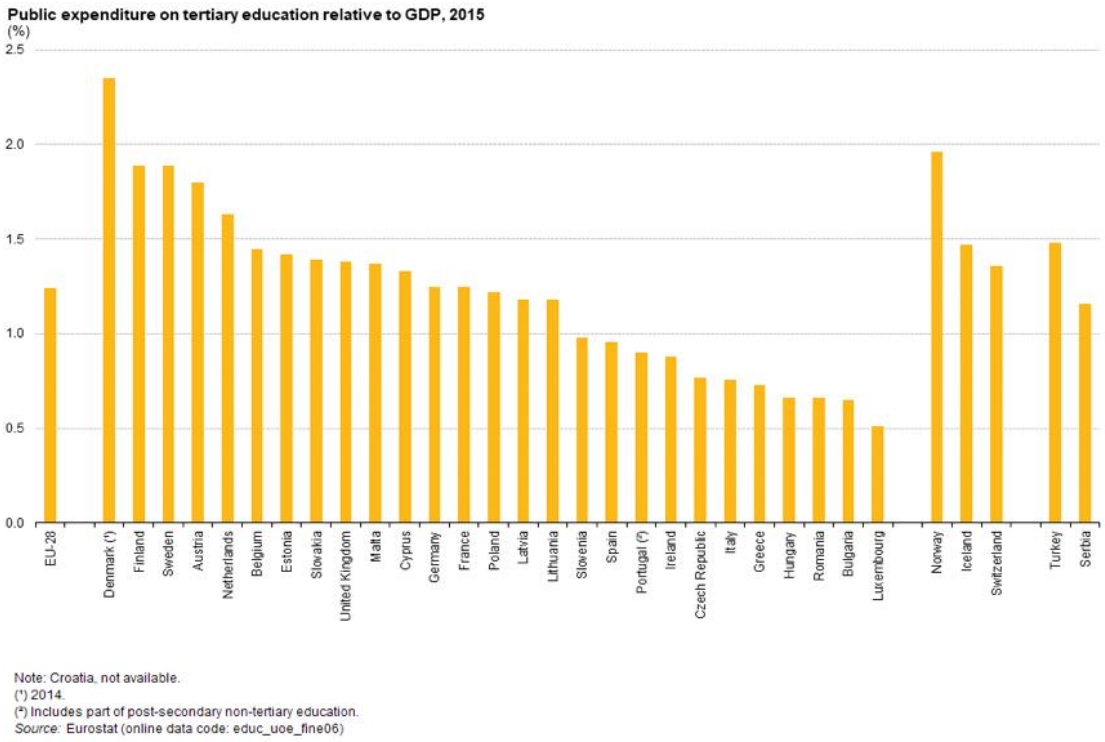


IMAGE 3. PUBLIC EXPENDITURE ON TERTIARY EDUCATION



Note: Croatia, not available.
(1) 2014.
(2) Includes part of post-secondary non-tertiary education.
Source: Eurostat (online data code: educ_uoe_fine06)

SOURCE: EUROSTAT, LAST UPDATE 10.10.2019

IMAGE 4. PUBLIC FUNDING TO UNIVERSITIES AND GDP GROWTH

Public funding to universities and GDP growth (Average from 0% to 9%)

SOURCE: EUA PUBLIC FUNDING OBSERVATORY, REPORT 2018.

The system where funding increased on average over the period 2008-2017 include Austria, Denmark, Germany, Norway, Luxembourg and Switzerland. These countries supported their universities more than their GDP levels. On the contrary, Portugal proves its commitment to invest in HE despite a GDP growth level close to zero.

IMAGE 5. NUMBER OF TERTIARY EDUCATION STUDENTS BY LEVEL AND SEX

Number of tertiary education students by level and sex, 2016
(thousands)

	Tertiary total			Short-cycle tertiary			Bachelor's or equivalent			Master's or equivalent			Doctoral or equivalent		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
EU-28	19 590.0	9 009.7	10 580.3	1 421.9	688.3	733.6	12 004.5	5 604.5	6 400.0	5 408.7	2 322.6	3 086.1	754.9	394.3	360.6
Belgium	508.3	225.2	283.1	24.3	9.0	15.4	369.3	162.4	206.9	98.0	44.9	53.1	16.7	8.9	7.8
Bulgaria	266.7	122.9	143.8	–	–	–	178.4	85.5	92.9	81.6	34.2	47.4	6.8	3.3	3.5
Czech Republic	371.9	158.8	213.2	1.0	0.4	0.6	221.2	94.4	126.8	125.6	50.5	75.2	24.2	13.6	10.6
Denmark	314.8	137.4	177.5	34.7	18.4	16.3	195.7	81.5	114.2	74.6	32.7	42.0	9.8	4.8	5.0
Germany	3 043.1	1 574.8	1 468.3	0.4	0.1	0.2	1 832.5	990.8	841.7	1 013.3	474.2	539.1	197.0	109.7	87.3
Estonia	51.1	21.1	30.0	–	–	–	33.1	14.2	19.0	15.1	5.7	9.4	2.8	1.2	1.6
Ireland	218.4	106.0	112.4	16.5	7.8	8.7	164.3	81.4	82.9	29.2	12.7	16.5	8.4	4.1	4.3
Greece	709.5	365.3	344.2	–	–	–	618.5	322.8	295.8	57.5	24.3	33.2	33.5	18.3	15.2
Spain	1 968.7	920.1	1 048.6	368.6	191.5	177.1	1 207.3	554.6	652.6	337.2	145.9	191.3	55.6	28.0	27.6
France	2 480.2	1 130.6	1 349.5	496.7	253.5	243.2	1 025.4	428.8	596.7	890.4	412.5	477.9	67.7	35.9	31.8
Croatia	162.0	69.9	92.1	0.1	0.0	0.0	98.6	45.8	52.7	60.2	22.7	37.6	3.2	1.4	1.8
Italy	1 816.0	799.5	1 016.4	8.3	6.1	2.2	1 075.5	494.1	581.4	699.2	283.0	416.2	32.9	16.3	16.7
Cyprus	40.3	18.3	22.1	3.7	2.2	1.5	20.3	10.1	10.2	15.1	5.4	9.7	1.3	0.5	0.7
Latvia	84.3	34.5	49.8	15.2	6.1	9.1	49.4	21.4	28.0	17.4	6.0	11.4	2.3	0.9	1.4
Lithuania	133.8	57.7	76.1	–	–	–	102.4	46.4	56.0	28.6	10.2	18.4	2.7	1.1	1.6
Luxembourg	7.0	3.4	3.5	0.6	0.3	0.4	3.2	1.5	1.6	2.5	1.2	1.3	0.6	0.4	0.3
Hungary	295.3	134.8	160.5	12.0	4.5	7.5	200.0	94.3	105.7	76.1	32.4	43.7	7.3	3.6	3.7
Malta	13.8	6.3	7.5	2.1	0.9	1.2	7.9	3.6	4.3	3.6	1.7	1.9	0.1	0.1	0.1
Netherlands	836.9	402.3	434.6	20.4	8.9	11.5	635.9	307.8	328.1	165.6	78.0	87.6	15.1	7.6	7.4
Austria	431.1	202.4	228.7	77.4	36.1	41.3	192.5	91.0	101.5	137.8	62.7	75.1	23.5	12.6	10.9
Poland	1 600.2	655.5	944.7	0.3	0.1	0.3	1 058.9	463.1	595.9	497.7	172.8	324.9	43.2	19.6	23.6
Portugal	343.1	161.1	182.1	6.4	4.1	2.3	202.2	93.2	108.9	115.5	54.7	60.8	19.1	9.0	10.0
Romania	535.2	246.8	288.4	–	–	–	352.7	171.0	181.7	165.2	67.0	98.2	17.3	8.7	8.5
Slovenia	80.8	34.2	46.6	11.2	6.6	4.6	45.3	18.7	26.6	22.0	7.9	14.1	2.3	1.1	1.2
Slovakia	167.3	68.2	99.0	2.8	1.0	1.8	92.6	38.3	54.3	63.7	24.6	39.1	8.2	4.3	3.9
Finland	297.2	138.8	158.3	–	–	–	215.2	103.5	111.7	62.4	26.2	36.3	19.5	9.2	10.3
Sweden	426.2	173.1	253.1	24.5	12.6	11.9	243.0	89.4	153.6	138.0	60.2	77.7	20.7	10.9	9.8
United Kingdom	2 387.3	1 041.0	1 346.3	295.1	118.2	176.9	1 563.5	695.1	868.4	415.7	168.6	247.1	113.0	59.0	54.0
Iceland	18.6	6.7	11.9	0.5	0.2	0.3	13.1	5.0	8.1	4.6	1.4	3.2	0.5	0.2	0.3
Liechtenstein	0.8	0.5	0.3	–	–	–	0.4	0.2	0.1	0.3	0.2	0.1	0.1	0.1	0.0
Norway	277.4	116.1	161.4	9.0	7.5	1.5	196.1	76.8	119.3	64.6	28.0	36.5	7.8	3.8	4.0
Switzerland	295.1	148.8	146.4	4.4	1.7	2.8	199.6	101.3	98.4	66.7	32.7	34.0	24.4	13.1	11.3
The former Yugoslav Republic of Macedonia	63.3	28.5	34.7	–	–	–	59.9	27.0	32.8	3.0	1.3	1.7	0.4	0.2	0.2
Serbia	251.2	112.2	139.0	–	–	–	200.8	92.0	108.8	40.2	15.8	24.4	10.1	4.4	5.7
Turkey	6 689.2	3 621.5	3 067.7	2 285.4	1 198.3	1 087.1	3 790.3	2 067.7	1 722.6	527.4	305.1	222.3	86.1	50.4	35.7

Source: Eurostat (online data code: educ_uoe_enrt01)

The educational attainment levels of the population have changed significantly: on average, younger people attain higher levels of education than older ones. In 2018, 80.6% of people aged 25–54 in the EU had attained at least an upper secondary level of education, compared with 65.8% of those aged 55–74. Those with tertiary educational attainment amounted to 35.2% of those aged 25–54 and 21.7% of those aged 55–74.

IMAGE 6. SHARE OF THE POPULATION BY EDUCATION ATTAINMENT LEVEL AND AGE

Share of the population by educational attainment level and selected age groups, 2018
(%)

	25–54 years			55–74 years		
	Low (ISCED 0–2)	Medium (ISCED 3–4)	High (ISCED 5–8)	Low (ISCED 0–2)	Medium (ISCED 3–4)	High (ISCED 5–8)
EU	19.4	45.4	35.2	34.2	44.1	21.7
Belgium	17.7	38.4	43.9	38.6	33.1	28.3
Bulgaria	16.7	53.6	29.7	24.1	54.6	21.2
Czechia	5.3	68.4	26.3	11.4	73.6	15.0
Denmark	16.3	41.0	42.7	27.8	43.8	28.4
Germany	13.3	56.6	30.1	14.9	59.3	25.8
Estonia	10.9	47.0	42.1	14.8	48.0	37.2
Ireland	12.7	36.2	51.0	39.6	32.8	27.6
Greece	20.7	44.5	34.8	52.9	28.4	18.6
Spain	35.7	23.5	40.9	61.9	16.9	21.3
France	16.8	42.1	41.2	36.5	40.6	22.9
Croatia	11.0	61.1	27.9	30.4	50.7	18.8
Italy	34.5	44.1	21.4	56.6	31.4	12.0
Cyprus	13.9	37.5	48.6	40.3	35.6	24.2
Latvia	10.3	53.0	36.7	10.4	64.5	25.0
Lithuania	5.9	48.3	45.8	7.4	65.0	27.6
Luxembourg	18.6	32.9	48.4	35.4	38.1	26.5
Hungary	13.8	58.9	27.3	22.9	59.1	18.0
Malta	39.9	29.0	31.1	74.0	16.5	9.5
Netherlands	17.4	41.1	41.5	37.7	36.8	25.5
Austria	12.8	51.6	35.5	23.7	54.0	22.3
Poland	6.2	57.7	36.2	16.5	68.4	15.1
Portugal	43.0	28.4	28.6	77.3	10.7	12.1
Romania	20.0	59.6	20.3	38.1	53.7	8.3
Slovenia	8.8	54.9	36.3	22.7	57.5	19.8
Slovakia	7.3	65.4	27.3	14.0	71.0	15.0
Finland	9.1	44.8	46.1	23.5	40.5	36.0
Sweden	13.0	40.7	46.3	23.8	44.8	31.4
United Kingdom (')	17.4	36.7	45.9	28.2	38.4	33.4
Iceland	19.7	32.7	47.5	33.7	37.6	28.7
Norway	16.0	37.6	46.4	20.7	47.2	32.1
Switzerland	10.3	42.9	46.8	16.7	52.2	31.1
Montenegro	11.4	64.0	24.6	25.7	53.9	20.3
North Macedonia	26.7	51.1	22.3	44.2	41.7	14.1
Serbia	15.4	58.8	25.7	34.3	48.3	17.4
Turkey	58.9	19.5	21.7	82.4	9.6	8.0

(') 55-74 years: low reliability.
Source: Eurostat (online data code: edat_lfs_9903)

IMAGE 7. STUDENT-ACADEMIC STAFF RATIONS IN TERTIARY EDUCATION

Student-academic staff ratios in tertiary education, 2016
(number of students per member of academic staff)

	Tertiary total	Short-cycle tertiary	Other tertiary
EU-28	15.0	:	:
Belgium	21.2	:	:
Bulgaria (1)	12.4	–	12.4
Czech Republic	18.9	11.1	18.9
Denmark (2)	11.2	23.2	10.5
Germany	12.1	12.5	12.1
Estonia	13.9	–	13.9
Ireland (3)	:	:	:
Greece	39.6	–	39.6
Spain	12.2	10.4	12.8
France (4)	17.5	10.3	18.9
Croatia	12.6	:	12.6
Italy	20.2	–	20.2
Cyprus	17.1	12.9	17.7
Latvia	18.4	19.5	19.6
Lithuania	16.3	–	16.3
Luxembourg (5)	7.6	11.0	7.6
Hungary	13.7	12.8	13.7
Malta	9.7	8.4	9.9
Netherlands	14.8	14.8	14.8
Austria	14.4	8.3	16.6
Poland	14.6	9.0	14.6
Portugal (6)	14.4	:	14.0
Romania (7)	18.7	–	18.7
Slovenia	15.3	18.5	15.0
Slovakia	15.1	8.7	15.2
Finland	15.3	–	15.3
Sweden	10.4	9.2	10.4
United Kingdom (7)	15.8	18.4	16.6
Liechtenstein	9.7	–	9.7
Norway (8)	10.2	11.5	10.2
North Macedonia	17.0	–	17.0
Serbia	23.9	–	23.9
Turkey	23.1	54.8	18.7

(1) Excluding Doctoral or equivalent students enrolled in scientific organisations.
(2) 2015.
(3) Independent private institutions and academic staff in government dependent private institutions: excluded.
(4) Private institutions: excluded. Short-cycle tertiary education: incomplete. Other tertiary: includes post-secondary non-tertiary education and a part of short-cycle tertiary education.
(5) Short-cycle tertiary education: 2015. Total: excludes short-cycle tertiary education.
(6) Other tertiary education and total tertiary education: includes post-secondary non-tertiary personnel giving courses in higher education institutions. Other tertiary education: 2014.
(7) Short-cycle tertiary and other tertiary education: 2014.
(8) Total and other tertiary education: 2014.
Source: Eurostat (online data codes: educ_uoe_perp04)

The following data in figures are important in order to evaluate the real value of different systems of fees and grants for university's students.

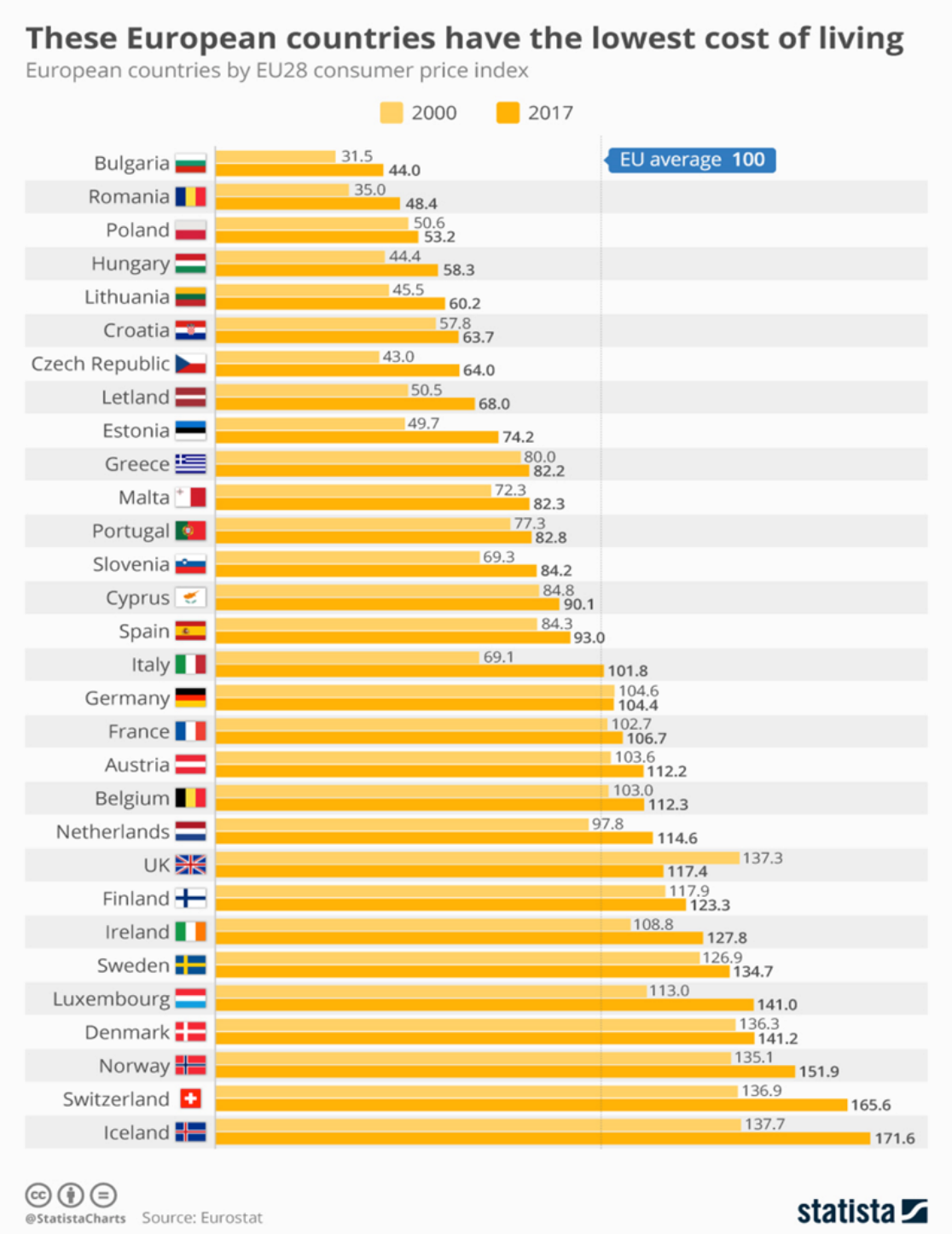
IMAGE 8. COST OF LIVING INDEX BY COUNTRY 2019 MID-YEAR

Rank	Country	Cost of Living Index	Local Purchasing Power Index
1	Switzerland	122.67	127.76
2	Norway	104.49	98.00
3	Iceland	97.22	92.03
4	Luxembourg	84.68	107.89
5	Denmark	83.88	110.69
6	Ireland	76.33	90.80
7	Netherlands	75.22	98.04
8	France	74.62	87.70
9	Belgium	73.13	93.17
10	Finland	72.18	108.78
11	Austria	72.15	89.88
12	Sweden	70.11	112.75
13	Italy	69.02	73.43
14	Germany	66.57	111.99
15	Malta	65.43	55.34
16	United Kingdom	65.33	100.46
17	Greece	56.72	48.46
18	Spain	54.74	79.81
19	Slovenia	54.17	68.24
20	Estonia	50.99	76.75
21	Portugal	50.77	53.61

Source: NUMBEO online database, 2019

Co-funded by the Erasmus+ Programme of the European Union

IMAGE 9. EUROPEAN COUNTRY COST OF LIVING



In the same manner, in following pages with describe macroeconomic data on funding systems of universities, with reference also to their autonomy, mainly organizational and financial.

European Union HE systems have experienced important changes over recent decades, leading to higher autonomy in most cases. The more autonomous a university is, then it should, in principle, be able to better compete in obtaining funds from different sources, such as competitive funds, contracts with private companies, and donations from the non-profit sector. This could make institutions less dependent on one single stream of income, and more able to adapt to a changing environment.

The role of universities has suffered a deep change during the last decades. Besides universities' traditional functions - research and teaching - new ones have emerged because of recent demands that respond to economic, social, and cultural progress. These demands are increasingly complex and relevant due to the contribution of HE to social and economic development, its capacity for competition in an international context, and excellence as an aim in research activities and education. Another point to consider is that the transfer of knowledge through applied sciences and technology created by university departments has increased thanks to university entrepreneurship – start-ups or spin-offs – and research units founded in collaboration with private firms. Furthermore, there is a need to assess the university's role in lifelong learning, training according to labour market needs. The acquisition of new skills and entrepreneurial attitudes extends beyond the traditional horizons, limited to the accumulation of knowledge, completing, this way, the development of human capital.

Against this backdrop, reforms and new HE national laws in Europe have been numerous in the last 30 years Since 1986 this has been particularly evident in 15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Switzerland, Sweden and the United Kingdom. These countries made 35 large reforms. These 30 years represent a period of considerable university reforms. It was very important even without considering the changes produced because of the implementation of Bologna process principles. As a result, we have seen a change in the relationship between governments and universities. This adjustment in the relationship between politics and universities

could be summed up by the idea of more independence in exchange for the implementation of better accountability systems.

New ways of governing and management in universities are an immediate result of changing governance models. There are more rigorous funding models, better linked with performance and results in public universities. It is a combination of transparency and stimuli for a well-done job. This evolution has not happened at the same speed in all the countries. Nevertheless, the campuses with the most excellence in teaching and research are usually located in those countries with more advanced reforms in the governance of HE institutions.

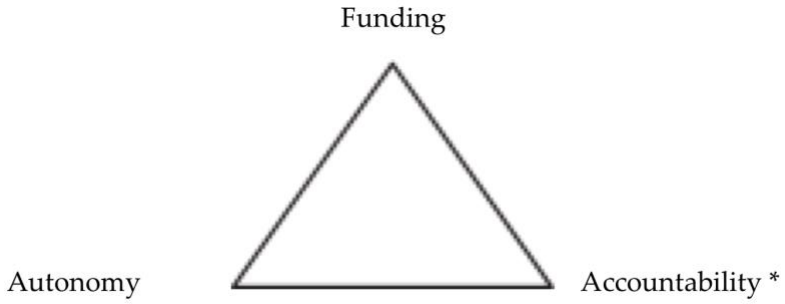
In summary, university autonomy has been increasing because of a reduction of regulation and adoption of efficient accountability systems. In addition, staffing autonomy is a permanent demand from universities to gain self-reliance in hiring and in managing the workload for teaching and research. The professionalization of management is an argument for staffing autonomy. The presence of professional staff suitable to each function is unavoidable in those new services related to a university's "*third mission*" that, briefly we can define as *the way the institution relates to its territory and participates actively in its economic and social development*. Regarding university governing boards, external members are getting more relevance linking the university with regions and society. Finally, some systems lack differentiation between universities, which might be solved with more autonomy and specific funding, mainly in public systems.

The above suggestions point to a relationship between the autonomy of universities and their excellence. However, as shown in Figure 1 it is also important to take into account funding and accountability. Therefore, autonomy, funding and accountability cannot be considered isolated from each other. Each one is part of an indivisible one. The interaction between them determines the results of university policy. The three elements are necessary for an optimum balance. It is not enough to take only two of the elements.

Philip Aghion has analysed the oscillation of the three elements underlining their interdependence. He remarks that if one only increases the funding and the autonomy, this could lead to misguided resource management. If only the autonomy and the incentives expand without a variation of funding linked to results, we could improve the efficiency but not provide faculties with the means required to reach

excellence. Finally, if the funding and the incentives are increased and the autonomy remains the same, there will be low efficiency because the institution is not able to transform itself and take its own decisions.

IMAGE 10. UNIVERSITY AUTONOMY, FUNDING AND ACCOUNTABILITY



SOURCE: P. Aghion (2010) *L'excellence universitaire :leçonsdesexpériencesinternationales*. Rapport d'étape de la mission Aghion à Mme Valérie Pécresse, ministre de l'Enseignement supérieur et de la Recherche (Paris, France: Ministère de l'enseignement supérieur et de la recherché).

*: Meant as the obligation for a subject to give account for his/her decisions and to be responsible for the results achieved. The concept has expanded beyond its basic meaning, "being called to give account for his/her actions". It can be described as a relationship between several groups or individuals in which "A" is subject to accountability towards "B" when A: i) is obliged to inform B of his actions and decisions (even past or future); ii) he can be called to justify them; iii) can be sanctioned with respect to these decisions. In this form, accountability has become a central theme in the debates on the governance of the public, private and non-profit organizations.

National governments are still the main source of funding of the selected universities. On average, 70% of the total university income comes from government allocations, of which 57% represents core funding and the remaining 13% is assigned on a competitive basis. Funding from private companies represents around 6%, around 3% comes from non-profit sectors and approximately 2% is from abroad. The remaining 19% belongs to a residual category 'Other', which cannot be further disaggregated.

Looking exclusively at the income coming from the government, data indicates that competitive funds represent around 20% of the total university public income. The highest shares are found in universities located in Belgium, Germany, Sweden and the UK, with shares of competitive funds from the government ranging between 25% and 32%.

The share of budget coming from competitive sources also shows some country-level variability. In certain countries, some institutions seem to be able to collect a larger share of competitive funds. This is the case of universities in Finland, Portugal, Sweden or the UK. In other cases, for instance, for institutions in Italy, Switzerland or Germany, the shares of competitive funds appear to be less diverse.

This could suggest that the national framework is a necessary but not sufficient condition leading to higher levels of competitive funding. Strategic behaviour at institutional level also appears to be very important. Furthermore, the analysis at the institutional level reveals that institutions in the UK and, in general, natural science and engineering or technological universities have the highest shares of competitive funds. Moreover, some institutions appear to have a more diversified budget than others. The results seem to suggest that UK universities are more successful in diversifying their funding sources.

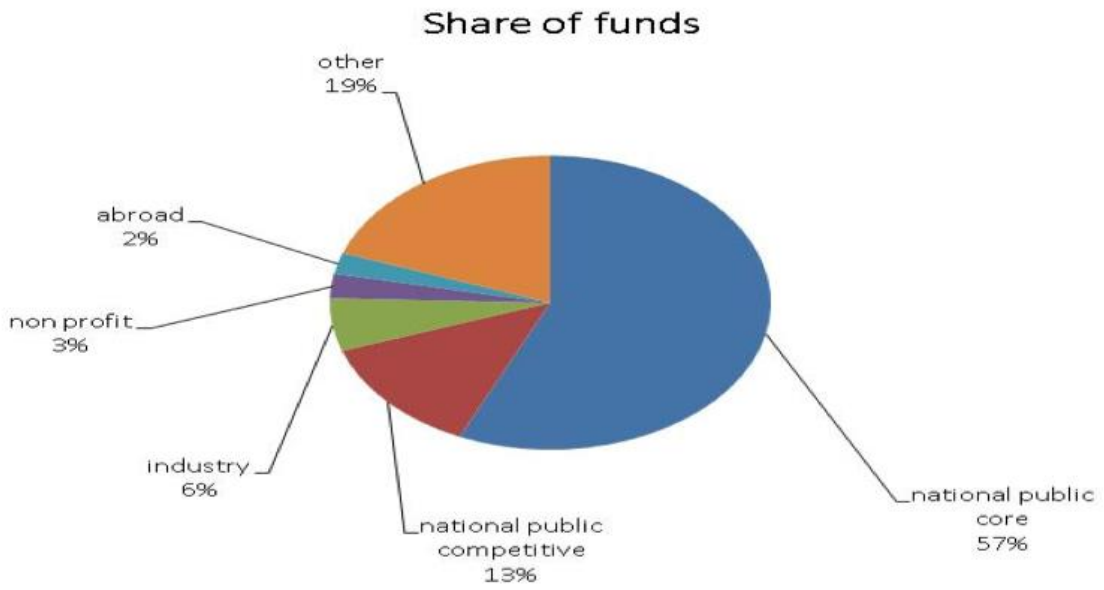
In relation to the budget exclusively devoted to R&TD, the country percentage (based on the selected universities) of universities' R&TD funding over the total budget varies considerably (between 4% and 52%). In particular, universities in The Netherlands, Switzerland, Belgium and Denmark are receiving a percentage of R&TD funds over 45%. However, figures on funds assigned to R&TD have to be considered with caution, due to the difficulties encountered in identifying this stream of income.

R&TD funds coming from regional authorities are considered important for institutions operating in countries with a more decentralised government structure, such as Belgium, Germany or Spain. Interestingly, these institutions do not tend to be placed in the most populous cities of the country.

The report has aimed at checking whether greater financial autonomy is associated with a more diversified funding structure and particularly to an increase in the share of funds obtained on a competitive basis. Financial autonomy seems to have a positive effect on the level of budget diversification, but interestingly only for those

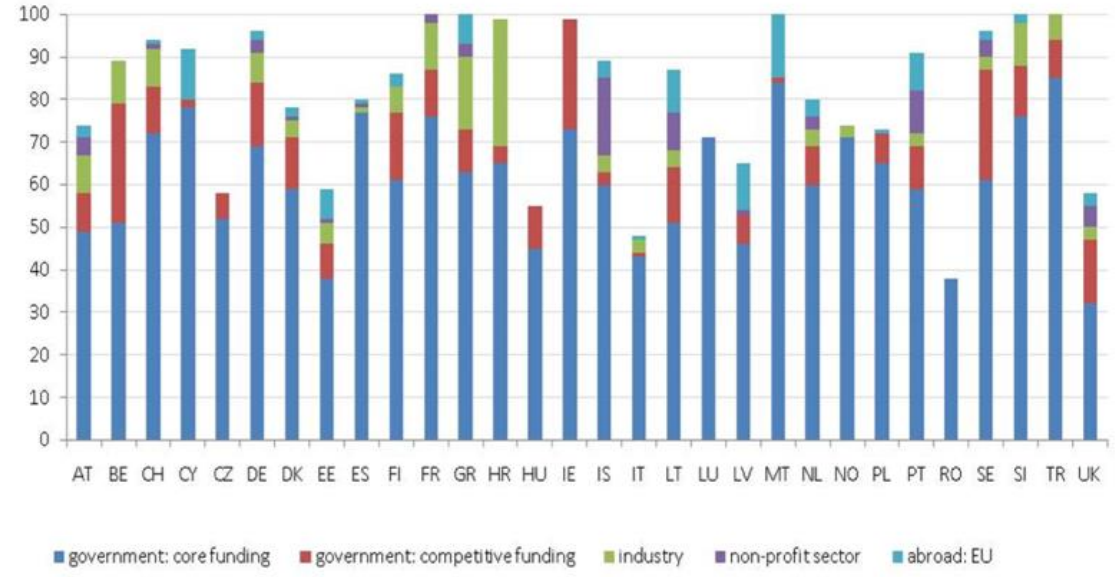
institutions that declare themselves as being completely autonomous. Finally, findings show that the share of competitive-based government funding increases with increasing levels of financial autonomy. As before, a significant difference only occurs when universities are completely autonomous. This could indicate that national or institutional settings which do not allow universities to act in a fully financially autonomous way are less likely to produce a real change.

IMAGE 11. SHARES OF TOTAL FUNDS BY SOURCE OF INCOME



Looking at the budget composition of the selected universities at national level, we observe a high degree of heterogeneity across countries (Image 13).

IMAGE 12. SHARES OF TOTAL FUNDS BY SOURCE OF INCOME, AVERAGES PER COUNTRY



The analysis of the different sources of income reveals several interesting facts:

- Government is still today the main funding source for European universities. For the majority of universities in the ERA countries, government core funds account for around 60% or more of the total university income. The share of government competitive funds varies considerably, ranging from an average of 1% for Italian universities to an average of 28% for Belgian institutions.
- Funding data show that universities, generally, have less than 10% of their budget coming from industry. Only in the case of institutions in France, Greece and Croatia, more than 10% of the total budget comes from the private sector.
- Philanthropic sources could potentially be an important source of income for universities, particularly for R&TD. However, it is not nearly as well developed in Europe as elsewhere, particularly in the US (European Commission, 2008). Actually, only half of the universities in the sample was able to provide reliable data on this stream of income. This could give us an indication that this particular stream of income is of lesser importance, resulting in poor

accountability. Data indicate that less than 5% of universities' total budget comes from the non-profit sector in approximately ¾ of the countries. The non-profit sector could be an important source of income, as proved by universities in Iceland and in Portugal, where, on average, it represents 18% and 10% of the total university budget, respectively.

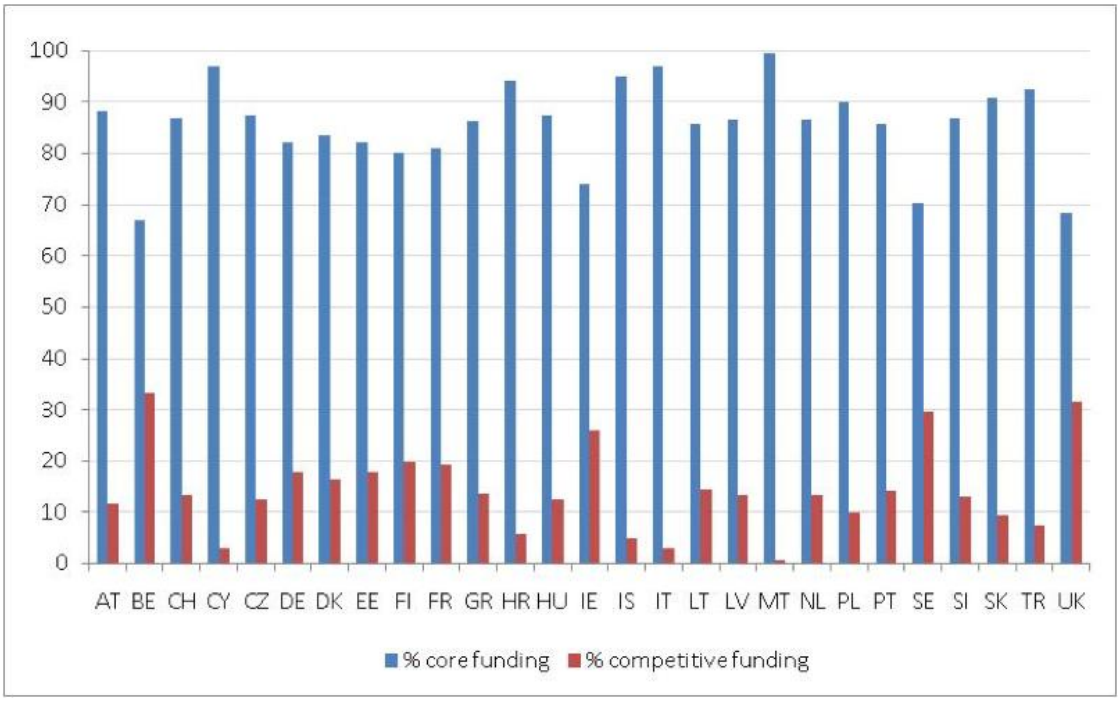
Finally, income coming from 'abroad' represents less than 10% of the total budget for the great majority of universities in the sample, from which 83% cent is below 5%.

With particular regard to government allocations of public funds, it has been a clear policy priority to decrease the core funding while increasing the funds allocated on a competitive basis. Data on public funds were mostly available at institutional level and confirm that core funding is the major source of income for the selected EU universities.

What still appears to be an open issue is what would be the 'right' balance between core and competitive funding. While it is clear that there are benefits from the increased move towards competitive funding, university research cannot fully depend on only one source of income. A university's ability to develop its strategic research activities with respect to its profile and objectives could be restricted by over-relying on competitive funding sources. While competitive funding for research might be important for ensuring quality, it is also clear that core funding is essential to support universities' long-term strategic planning.

Although it is not the main aim to conclude on which is the "ideal" budget composition, data show that in some countries' universities seem to have a more balanced budget composition of public funds than in others. As shown in Figure 4, core funding represents around 80% over the total government allocations for most of the selected universities across Europe while competitive funds represent around 20%. Universities in Italy, Malta, Cyprus, Croatia or Turkey have budgets with a clear dependency on core funding, while universities in Belgium, Sweden, the UK and Ireland have a more compensated allocation of public funds: approximately 70% core funding and 30% competitive funding.

IMAGE 13. CORE FUNDING IN EUROPEAN UNIVERSITIES' SYSTEM



Government competitive funding also shows some country-level variability. There are clear within- country differences across institutions with respect to the share of their competitive funds. The highest average values are for universities in Belgium, Germany, Sweden and UK, with shares of competitive funds between 25% and 32%. This could indicate that, within the same national framework in which all universities operate, some institutions are more able to compete successfully in obtaining government competitive funds. This is the case for universities in countries such as Finland, Portugal, Sweden or UK. In other cases, such as universities in Italy, Switzerland or Germany, the share of competitive funds appears to be less diverse across institutions.

Some key findings include:

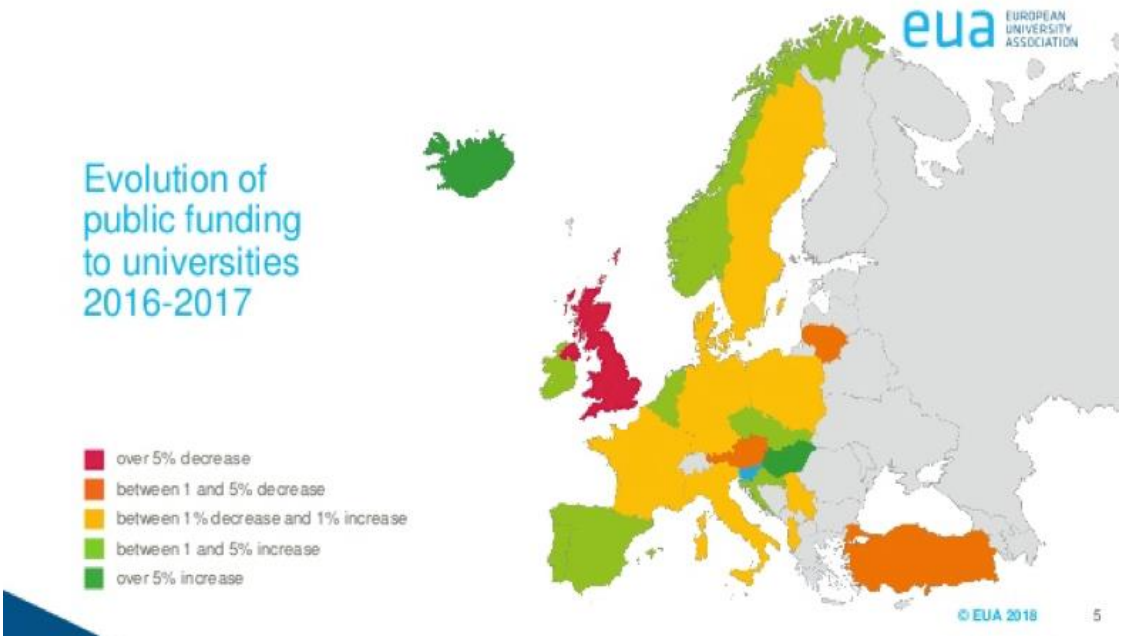
- of 16 systems with higher funding, only 6 have enough to match student enrolment rates;
- 17 systems had lower levels of funding, with five experiencing larger student numbers;
- nine countries fail to re-invest in universities even though they have positive GDP growth;

- eight countries re-invested but for half it is not enough to address the cumulated funding gap;
- recovery appears solid in two countries that are now exceeding 2008-funding levels.

"*As there are signs of recovery, it is crucial not only to re-invest in universities, but to efficiently manage funding at all levels*," explains Thomas Estermann, EUA Director of Governance, Funding and Public Policy Development. "*Not only is more funding needed, both at the EU level and at national level, it is also key to simplify funding schemes and foster alignment of funder practices*".

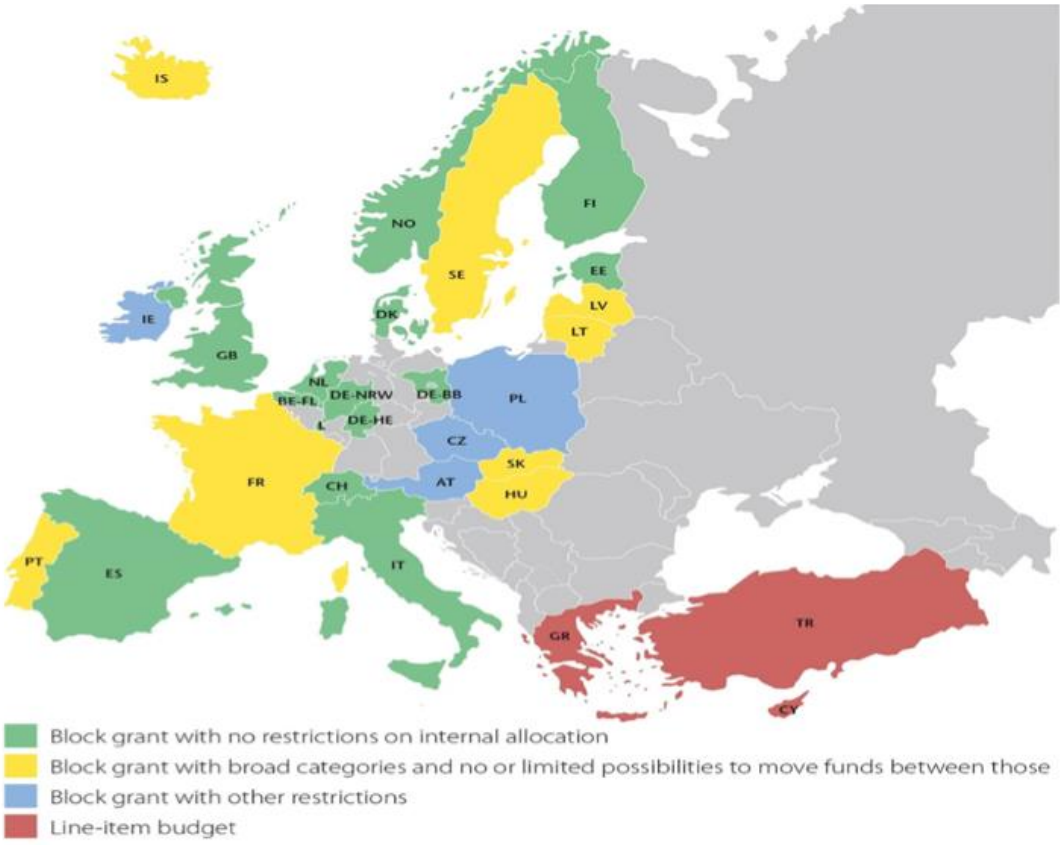
The study reveals that since then, the divide between HE systems that increase public funding, and those that reduce investment, is getting wider. It also shows that any recovery that can now be detected is slow and fragile.

IMAGE 14. EVOLUTION OF PUBLIC FUNDING TO UNOVERSITIES



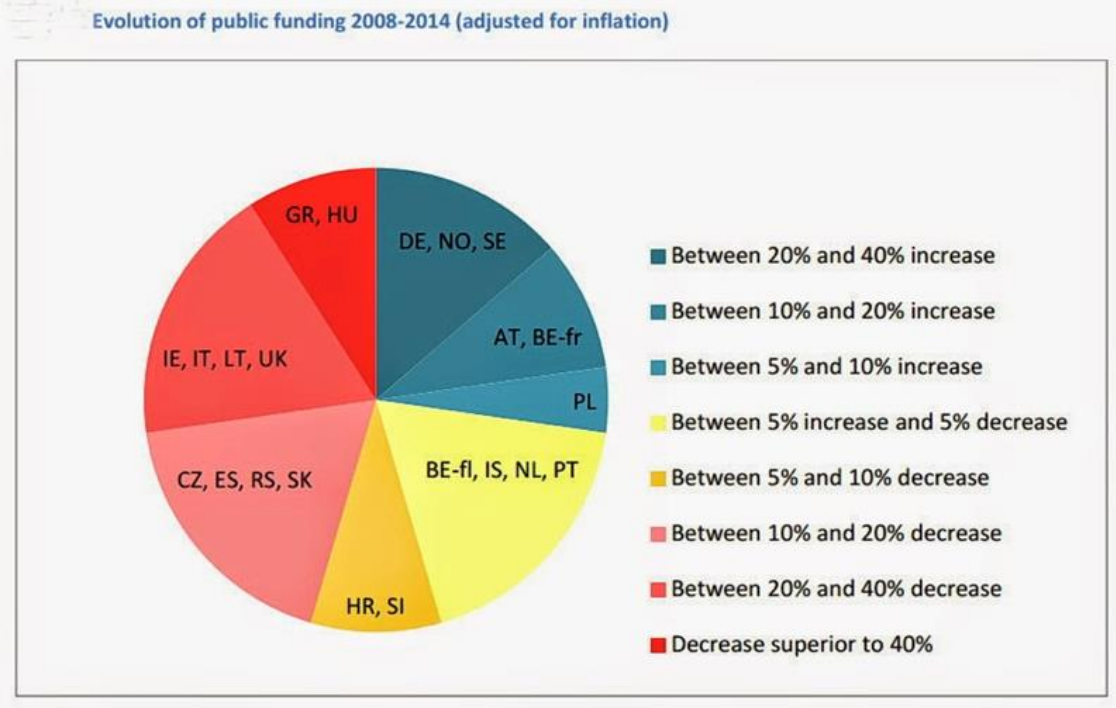
SOURCE, EUA 2018 REPORT

IMAGE 15. TYPES OF RECURRENT PUBLIC FUNDING



SOURCE: ESTERMANN, NOKKALA & STEINEL 2011

IMAGE 16. EVOLUTION OF PUBLIC FUNDING



3. PART II: Governance And Funding Of Eu Universities: two Sides of the Same Coin: University's Autonomy

The discussions about governance and funding are particularly intense in times of major changes in the world around HE, especially as Europe is once again going through such a period. External ruptures in society-at-large and changing trends in HE are influencing the policy discussions and reform initiatives.

A European notion of autonomy has emerged based on some kind of European consensus regarding the need for universities to acquire more institutional freedoms so that they could be more efficient in delivering the types of services and goods deemed necessary for the advancement of defined European and national policy goals. Many national governments have also promoted reforms in the area of university autonomy and until recently, most of these reforms have been meant to support increased autonomy, at least in certain dimensions, which in turn was expected to support a more efficient work of the university, as judged against pre-set criteria defined by the public authorities. At the same time, some governments have begun restricting autonomy and academic freedom. These emerging trends are not happening equally in all parts of Europe. European organisations such as the EU and the Council of Europe remain committed to the knowledge society narrative, democracy and to the European integration - and thus to supporting HE. Many governments, in different ways, continue to act nationally, based on the conviction that HE is indeed something to be treasured and nurtured, and that it must remain a key matter for public policy. However, even in some of those countries, times seem to be changing.

Nevertheless, the "efficiency" concept in HE, at the core of the developments regarding governance and funding, seems to be vaguely defined as there is no European accepted definition. These changes require and indeed have developed new governance - that is, new concepts, principles, models, tools and practices in university's systems.

The allocation of public funding to HE has been increasingly subject to debates and change in recent decades. The changes have often been linked to changing beliefs and conceptions about how the public sector should be steered and managed. The

backdrop to this was the New Public Management (NPM) approach to governing public organizations which argues that the public sector should be addressed with similar management tools as the private sector.

Under NPM, the predominant steering approach in European HE systems has emphasized decentralization, with HE institutions (HEIs) enjoying a large autonomy and receiving a lump sum budget from their funding authorities. To a large extent, HEIs are autonomous in areas such as the provision of educational programmes, managing their research portfolio, their human resources and their asset and property portfolio. This governance approach may be characterized as "state supervision steering". The government limits itself to a restricted number of "framework steering" elements: setting the tuition fees and distributing student financial support; organizing quality assurance of education and research and determining whether new education providers and new degree programmes qualify for public funding.

Models for public funding of HEIs vary across countries/jurisdictions. Most countries employ funding formulas that link the core (recurrent) grant that an HEI receives from its funding authority (a ministry or funding council) to input indicators such as student enrolments. In recent years, many countries have introduced measures of performance in the funding arrangements. PBF was introduced in the belief that it would steer HEIs' behaviour towards producing higher levels of performance, quality and efficiency.

3.1. GOVERNANCE OF HIGHER EDUCATION

New challenges have called for a radical re-thinking of governance models at the institutional and systemic levels, not only in EU; this, in turn, has called for the need to redesign not only the formal rules at both the institutional and systemic levels by changing the distribution of powers and responsibilities but also the governance arrangements, i.e.: the way in which decisions and policies are made, implemented and coordinated. Hence, this is not only a case of institutional reform but also a case for policy change.

The basic levers of reforms in HE governance can generally be summarised as follows: institutional autonomy, funding mechanisms, the quality assessment of research and teaching, internal institutional governance and the changing role of the

State. Moreover, governments had, and continue to have, a predominant role in the reform of governance in HE.

The previously mentioned basic levers have been moulded differently at the national level, although some common features have emerged:

- In Continental EU countries, governments have abandoned the State-controlled model in favour of an autonomist policy that has abandoned the traditional hierarchical governance mode in favour of steering universities from a distance (by giving more autonomy to institutions). In some countries, such as the Netherlands, Denmark, Austria and Finland, governments have radically changed the institutional arrangements of universities by abandoning the traditional democratic mechanisms used to elect the institutional leaders and the governing body for an appointment system. The supervisory role of the State is implemented by steering on the basis of new and apparently soft methods of coordination no longer based on hard rules but on soft contracts, targets, benchmarks, indicators and continual assessment.
- Despite a tradition of institutional autonomy, in the English-speaking world, governments have increased their intervention and regulation. In the UK, governments have substantially restructured the national governance framework by creating national agencies for the assessment of research and teaching and through a strong commitment to realigning the behaviour of universities to socio-economic requirements.
- Overall, European HE systems have undergone significant changes in the characteristics of their systemic governance arrangements, and most of the traditional elements seem to have been transformed. All countries have adopted similar policy reforms by fishing solutions and policy instruments out of the same basket. Within this context of the substantial redesign of the borders and the general framework of HE's systemic coordination, certain other features are present in all of the most important countries.
- Institutional autonomy does not mean independence or academic freedom; instead, it refers to the capability and right of a HE institution to determine its own course of action without undue interference from the State, although within a context that is strongly influenced by the same State. In this sense,

the common interpretation of institutional autonomy is that of a policy instrument designed to increase the effectiveness of HE policies. What clearly emerges is that in those countries belonging to the continental mode, where institutional autonomy was either weak or non-existent, governments have started to grant greater institutional autonomy. However, in those systems where university institutions have traditionally been very autonomous (in the English-speaking world), governments have started to interfere in institutional behaviour through the introduction of new regulations, the assignment of targets and pressure for more inter- institutional competition.

- A policy of funding traditionally earmarked for the functioning of universities was initially abandoned in favour of lump-sum grants, although this policy was reversed by introducing performance and target funding.
- Public funds assigned to universities are based on output-oriented criteria and performance-based contracting systems.
- National agencies or committees for the evaluation and assessment of the quality and performance of teaching and research in HE institutions have been established in all western countries.

These common characteristics could push researchers to imagine a clear trend in the convergence of governmental reforms in the governance of HE systems. However, things are less simple.

3.2. THE GOVERNANCE HYBRIDS

The changes in systemic governance in European HE mentioned in the foreword are quite challenging from an analytical perspective. In fact, the traditional way of classifying governance in HE, that is a sort of tri-partition, is not useful anymore. The continental model's constitutive elements are as follows: systemic, strongly hierarchical coordination through State-centred policies, no institutional autonomy, the powerful, all-pervasive authority of the academic guilds, and faculties and schools constituting confederations of chair-holders. The British model is characterised by substantial institutional autonomy, collegial academic predominance and a moderate role of the State.

However, due to drastic changes, these two types do not fit reality anymore. In Continental Europe, in fact, universities have been granted institutional autonomy, and the State has developed new ways of governing universities through evaluation, contracts and soft regulations; in the UK, the governmental policies have become more intrusive with respect to the traditional universities high autonomy. It is not so easy to catch the real content of actual governance arrangements in HE, except for an ideally typical use of it, which, however, can only help to generally address any theoretical effort on governance in HE. In the last several decades, a mixture of different principles of systemic coordination have been used by governments in designing their HE policies: hierarchy-, market- and network-based principles of coordination have been combined in all countries.

Therefore, it is not the case to propose categories to define the emerging governance models. In the literature, there is a specific definition of the steering at a distance model based on combining different policy dimensions.

Overall, these are theoretical attempts to try to grasp the new composite nature of governance mode in HE. However, these conceptual efforts risk missing a more fine-grained interpretation of the real content of the actual governance modes in HE. In fact, there is empirical evidence that notwithstanding the apparent diffusion of the same policy recipe, consistent differences persist in the way in which the common policy template has been adopted at the national level. These differences can depend on the national institutional and policy legacy, the characteristics of the political administrative structure and the specific socio-economic context. The different ways in which the design of reforms has mixed the same principles and policy tools according to specific preferences have been emphasised to show that there is no real convergence and that the reforms are substantially endogenously driven.

Furthermore, this empirical evidence confirms that in the following national paths the governmental reforms have created hybrid forms of governance in which new policy instruments have been added to the existing one or in which the set of tools offered by the common policy template has been assembled in different ways. From this perspective, the prevailing governance mode, being adapted according to national characteristics, is never applied in its pure way but rather always arranged and designed in a hybrid way. For example, it has recently been observed that in the Netherlands (the first continental country to undertake the autonomist policy at the

beginning of the '80s), the steering at a distance policy can be characterised by a progressive shifting towards a re-regulation of the environment in which universities operate, substantially limiting their institutional autonomy. Moreover, it has also been underlined in other countries how governments have started to re-regulate their universities, as in Italy.

The overall picture of shifts in HE governance in Europe, then, is apparently becoming contradictory: if every country, while inspiring its reforms to a common policy template (the steering at a distance / supervisory / supermarket one), produces hybrids when designing such reforms, it is then legitimate to raise questions about the nature and composition of these hybrids and consequently about the analytical lenses needed to grasp their characteristics.

If real governance arrangements are hybrids, we should thus try to better characterise their content. In this sense, governance arrangements can be similar, that is, belonging to the same family (with regards to the prevailing systemic coordination principle) but different in relevant aspects and thus produce different policy dynamics. For example, the perception that there is convergence in the European HE system towards the same common template could be disputed if analytical attention is devoted to the degree of convergence with respect to the output, outcome or direction. Leaving aside the convergence of outcomes, the impression emerging from the existing research and literature is that there is no convincing convergence with respect to the output (the actual characteristics of the governance mode) or direction of change (because the same instruments have not been adopted or not in the same way). Although European governments have followed the same template (the steering at a distance / supervisory / supermarket model), the intrinsic mixed nature of this mode (where hierarchy, market and network are mixed in different ways) does not allow one to fully grasp the real content of the actual governance modes but only to generically label them. Thus, piloting at a distance / supervisory / supermarket should be conceived as a type of governance that cannot be found in a pure form in reality but that can assume different characteristics according to the context and the country, and we should assume that there is room for a variety of concrete national applications for it. These national interpretations should be defined with regards to hybrids.

If governance reforms can produce only hybrids due to national idiosyncratic characteristics, then thick descriptions are necessary and useful for deeply understanding national paths. In addition, this focus on the national idiosyncratic characteristics could make comparisons and empirical generalisation very difficult. Furthermore, the hybrid nature of national policies should not be taken as a constraint for theoretically driven empirical research. Accordingly, this dense variety should be ordered and possibly reduced in size to allow research lines capable of grasping homogeneity and common trends as well as to show more significant differences. Altogether, these varieties of forms of hybrid governance need to be clustered to allow a more fine-grained analysis and to make comparative analysis more feasible. Thus, there is a need to better specify this potential variety of hybrids to avoid the risk of staying in a 'night in which all cows are black'.

We will attempt to achieve this by focusing on the content of governance modes operationalised with regards to policy instruments and concerning financial sources (public funding as well as tuition fees).

3.3. GOVERNANCE HYBRIDS ON POLICY INSTRUMENTS AND ON FINANCIAL SOURCES

In the studies focused on governance modes in comparative perspective, there is an increasing awareness that no pure types of governance arrangements work in reality: the main principles of coordination (hierarchy, market and network) are combined in various ways. Moreover, all governance arrangements in all policy fields, and not just in HE, are hybrids that are characterised by working through policy mixes, that is, policy instruments belonging to different instrument categories or pertaining to different policy paradigms, beliefs, systems or ideologies. Thus, the existing set of adopted policy instruments can be conceptualised as specific portfolios, settings and combinations of policy instruments belonging to different types and bearers of different logic.

However, how can we describe the content of these policy mixes? Unlike other policy fields (e.g., environmental, forestry and climate change policies), where there is lengthy research on the detailed operationalisation of policy instruments over time, in HE this theoretical and empirical gap has not been completely filled; nevertheless, some comparative analyses are attempting to focus also on the instruments adopted.

However, these analyses very often operationalise the different governance principles or the areas of reform in a way that makes the comparison between a large number of cases difficult.

To strengthen this analytical lens, we adopt a bottom-up perspective, focusing on the basic unit of any governance mode in which the policy instruments can be adopted and their possible combinations. This assumption is quite realistic because policy instruments are the operational, performance-related dimensions of governance arrangements. Accordingly, we operationalise systemic governance arrangements with regards to adopted policy instruments and thus as specific sets of techniques or means by which governments try to affect the behaviour of policy actors to direct them towards the desired results. Thus, we focus on the content of the decisions made to steer HE systems.

Policy instruments can be considered as "*an identifiable method through which collective action is structured to address a public problem*", "*a set of techniques by which governmental authorities use their power in attempting to ensure support and affect or prevent social change*", or the means a government uses "*to intentionally affect the nature, types, quantities and distribution of the goods and services provided in a society*". All of the most commonly used and reputed definitions of policy instruments agree on the fact that instruments refer to the capacity of governments to get things done, regardless of individual preferences. Policy instruments are thus the way in which governments do their job to direct policies and are the means through which they try to change the performance of existing policies.

There are many classifications for ordering policy tools based on different criteria of analytical distinction, from coercion to the adopted governmental source. All of these typologies suggest different families of instruments. According to our research framework, we focus on the capacity of policy instruments to induce specific behaviours; thus, we must consider the nature of the instruments and examine the different ways in which they induce action towards the expected result. When focusing on the nature of substantial policy instruments, we grouped them by the basic inducement they relied on to foster compliance. By following the aforementioned perspective, we can delimit four distinct families of substantial policy instruments that are bearers of different (non-overlapping) capacities to induce behaviours: Regulation, Expenditure, Taxation and Information.

Every family is the bearer of specific inducement. Expenditure induces remuneration, regulation induces behaviour control and information is the bearer of persuasion. However, taxation, depending on the way in which it is designed, can be the bearer of behaviour control as well as remuneration. All four families of substantial tools can be employed by applying different methods of coercion depending on how free they leave individuals to opt for alternatives. Taxation can be quite coercive when a general tax increase is established; however, at the same time, it can have a low degree of coercion when many targeted tax exemptions exist. Regulation can be very strong or very soft according to the type of behavioural prescription that is provided. Expenditure can be less coercive in the case of subsidies, while very demanding when targeted funding is delivered. Information can be very coercive when compulsory disclosure is imposed or really soft when monitoring is applied.

However, the four types of policy instruments that we consider (as well as the types proposed by any classification of policy instruments) represent very general instrumental principles that must take specific forms to be practically applied. Here, we assume that it is the shape in which the substantial instrument is designed to deliver the expected result concerning policy impact. Thus, for every type of substantial policy instrument, there are different ways of delivering that are the real way in which substantial instruments can affect reality. These shapes of instruments should be considered the basic analytical unit when assessing how governance arrangements are designed by governments.

Accordingly, what matters when detecting the adoption of expenditure are the various shapes through which it can be delivered, such as grant, subsidy, loan, lump-sum transfer, targeted transfer, etc.; regulation can be designed by imposing specific behaviour, enlarging the range of opportunities or establishing specific public organisations. Moreover, information can take the shape of neutral administrative disclosure, monitoring, diffusion, etc. Taxation can be delivered through fees, user charges, exemptions, etc.

In turn, different recruiting systems, mechanisms for access to HE or quality assurance systems have different effects, although they can all be classified as regulatory shapes. Moreover, most regulatory shapes can pose both constraints and/or opportunities to HE institutions. However, grants have different effects than loans, lump-sum transfers and performance-based funding, despite the fact that all of

them can be classified as tools belonging to the expenditure type. Nationally driven tuition fee systems (or very decentralised ones) and income-, merit- or service-based fee systems induce different behaviours (both in institutions and in students) because they are different delivery forms of taxation. Finally, ranking systems, national monitoring, quality assurance and research assessment results are all delivery vehicles that belong to the information family, although with quite different effects.

Each of these instrumental shapes bears specific potential effects that cannot be measured alone because they should be considered in relation to the other shapes of substantial instruments composing the actual set of policy instruments adopted. The distinction of the shapes of different substantial policy instruments is essential to grasp how governments change the instrumental side of governance arrangements over time. This distinction is quite useful at least from the descriptive perspective to detect the real content of governance arrangements being pursued over time. In fact, by focusing on the different shapes of policy instruments, a more detailed re-construction of governance shifts can be offered with respect to the usual description concerning more or less market, more or less hierarchy, etc., allowing for a more fine-grained description of how a similar policy template has been adopted in different countries.

However, to grasp the composition of a governance mode in HE, two other elements should be taken into consideration together with the policy instruments and their specific shapes: the total amount of public funding as well as the tuition fees. These two dimensions are quite relevant because they delimit the financial context in which the adoption of specific policy tools attempts to address the behaviour of institutions. From our perspective, the higher the public funding and the income from tuition fees, the more opportunities are offered to the autonomous behaviour of institutions.

3.3. UNIVERSITY GOVERNANCE: AUTONOMY, STRUCTURES AND INCLUSIVENESS

The present part draws from the data collected in the framework of the 2018 update of the EUA University Autonomy Scorecard as defined in the previous Methodological Note. The Scorecard offers an institutional perspective on university autonomy in Europe. It allowed for the development of a core set of indicators and a methodology to collect, compare and weight data on the topic. In this context, the regulatory frameworks of HE systems were analysed in order to assess the degree of autonomy

universities operate with. The Scorecard is characterised by a four-pillar structure, which allows to concretely assess university autonomy with regard to:

- organisational matters (covering academic and administrative structures, leadership and governance);
- financial matters (covering the ability to raise funds, own buildings, borrow money and set tuition fees);
- staffing matters (including the ability to recruit independently, promote and develop academic and non-academic staff);
- academic matters (including study fields, student numbers, student selection as well as the structure and content of degrees).

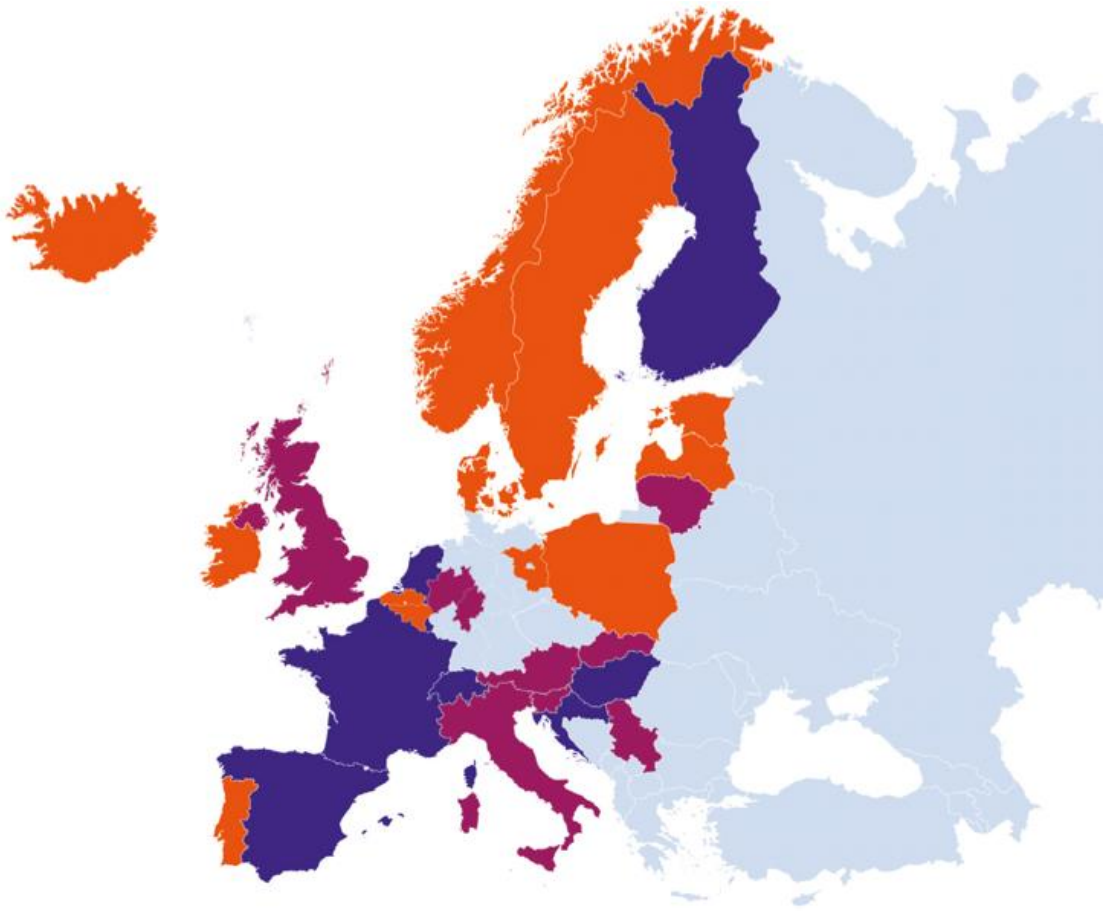
The comparative data presented in this Report is analysed under the lens of institutional autonomy. Few HE systems allow universities to freely decide on their governance model. The types of bodies, their responsibilities, size and membership may be subject to different degrees of regulation. In exploring these elements, the focus is placed on the links between governance models, representation and inclusiveness in governing bodies and university organisational autonomy.

Governance Models

While significant diversity in the specifics of governance modalities exists across universities in Europe, general observations can be made about the types of internal bodies governing university activities. When comparing the information collected in the characteristics of these bodies as stated in law (holding formal decision-making powers), the distribution of responsibilities and the dynamics between them (in the cases where there is no single governing structure), it is possible to establish a typology of governance models and thus cluster HE systems accordingly. Our analysis, therefore, distinguishes:

- unitary governance models and
- dual governance models
- with the latter sub-divided based on power distribution, between:
- "traditional" model
- "asymmetric" model

IMAGE 17. GOVERNANCE STRUCTURE



Red: Unitary governance structure**;**
Dark Violet: Dual governance structure: "traditional model"**;**
Blue: Dual governance structure: "asymmetric model".
SOURCE: EUA, *UNIVERSITY AUTONOMY IN EUROPE III, COUNTRY PROFILES*, 2017

The following sections explore this typology in further detail.

Unitary Model

"Unitary model" refers to the governing structures where one governing body exerts decision-making powers at the given university. This body can have the characteristics of either "senate-type" bodies or "board-type" bodies.

Senate and Board-type bodies are defined in relation to each other. Senate-type bodies tend to be primarily competent for academic matters and are characterised by their comparatively larger size and academic-oriented membership. Board-type bodies

are usually responsible for strategic institutional decisions, often including financial aspects, and are often of smaller size than senate-type bodies. They are also characterised by a more diverse membership.

In the sample analysed, a minority of HE systems use unitary governance models. Among them, the unitary models structured around board-type bodies are more frequent (six out of nine). Universities in Estonia, Ireland and Poland use senate-type bodies as the only decision-making structure. It should be noted that several regulatory frameworks exist in Estonia; in addition to the main Act governing activities of four universities, two universities are governed via specific laws that have introduced board-type bodies next to the existing senates, creating dual governance structures.

The composition of governing bodies in Ireland has been a bone of contention, with the university sector having expressed the wish to move away from traditionally large, group representation-based bodies. The argument is that the current regulations do not enable universities to select the right expertise at strategic level. The sector has therefore been advocating for steps in that direction, similar to the changes implemented in the regulatory framework for the Irish Institutes of Technology. Finally, Polish university senates stand out as comparatively "closed" governing bodies. They do not include external members who therefore are not represented at all in the university governance, an exception in Europe. Nevertheless, Polish universities have the latitude to establish and decide on the membership of additional advisory bodies.

The other unitary models concentrate decision-making powers in a board-type body. This does not preclude "advisory" bodies that tend to display complementary features to the decision-making body, such as wider academic staff or student representation. In particular, Denmark, Iceland and Portugal make it compulsory for universities to have a "senate" although this body does not possess effective decision-making powers.

With the exception of Finland, all Nordic systems have unitary governance models structured around board-type bodies. It is worth noting though that, in Sweden, some of the historically established universities maintain a senate-type body in addition.

Dual Model

"Dual models" are characterised by governance structures including both a senate-type body and a board-type body that share decision-making powers. This particular model is more frequently found across Europe (roughly 2/3 of the systems analysed). Based on the distribution of power among the two bodies, two types of dual model can be distinguished. Both types are almost equally present.

Dual Traditional Model

The "dual traditional" model is based on power division where generally each body has a distinct, but equally important portfolio of responsibilities; the senate-type body is usually in charge of academic affairs while the board-type body is generally tasked with strategic oversight and budget allocation. Both bodies may, nevertheless, also partake in the decision-making process on the same issues. Systems following this particular model include Austria, North Rhine-Westphalia, Italy, the UK, Serbia, Slovakia and Slovenia.

Dual Asymmetric Model

"Dual asymmetric" models comprise senate-type and board-type bodies, but with a different type of power dynamics leading to one body occupying a distinctly more central position in the decision-making process. The model can be found in the Czech Republic, Croatia, Finland, Hungary, Netherlands and Luxembourg. Board-type bodies tend to dominate in this model, while senates are the foci of power in exceptional cases. This model is distinct from unitary governance struc- tures where the governing body may be "assisted" by advisory bodies which do not have formal decision-making capacities.

In France, university governance structures evolved from a unitary model to a dual asymmetric model with the implementation of a new Act passed in 2013, which modified the distribution of competencies among the governing bodies. Under the 2007 regulatory framework, the board combined strategic, management and HR competencies. It was complemented by two bodies of a more consultative nature, the "scientific council" and the "council for academic and student matters". The 2013 law implemented a change of competencies by focusing the board's activities on strategic matters and reshaping the two other bodies into two committees (one for research

and one for teaching) that together form the "academic council". This senate-type body now acquired a series of competencies including a focus on staffing matters.

It can be observed that two-thirds of the sample (15 systems) have power localised either in one body (unitary model) only or in one body (either Senate or the Board) while the second entity has a more marginal/limited scope for decision-making (dual asymmetric model). Furthermore, board-type bodies are twice more frequently in a unique or central decision-making capacity than senate-type bodies. There is thus a significant degree of concentration of decision-making capacities in universities across Europe. The next section explores the composition of governing bodies, allowing to assess whether the phenomenon described above has an impact on representativeness and inclusiveness of university governance structures, account taken of the role of regulation and intervention of public authorities in these matters.

Composition of Governing Bodies

Size Regulation

The capacity of universities to populate strategically their governing bodies may be limited in different ways, which can be cumulative: the type of governing body/ bodies may be prescribed - still a common feature in most HE systems of Europe; regulation may apply to the size of the body/bodies; and regulations may apply to the composition of governing bodies. With regard to the size of the governing bodies, the intervention modalities of public authorities may be of three types:

- "no regulation": universities are free to decide on the size of their governing bodies;
- "moderate regulation": public authorities specify either a minimum and/or maximum number of numbers in one or both governing bodies; or stipulate ratios between given groups to be represented in the governing bodies;
- "full regulation": public authorities specify the exact number of members pertaining to the university governing body.

Where universities may freely decide on the size of their governing bodies, as in England or in North Rhine-Westphalia (for the senate-type body), they generally reflect the size of the institution itself. The systems characterised by "moderate regulation" include systems where the ratio between certain member types is specified and systems that have maximum and/or minimum size provisions. Ratios

typically apply to academic staff and/or student representatives. Furthermore, some systems have provisions in terms of minimum and maximum thresholds of certain member types. This includes Poland where it is specified that there should be 50–60% of academic staff and minimum 20% of students. Certain systems have a minimum and/or maximum size of the senate-type body specified in the law. Minimum size is stipulated in Slovakia (min. 15 members), whereas maximum size is particularised in Italy (max. 35 members). Ireland has both minimum (20 members) and maximum (40 members) limits specified in the law. Last, some European systems regulate the size of senate-type bodies tightly by specifying the exact number of each member type. This is notably the case in Luxembourg (29 members), Austria (18 or 26 members), and Hungary (9 members). In the sample, the size of senate-type bodies is subject equally often to "full" or "moderate" regulation.

On average composed of about 30 members (in the sample, where regulation on size exists), the senate-type bodies nevertheless show diverse characteristics across Europe. The smallest senate-type body can be observed in Hungary with 9 members. In terms of the upper threshold, one of the largest senate-type bodies is present in Estonia and Ireland with 40 members each. Although not included in the present analysis, Spain is an extreme case with universities allowed to have up to 300 members in their senates. Diversity also characterises the Swiss system, where university senates (that have mostly consultative competencies) range from 25 to around 200 without decision-making power, include considerably more members than the average senate, as is the case in Iceland where there are 90 members in that advisory body. State regulation therefore tends to limit the size of the governing bodies to enhance effective decision-making processes.

University board-type bodies are almost equally often subject to "full" and "moderate" regulation when considering size: either the exact number is specified or both lower and upper limits are imposed. Systems that allow universities to decide freely on the size of their board-type bodies remain the exception. As in England, Flemish universities can decide on the size, with the caveat that there must be 1/3 of external members.

Among those systems that regulate the size of the board-type body, Netherlands has the smallest, with 3–5 members. At the other end, Portuguese universities may have up to 35 board members (with Spain, in par with its large senates, allowing up to 50

members in the board-type body). However, in most cases, the board-type bodies are on average comprised of around 10 members. The governance model must be considered: in unitary structures, the board-type body will tend to be larger than if complemented by a senate-type body.

The analysis reveals further correlations between size regulation of governance models. In "dual asymmetric" models, the same degree of regulation applies to both bodies. In "dual traditional" models, however, the sample splits almost equally among those where the degree of size regulation is similar for both bodies (Italy, Serbia, UK) and those where different degrees of regulation apply (Austria, North Rhine-Westphalia, Slovenia and Slovakia). Unitary governance models consisting of a single senate-type body are always subject to full-size regulation. Unitary models organised around board-type bodies regulate their size either fully or moderately.

Italy provides a recent example of changes in size regulation. Italian universities have dual governance structures with both board- and senate-types of bodies. Both governing bodies have been reduced in size, and there have been changes in their roles and functions with the 2010 law. The board has been reduced from an average of 20 members to a maximum of 11 members while the senate cannot exceed 35 members. Previously, universities could decide on the size but in practice often maintained large governing bodies. The law is seen as having supported improvements in the quality of management, with a more professional, strategy-oriented university board and reduced duplication through a clarification of the respective functions of both governing bodies.

Composition Rules of Senate-Type Bodies

Regulations regarding the composition rules for governing bodies of the European universities are characterised by significant heterogeneity. Certain systems are quite explicit about profiles of members for senate-type and/or board-type bodies; others impose certain restrictions while some provide significant freedom to the universities. Following the typology used for size regulation, we distinguish between "full", "moderate" and "no regulation".

While senate-type bodies always include representatives of the academic staff as the largest group, there are different models for other constituencies. On average, the second largest group represented in the senate-type bodies are students (always

included), followed by non-academic staff, while very few of the systems include external members in senate-type bodies (Estonia and Ireland, where universities follow unitary governance models, and the UK, where universities may decide on the matter).

Non-academic, i.e. administrative, staff is not represented in the senate-type body in nearly half of the systems. Dual governance structures do not compensate for this; indeed, administrative staff is included in the board-type body only in the case of Slovenia and Slovakia.

The system that imposes the least constraints is the UK where the law does not specify on the membership of the senate. In practice, there are generally academic staff present, students and non-academic staff.

"Moderate" regulation typically applies to student representation in the senate-type body, as in Estonia (minimum 1/5 of student participation) and the Czech Republic (authorised range of 30–50% students).

The rest of the systems clearly specify which member groups need to be included on the senate-type body so that universities only have autonomy in relation to the number of those members. Certain systems, such as Ireland, regulate member composition tightly for each university. However, these parameters differ among Irish universities and are co-created according to the needs and missions of the respective institutions.

Composition Rules of Board-Type Bodies

External stakeholders form a dominant group, present on all board-type bodies covered by the sample. Apart from the UK and two "free" universities in Flanders, all systems specify which types of representatives should be included in the board-type bodies, with little leeway provided to individual institutions. Universities may have, in some cases, the capacity to decide on the extent to which they include external members (which sometimes can result, in turn, in the exclusion of other groups). An example of this can be found in the German state of North Rhine-Westphalia where the law specifies that universities need to have at least 50% of external members while the maximum can be as high as 100%. Students, academic staff and non-academic staff may or may not be included. In some systems, the board-type bodies may include external members only, which can be observed in Austria, the Czech

Republic, Netherlands (in the case of the "supervisory" body) and Slovakia. On the opposite end of the spectrum, external members remain a small minority in the university boards of other countries (less than 1/5 in Serbia for instance).

Unitary governance models structured around board-type bodies tend to include all four groups, except for Iceland and Sweden, where regulations do not specifically stipulate the inclusion of non-academic staff in the board (Sweden) or include them in the advisory senate-type body (Iceland).

Aside from the fully external boards listed above, all board-type bodies include at least three out of the four constituencies. External members are always present and so is academic staff. Non-academic staff and students are found slightly less frequently (roughly 2/3 of the cases where a board-type body exists). External members are excluded from the university governance in Poland, which follows a unitary, senate-based structure. Non-academic staff is fully excluded from university governance structures in the following systems: Czech Republic, Croatia, Slovakia and Serbia, where university governance is "dual traditional"; Sweden and Iceland, with the caveats made above; and Estonia (in the unitary, senate-based model used in four out of six universities).

Students are fully excluded from central governance structures in Dutch universities. Following tensions in 2016, the regulatory framework evolved in 2017, resulting in increased student representation in governing bodies at department/ faculty level. In terms of member participation in the decision-making process, it is important to point out that not all members of the governing bodies have voting rights. It is usually the case that the rectors sit on governing bodies but have no voting rights (as in Croatia), or the head of administration and secretary generals (as in Luxembourg for example), or government officials (as in Flanders). In four systems, certain members on board-type bodies have no right to vote, while in 5 systems there are certain member on the senate-type bodies that cannot vote.

Profiles of External Members

The inclusion of external members in university governance is an important element for accountability purposes, outreach to society and enhanced linkages with other parts of the economy. It plays a role in the ability of universities to develop a strategic profile in an increasingly competitive environment. The Autonomy Scorecard

details modes of selection of external members, revealing that the involvement of public authorities in this process remains significant in many HE systems.

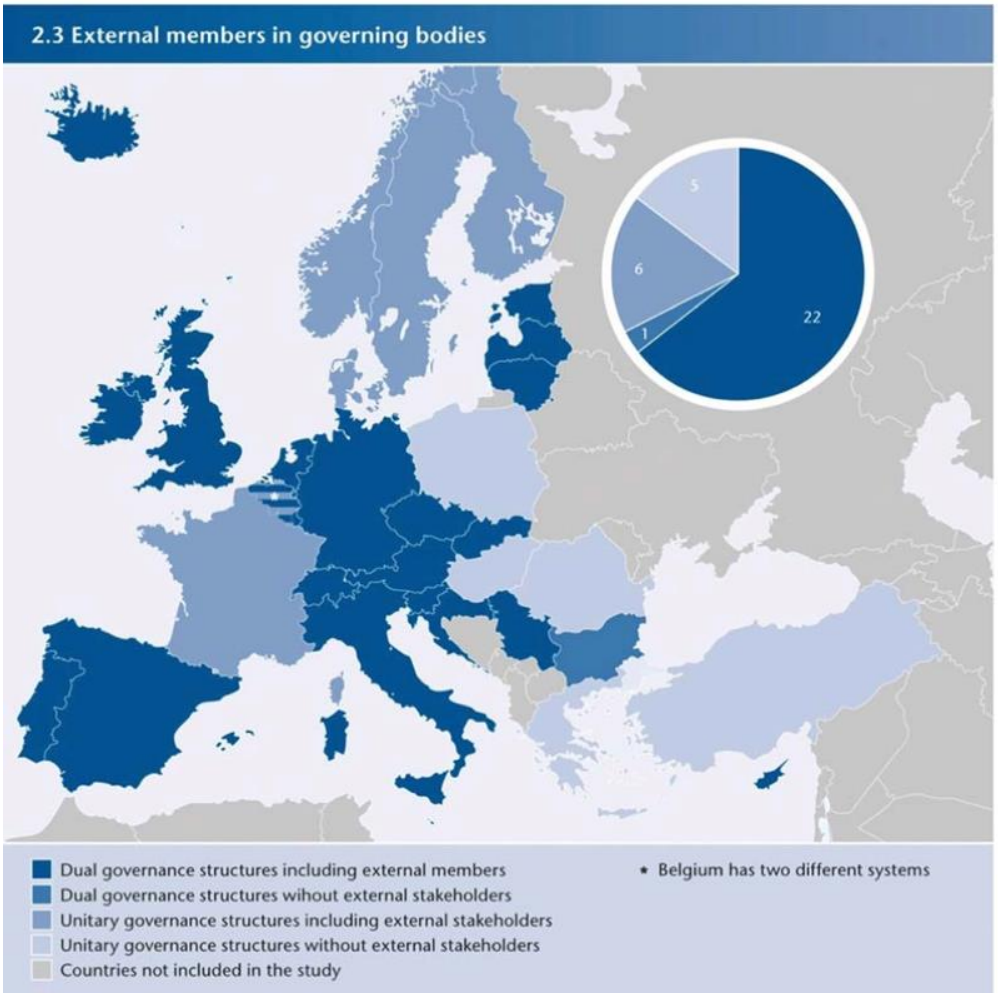
On average, external members account for around 50% of board-type bodies' membership. Few systems allow universities to fully decide on the type of external members to include - industry/business representatives, NGO representatives, alumni, local/national authorities, academic staff from other universities or representatives of art & culture. The majority either restrict the universities' ability to determine profiles (6 systems) or give full control to public authorities (9 systems). Some systems that regulate external member participation more closely also sometimes stipulate the requirements/competencies that these members need to possess to qualify for inclusion to the governing bodies. Some of these requirements include previous experience with management, specific knowledge, recognized merit, etc. The law prescribes certain competencies requirements for the external members, although to different extents, in Denmark, Croatia, Hungary, Iceland, Italy, Ireland, Luxembourg and Serbia.

The most frequently represented group among external members comes from industry and businesses. Out of 19 systems that have board-type bodies, 17 of them include industry/business representatives. In practice, the share is even higher as Denmark and UK do not specify the profiles of external members in university governance, but institutions include them as well. However, at system level, industry and business representatives may not necessarily be the largest group of external members on the governing body. For instance, in Italy, it is more likely to have more government officials as external members on the Board than industry/ business representatives.

National and local authorities are the second most represented group in the boards. This might not be a legal requirement but rather a tradition to include a representative of the Ministry of Education (Czech Republic). In Luxembourg, a "government commissioner" is present on the board, without voting rights. Some systems specify what type of public authority is to be present in the governing body (local, regional, national authorities). This is the case, for instance, with Ireland where it is mandatory for some universities to have mayors of the city present in the senate-type body.

The third most represented group of external members includes the academic staff from other universities. There are 14 systems that include this group, among which Sweden, Norway and Luxembourg. Alumni are least often represented but still participate in university governance in 10 systems, including Sweden, Finland and Hungary.

IMAGE 18. EXTERNAL MEMBERS IN GOVERNING BODIES



SOURCE: T. ESTERMANN (2015, PAG.32. SEE REFERENCES)

Governance Models and Inclusiveness

The following chart shows a simplified assessment of the "inclusiveness" of university governance structures across Europe. It does so by exposing the number of different

groups included in each governing body, differentiating between academic staff, non-academic staff, students and external members. Unitary systems are given a zero score for the absent governing body. This allows comparing both unitary and dual governance structures simultaneously. A limitation is, nevertheless, the inability of the chart to point to overlaps between governing bodies and full exclusion of certain groups from a given governance structure.

The chart shows that unitary systems are on average rather inclusive, with a half including 3 groups and a half including all four groups. Given the small number of unitary senate-based models in the sample, it is not possible to draw conclusions on the relative merits of senate- or board-based unitary models in relation to inclusiveness. Two unitary senate-based models exclude one group - either external members or non-academic staff; three unitary board-based models exclude one group - either students or non-academic staff.

Dual governance models generally have at least three groups represented in each body. However, Eastern European universities are more likely to have more imbalance between the two bodies, and more homogeneous senates (no more than two groups represented: academic staff and students). The Czech Republic and Slovakia present special characteristics with a senate in line with the above and a fully external board. Austria also resorts to fully external university boards.

Finally, significant inclusiveness/diversity in governance structures may be achieved through comparatively lower levels of regulation, as in the UK (data for the UK represents common practice as universities enjoy high levels of autonomy in this area).

Governance Trends

It can be argued that governing modes across European university systems are evolving in the direction of granting board-type bodies more power through different avenues. Several governance changes and novelties illustrate this phenomenon. Further governance changes relate to alterations in number and composition of certain governing bodies. In Italy, the number of governing body members has been capped and requirements of certain members have become more regulated. In Austria, a change in composition saw the reduction of what used to be the majority group - full-time professors - to foster the representation of different groups.

Changes concern external member regulation as well. In Denmark, the universities now must set up a committee, which would nominate external members to the board and, in Estonia, external members are to be appointed by the external authority. Sweden is another system that announced a new selection process for the external members.

There is particular evidence of developments in relation to gender equality. In 2014, Austria has made it a legal provision that there be at least 50% of female participation in the governing bodies (rectorate, senate and council). This is part of a larger framework related to the promotion of gender equality in public decision-making bodies in Austria. North Rhine-Westphalia introduced a similar regulation whereby 40% of the council members must be women.

Multiple governance reforms have affected universities' organisational autonomy. Out of 22 systems analysed, 12 have undergone (significant) governance changes in the last five years.

The need to increase the efficiency, save resources and minimise the administrative burden seems to have been one of the drivers for governance changes, including the growing number of mergers in several systems.

In several countries, the legal status of universities has changed. Due to the diversity of national legislative frameworks, individual organisational forms are difficult to compare. However, the new status usually offers greater freedom from the state and, in most cases, goes hand in hand with increased participation of external members in the university governing bodies.

Different governance models continue to co-exist, sometimes within the same systems. More systems carry out policy experimentations in the field of organisational autonomy, allowing selected universities to gain greater freedom in re-designing their governance (as in Estonia), testing new appointment models for executive heads (in Norway), or granting more institutions recently developed legal statuses (in Portugal and Sweden).

Recent changes in this field include developments in Estonia, Italy, or Lithuania. In these countries, reflection on the roles and responsibilities of governing bodies brought about the introduction or re-design of board-type bodies in all or some

universities of the system. This usually was combined with a more noticeable presence and role of external members in these bodies.

In a majority of European countries, external members participate now in the most important decisions in university governance. In some cases, they have now gained fully equal rights in the board with internal members (as in France). Selection and nomination processes have also been revised to the advantage of the university (Italy, Lithuania and Sweden). The "type" of external members involved in university governing bodies remains an issue in some systems. When they come from public authorities, their involvement may be seen as a way for the state to gain greater influence over internal decision-making processes, thus reducing institutional autonomy, or conversely as a practical way to clear potential subsequent hurdles.

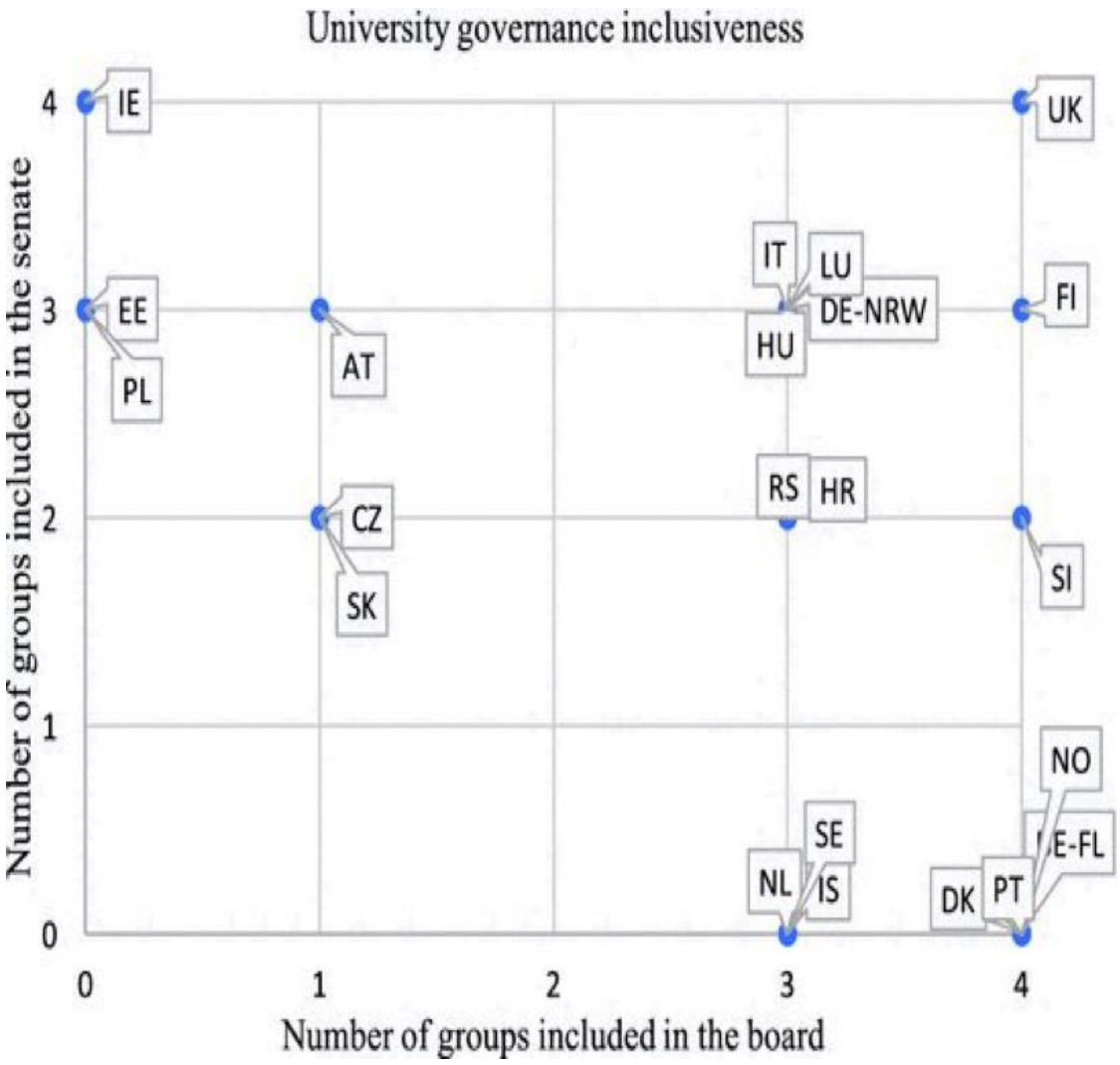
In most Northern European countries, universities can freely select their external members, although in some of these countries, an external authority formally appoints external members who were put forward by the university. In a majority of systems, the government continues to control partly or completely the appointment of external members.

The analysis of the updated Scorecard also shows, importantly, that there is not a single linear progress curve with systems inexorably allowing more autonomy to universities. While there is noticeable progress recorded in the field of organisational autonomy, there are also a series of setbacks, with different kinds of meaning for HE in general. Although this is an isolated case, developments in Hungary show that there can be direct interventions of the state aimed at re-asserting more control over university activities. In other cases, such as Ireland, the continued constrained financial conditions consolidate a less autonomous environment for universities over the medium term. Governance is a key factor for universities to perform efficiently and carry out their missions. This includes both a productive relationship with public authorities characterised by an enabling regulatory framework and adequate internal governance models. For the latter, it is essential to achieve the right balance between the necessity to include a broad and diverse university community and the development of structures and processes that support efficient decision-making and, therefore, flexible and responsive management. The overview provided in this paper shows that there is a certain convergence across Europe, despite the existing diversity, to attain this objective.

The above leads to an undeniable conclusion: for good university governance, it is imperative that academic results achieved by institutions be valued, recognised and considered in the allocation of new resources. In addition, there should be mechanisms for long-term funding of public institutions by governments so that universities have sufficient stability in planning their educational offer and consolidating research teams. One of the worst risks that universities can suffer is 'short- termism', so is the existence of operating regulations or organisational structures that limit their creativity and penalise their willingness to take risks and only "work on what is safe".

Some parts of this chapter are based on Bennetot Pruvot E. – Estermann T., *University Governance: Autonomy, Structures and Inclusiveness,* in Curaj-Deca-Pricopie (2018).

IMAGE 19. UNIVERSITY GOVERNANCE INCLUSIVENESS



4. FUNDING: UNIVERSITY FUNDING IN EUROPE

The funding mechanisms of HE Institutions in Europe are very heterogeneous, due to different answers of national governments to economic and social crisis of 2008-2012 years. Some governments have incremented resources devoted to HEIs, introducing funding allocated on competitive basis; other governments have cut relative budgets.

In general terms, market orientation and the model of NPM were translated into pervasive incentive mechanisms at different levels. European universities are living a process of transformation in order to be able to attract funds (not only public), to engage with stakeholders and external parties to develop the "third mission", and to transfer knowledge to the market and to society at large.

Most of governments fund universities through a specific budget (so called block grants) determined in different ways: through bargaining, on historical basis, through specific formulae (sometime on competitive basis) or using a combination of these methods. In recent years, the average of total amount assigned on competitive criteria (with reference to research) is increasing.

The benchmarking analysis highlights that South European countries indicate a decrease of public funding; on the contrary in other countries public funding was maintained (France, The Netherlands) or is increased (Germany, Sweden).

Financial autonomy refers to a university's ability to decide freely on its internal financial affairs. The ability to manage its funds independently enables an institution to set and realise its strategic aims. European universities receive an important proportion of their funds from the state. Whether this funding is provided as **line-item budget** (financial grants which are allocated to specific cost items and/or activity) or a **block grant** (which cover several categories of expenditure and can be internally divided and distributed by institutions according to their needs), the **extent to which it may be freely allocated to different budget lines** and the **length of the funding cycle** are important aspects of financial autonomy.

With regard to university funding the situation in Europe is very diverse, both concerning the share of public funding in the overall income structure as well as the modes of allocation. Direct public funding to universities accounts, for example, for about 40% of the overall income of universities in England, while it accounts for almost 90% in Denmark and Norway, and within this only a certain amount is allocated based on performance. Besides the income sources, the cost structure is

also important with regard to universities' financial sustainability. Therefore, the following section briefly outlines the income structure as well as the cost structure of universities in different systems and provides an overview of the different modalities used to distribute public money to the institutions before the performance-based elements.

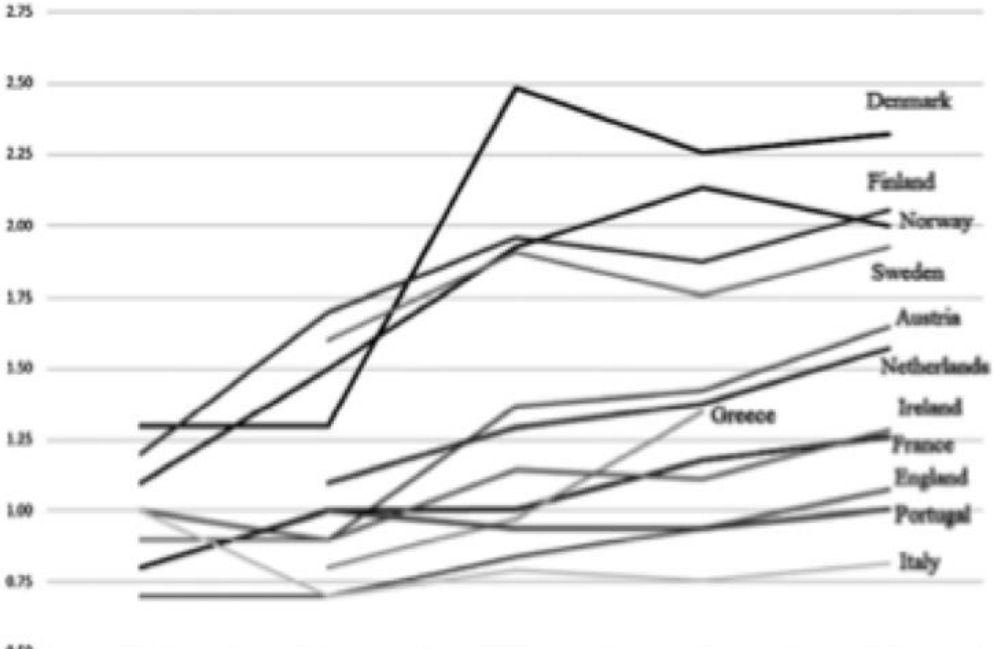
4.1. THE FINANCIAL SOURCES OF HE SYSTEMS

The financial context and the characteristics of the tuition fees should be taken into consideration to better contextualise the shifts in governance modes. Figure presents the development of the percentage of public funding of gross domestic product (GDP) devoted to HE.

Two observations arise: first, Scandinavian countries (i.e., Denmark, Finland, Norway and Sweden) are much more likely to devote high levels of public funding to tertiary education than the other countries in our sample. The percentage of public expenditure relative to GDP systems is approximately two per cent, whereas in Austria and the Netherlands, these values are slightly higher than 1.5 per cent; in all other countries, the investment barely reaches 1.25 per cent (much less in England, Portugal and Italy). The second observation relates to the diachronic trends in the figure, for instance, all countries except Italy increased the percentage devoted to tertiary education between the late 1980s and the present. Furthermore, there are two countries in which performance funding is particularly significant as a criterion of allocation of public funding (England and Italy).

Tuition fees represent another financial source for HE systems. Here, the differences among the 12 analysed countries are rather large (European Commission/EACEA/Eurydice, 2016). There are six countries where there are no tuition fees (Austria, Denmark, Greece, Finland, Norway and Sweden), two countries with very low fees (France and Portugal), three countries where fees are relatively high (England, the Netherlands and Italy) and one country where the situation is quite complex (Ireland) because students do not pay tuition fees if they meet the free fees scheme, although they must pay a relatively high student contribution. We will analyze this topic in a specific section.

IMAGE 20. DIACHRONIC TENDS IN PUBLIC FUNDING



	1989-1993	1994-1998	1999-2003	2004-2008	2009-2013
Austria	1.00	0.90	1.37	1.43	1.65
Denmark	1.50	1.30	2.48	2.26	2.32
England	0.70	0.70	0.84	0.94	1.08
Finland	1.20	1.70	1.96	1.88	2.06
France	0.80	1.00	1.01	1.18	1.26
Greece		0.80	0.97	1.35	
Ireland	0.90	0.90	1.14	1.11	1.29
Italy	1.00	0.70	0.79	0.76	0.82
Netherlands		1.10	1.29	1.38	1.57
Norway	1.10	1.50	1.93	2.13	2.00
Portugal		1.00	0.94	0.94	1.01
Sweden		1.60	1.91	1.76	1.93

4.2. INCOME STRUCTURES

There are important variations in the income structure of universities across Europe and it is very difficult to obtain comparable data because of the differences in funding systems and allocation methods, as well as institutional profiles. There have been often significant changes in the modalities through which public funding is delivered. In addition, it is to bear in mind the important cuts made in the public budgets for universities in a number of countries since 2008. In 2014, 13 systems had lower public funding available to HE institutions than in 2008 (taking into account inflation). Given the importance of this funding source for universities, changes in both the nature and overall amount potentially have the greatest effect on universities' long-term financial sustainability.

Apart from direct public funding, tuition fees and administrative fees represent another income source for universities in several countries. However, there are considerable differences between systems. In 2013 the share of tuition and administrative fees in the overall average income ranged from about one third in England to, for example, none in Norway or Iceland. These differences are also linked to the different policies and legal frameworks regarding tuition fees as shown in the EUA University Autonomy Scorecard. In the six systems covered by the analysis there are, for instance, no tuition fees at all (neither for national/EU, nor for international students at any level) (Brandenburg, Czech Republic, Finland, Hesse, Iceland, Norway) while in some of those there might still be some administrative fees linked to enrolment (e.g. Hesse). In many other systems universities face restrictions in setting the level of tuition fees and often public authorities can decide either on a ceiling or whether to charge or abolish tuition fees at all. Due to political changes the situation of tuition fees in Europe is constantly evolving.

Generating additional income from other sources is perceived as ever more important for the long-term financial sustainability of universities. Here we consider income generated by contracts with business and industry and provision of services (such as renting of facilities, catering services, consultancy, etc.), philanthropic funding and when possible, European funding. Overall, these types of additional income sources exceed 10% of the average universities' income in most systems.

4.3. COST STRUCTURES

In addition to the income structures, cost structures play an important role in universities' financial sustainability. It is important to consider in this regard the high share of personnel costs which account, on average, for around two thirds of the overall expenditure of a university, whereby considerable variations exist between institutions. The first EUA study on funding showed that participating universities' personnel costs ranged from 44% to 73%. In addition, usually also costs for renting and/or maintaining infrastructure and buildings are a very important cost factor for universities depending on the system and whether the universities own their buildings.

This high share of fixed costs on the overall expenditure limits the flexibility of universities to adjust by reducing costs, also because in many systems the autonomy of universities with regard to financial and staffing matters is limited. Only in eight out of 29 systems covered by the EUA autonomy scorecard universities are allowed to sell their buildings without restrictions. Universities can freely decide on salaries of

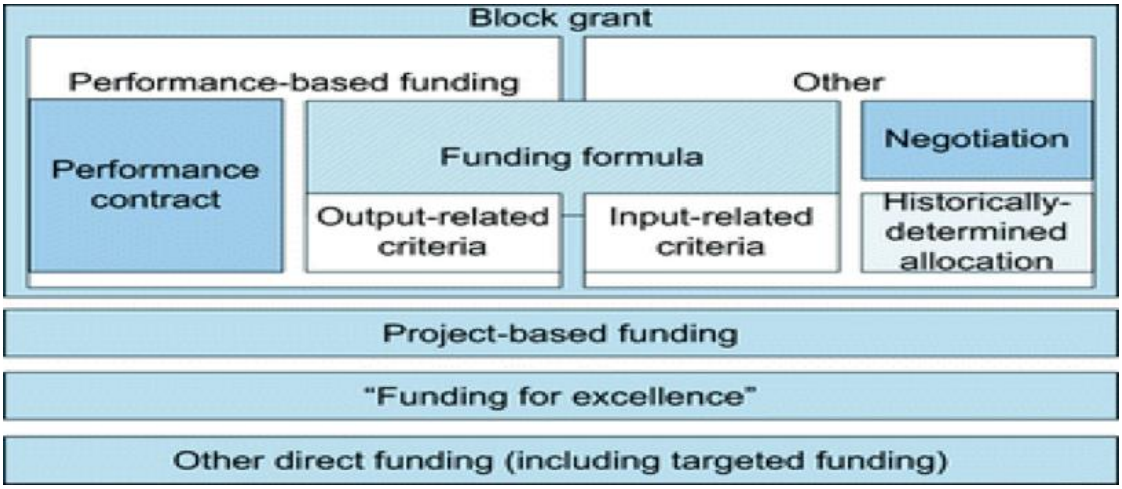
senior academics in only five systems and only in 10 systems for senior administrative staff. In all other systems different types and degrees of restrictions apply. Public funding modalities have to take account of this and provide a high share of funding based on input (e.g. number of staff, floor space, etc.), which signifies that the extent to which university funding can be based on real performance is rather limited in most systems.

In most systems in Europe universities receive basic recurrent public funding to cover their core activities through a block grant. A block grant is understood as *"financial grants meant to cover several categories of expenditure such as teaching, ongoing operational costs and/or research. Universities are responsible for dividing and distributing such funding internally according to their needs (the flexibility may be curtailed by minor restrictions)"* (Estermann & Bennetot Pruvot, 2011, p.14).

As shown by the next figure, the overall amount of the block grant may be determined in different ways, such as through negotiation, on a historical basis, via a funding formula or through a performance contract. Often these elements are combined, such that a part of the block grant is negotiated, while another part might be determined on a historical basis or allocated via a funding formula or a contract. The importance of these different elements in determining the overall amount of the block grant varies across the systems.

Besides this, public funding is also increasingly tied to projects that are awarded based on competition, notably in research. In addition, several systems have established funding streams for excellence in various ways, sometimes as large-scale schemes such as in Germany and France, or even embedded in regular recurrent funding as in the UK.

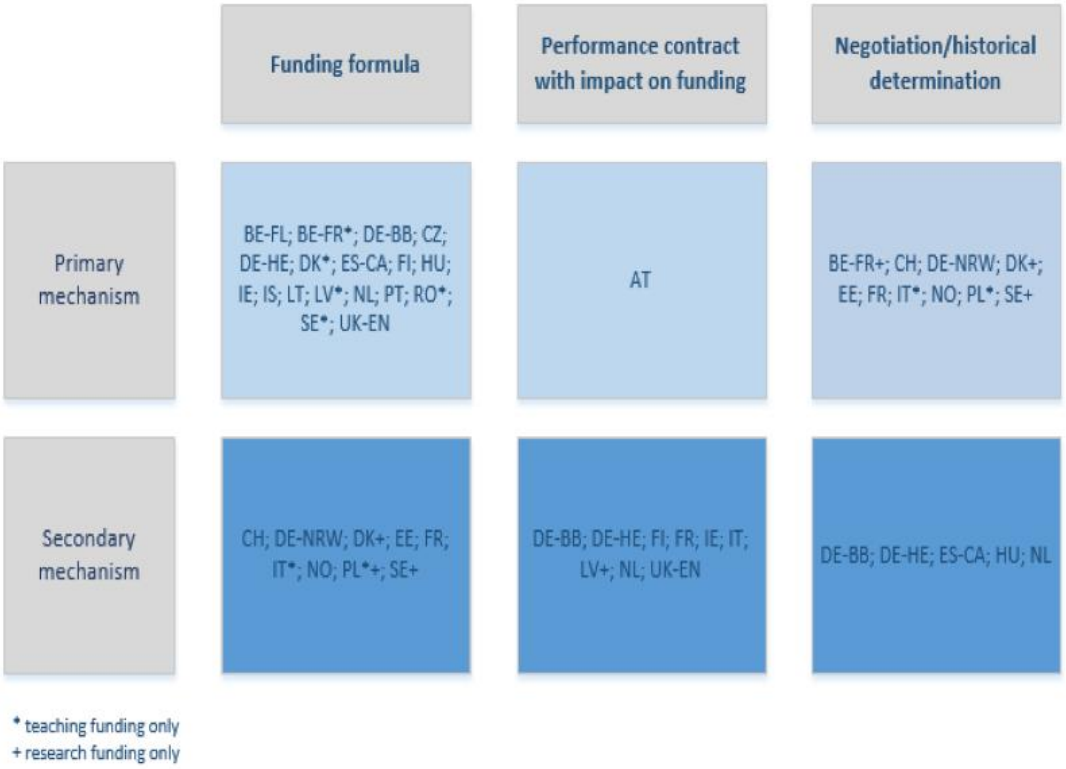
IMAGE 21. BLOCK GRANTS



In this part of the report we focus on allocation mechanisms for block grants as in most cases they are the main method of distributing public funding to universities in Europe. Although formula-based block grants are the main way of delivering public funding in the majority of the systems considered, negotiated block grant / historical allocation remains the most important mechanism in some large systems such as in France, Italy and Poland (for teaching only in the latter two) as well as some smaller ones (see Table 1). Most countries, however, have a mix of different allocation modalities and the analysis shows a great diversity between systems.

Table 1 is an attempt to provide an overview of allocation mechanisms for block grants across the systems considered. It also tries to group them according to the allocation mechanism used and its importance with regard to the overall block grant allocation, whereby a main mechanism is referred to as the mechanism which allocates the largest share of the block grant and a minor mechanism is any other mechanism used for this purpose. The table is a simplified way of grouping systems in order to enable comparisons. The complexity of funding mechanisms across Europe makes this a challenging exercise as sometimes different allocation mechanisms are combined

IMAGE 22. OVERVIEW OF ALLOCATION MECHANISMS FOR BLOCK GRANTS



In most systems the block grant covers teaching and research activities, while in some there is no basic funding for research as this is exclusively allocated on a competitive basis, indicating that not all universities always receive it (e.g. Italy, Romania). Many systems have more than one mechanism to determine the block grant given to institutions, but only in some the mechanisms for teaching funding and research funding are clearly distinguished.

In Table 1 teaching and research funding are therefore only distinguished if there are separate mechanisms to determine the block grant linked to these two areas (e.g. two different formulae as in Sweden; or a formula for teaching and a mixture of historical allocation and a formula for research as in Denmark) or if, for instance, the block grant only determines teaching funds (e.g. Romania). As funding mechanisms are subject to change and reforms the table above provides a simplified snapshot of the situation at the time when the data was collected.

4.4. FUNDING FORMULAE

A funding formula in this context is understood as a mechanism to determine the amount of funding allocated to a HE institution using a mathematical formula which includes variables based on indicators, such as student numbers, etc. This can be differentiated from other ways of determining the amount such as negotiation or historical allocation. The variables in a funding formula refer to the past (e.g. past year).

Purpose

Funding formulae are often introduced to make funding allocation more transparent by linking it to measurable indicators. Compared to historical allocation this allows taking into account changes over the years, such as an evolution of student numbers, as the data is collected at regular intervals.

Composition

Besides the differences in importance of the formula funding with regard to the amounts distributed, the composition of the formulae also varies greatly. In many systems with formula funding, input indicators such as student numbers (at Bachelor and Master level) often play the most important role in determining the amount of funding a university receives via a block grant.

The corresponding output-oriented indicators (number of Bachelor and Master degrees), are used less frequently and/or have often less weight in a formula. It is interesting to note the importance of some output-oriented criteria, which are usually linked to research output: doctoral degrees, international/ European funding and external funding are considered the most important criteria, followed by teaching-related output criteria of Master and Bachelor degrees and the number of credits obtained. Other commonly used output indicators are research evaluations and research contracts.

Most formulae include a combination of input- and output-related indicators as well as several other indicators linked to specific policy goals (e.g. internationalisation, gender aspects, interaction with society, etc.). Where formulae for teaching funds and research funds can be distinguished, those for teaching funds are in most cases primarily input-oriented (Ireland, Poland, Romania, Sweden), while those for research funds are mostly primarily output-oriented (Ireland, Poland). For systems that have one formula (including indicators for teaching and research) the majority are primarily

input-oriented. Only the Danish taximeter system for teaching funding is exclusively output-oriented, largely based on the number of degrees awarded.

IMAGE 23. COMPARATIVE OVERVIEW OF INDICATORS USED IN FUNDING FORMULAE ACROSS EUROPE

	BE-FL	BE-FR	CH	CZ	DE-BB	DE-HE	DE-NRW	DK	ES-CA	FI	FR	HU	IE	IS	IT	LT	LV	NL	NO	PL	PT	RO	SE	SK	TR	UK-EN
No. of BA/MA students	x	x	x	x	x	x			x		x	x	x		x	x	x	x	x	x	x	x	x	x	x	
No. of doctoral students/ candidates		x		x					x			x	x		x		x			x	x	x		x	x	
No. of staff					x				x	x	x		x		x	x				x	x	x			x	
Floor surface									x			x				x						x			x	
ECTS attained/exams passed/year completed	x							x	x	x					x				x		x	x	x			x
BA/MA degrees obtained	x			x	x		x	x	x	x	x			x	x			x			x	x		x	x	
Doctoral degrees obtained/theses completed	x	x			x	x				x	x		x					x	x	x	x	x		x	x	
Research evaluation mechanisms				x					x		x	x			x					x	x	x	x	x	x	x
Patent applications				x					x													x			x	
Successful patent applications																				x		x			x	
External funding obtained			x	x	x	x	x		x	x		x	x		x				x	x	x	x	x	x		
EU/international funding obtained			x	x					x	x		x			x					x	x	x	x	x	x	
Scientific activities				x							x				x					x	x	x			x	
Research contracts obtained				x					x		x		x		x					x	x	x			x	
International ranking outcomes											x	x										x				
National ranking outcomes											x	x										x				
Graduate employment rate				x						x		x			x						x	x		x		
International students				x	x	x		x	x			x			x				x	x	x	x		x	x	
International staff				x		x				x										x	x	x			x	
Diversity-related indicators					x	x	x		x												x				x	
Community outreach									x			x										x			x	
Review of strategic plans of universities										x								x								
Publications/citations	x			x						x		x							x	x			x			
Student-staff ratio																				x						
Income from science and technology transfer				x		x			x																	
Degree completion in standard time of study								x						x												
Students who took exams											x			x												
Staff structure/quality				x								x								x						
"Added value" of a diploma											x															
No. of publishing researchers											x									x						

One very important element of the funding formula is how it accounts for change in the value of an indicator. In most of the systems, funding allocation is based on the principle of a closed envelope, meaning the formula is a pure distribution mechanism for dividing the basic funding foreseen for research and/or HE within the state budget among the universities. Therefore, caps and scaling factors are usually embedded in the formula to control, for example, growth in student numbers/credits awarded.

Example: Poland – redistribution of teaching funds

In Poland universities receive funding for teaching through a block grant that is to a large extent based on historical allocation (65% of previous year's grant), while the part related to current parameters is formula-based being a weighted sum of: the overall number of students (weight 0.35); the number of academic staff (weight 0.35); a parameter reflecting the students-per-teacher ratio (weight 0.10); the number of research grants (weight 0.10); the number of disciplines in which the university has rights to award doctoral degrees (weight 0.05); and the number of students exchanged with other universities in the framework of mobility programmes (weight 0.05).

The parameters used (like the overall number of students, the number of academic staff) are themselves calculated as weighted sums of different categories of students, different categories of staff etc. E.g.:, in calculations of the number of academic staff, professors are counted with a weight of 2.5, while lecturers with a doctoral degree account for 1.5.

This model is a distribution mechanism for dividing State educational budget among HEIs. The total budget size is thus the input parameter, while the amount per student is the outcome, and not vice-versa. This means if the budget is constant, an identical change in all universities (e.g. an increase in student numbers of 5%) does not change the absolute amount received by a university, but the amount per student decreases.

Source: DEFINE Focus Group Feedback

4.5. PERFORMANCE CONTRACTS

Another way of steering institutional behaviour are so-called performance contracts, target agreements or development contracts, whereby certain goals are agreed between public authorities and universities.

Purpose

They can have various purposes such as:

- strategic positioning of universities and profiling;
- structuring the dialogue between the ministry and universities; - increasing transparency; and
- detailed steering and setting targets.

Types

Different types of performance/target agreements and development contracts exist in 14 of the systems considered in the study. In 10 systems they can have an impact on funding, albeit to very different extents. In the majority of systems they are seen more as a governance tool than as a funding instrument.

IMAGE 24. SIMPLIFIED OVERVIEW OF PERFORMANCE CONTRACTS AND THEIR LINK TO FUNDING

<table>
<tr><th colspan="3">Systems with performance contracts</th></tr>
<tr><td colspan="3">AT; CH; DE-BB; DE-HE; DE-NRW; IT; DK; EE; FI; FR; IE; LV; NL; UK-EN</td></tr>
<tr><td colspan="2">Direct link to funding</td><td>No direct link to funding</td></tr>
<tr><td colspan="2">AT; DE-BB; DE-HE; IT; FI; FR; IE; LV; NL; UK-EN</td><td rowspan="3">CH; DE-NRW; DK; EE</td></tr>
<tr><td>Basic recurrent funding</td><td>Additional funding</td></tr>
<tr><td>AT; DE-BB; DE-HE; FI; FR; IE; LV; NL</td><td>IT</td></tr>
</table>

4.6. FORMAT AND CONTENT

While performance-based elements in funding formulae always relate to past-performance, performance contracts are agreements about future performance setting goals to be achieved. The goals can be specific to the university and more or

less aligned with its strategy or they might be derived from more general HE and research policy goals of the ministry. They can be defined in more or less detail, but usually not all elements are strictly linked to the performance of a university. Targets might be described as results to be achieved leaving it up to the university to decide how or which concrete actions are to be undertaken within a given timeframe. They might be described as more qualitative measures (e.g. improve equal access of men and women to leading academic positions) and/or be linked to quantitative indicators (e.g. increase the number of female professors) similar to those included in funding formulae. Depending on the nature of the goals and targets, the procedures for assessing their achievements also vary and are more or less complex. In some cases the evaluation might simply take place in the form of discussions between the ministry and the university, for others a complex data collection is necessary.

Below are some examples to illustrate the differences. In the Netherlands performance contracts were introduced in 2012 and since then a set amount of the block grant (currently 7%) is distributed on the basis of objectives agreed between the Ministry of Education and individual universities. After three years a review commission will assess whether these objectives have been met, but it remains to be seen whether this will really have a direct IMPACT ON FUNDING (SEE EXAMPLE).

Example: The Netherlands – foster institutional profiling

In 2009-2010 the Dutch government established a committee of national and international experts to give advice on reforming the Dutch HE system to equip it for the expected massive increase in student numbers (according to forecasts about 1/3 by 2020), reduce the drop-out rate and make the system more responsive to the needs of the knowledge economy. Following the main recommendation of the committee, which was to improve quality and diversify the HE system, the government developed plans to change the funding system in order to encourage institutional profiling and stimulate differentiation in the educational offer.

The plan was to strengthen the performance component in the funding system which previously was mainly input-based for all HE institutions (60% of the block grant was allocated based on enrolment, 20% on a fixed (historical) basis and 20% based on the number of diplomas awarded). Therefore, performance agreements between the ministry and individual HE institutions were established. As a first step HEIs were

asked to draft a strategic plan with their objectives for 2012-2016 regarding the following policy priorities:

- ***Improve educational achievements*** (seven indicators; graduation rate; drop-out rate; study switch; quality assessment or number of students in excellent tracks; educational intensity; overhead)

- ***Strengthen education and research profile*** (educational portfolio; priorities in research; response to strategic priorities in national innovation policy and grand challenges)

- ***Increase the impact and utilisation of research*** (exploitation)

The universities were free to choose the format of their strategic plan as well as develop their own objectives, but it had to include targets for 2015 in relation to the seven educational indicators mentioned above. In summer 2012 all strategic plans were assessed by an independent review commission taking into account their alignment with the national policy goal of institutional profiling and their feasibility. In case of a positive evaluation the minister then signed a performance agreement with the institution.

7% of the block grant was foreseen to foster quality and profiling separated into two streams:

- 5% is conditional funding (for universities to obtain their share of this stream they have to have a performance agreement with the ministry), and
- 2% is selective funding (this stream includes a competitive element as those universities which have achieved a higher score in the assessment of their strategic plan receive relatively more money).

In 2016 the review commission will evaluate the performance of HEIs with regard to their targets. In case that a HEI does not reach its targets related to the seven educational indicators in 2015, it is foreseen that the HEI receives a smaller share of the conditional funding for the period 2017- 2020.

Source: Ministry of Education, Culture and Science of the Netherlands

In Brandenburg and Hesse, two of the three German "Länder" included in the study, a certain percentage (2% and 5% respectively) of the block grant is linked to the achievement of the objectives agreed upon in the performance contracts specific to each university. However, the assessment is not very rigorous and underperformance has so far never been sanctioned by funding cuts.

Italy is an example of a system where the performance contract is not linked to the block grant distribution, but to additional funding (see Example).

Example: Italy – performance contracts linked to additional funding

In Italy the ministry and the universities conclude three-year contracts, whereby the achievement of the agreed objectives determines the allocation of additional resources. In 2013 the additional funds available were limited by law to a maximum of 2.5% of the public funding received by the university. The objectives can be linked to the following areas:

- Student services
- Internationalisation/interaction with the local environment
- Foreign staff
- Cooperation among universities
- Rationalisation via redistribution of courses at regional level

The university chooses among these areas and sets a starting point as well as targets; funding is partly provided at the beginning (to facilitate investments) and partly at the end of the period (upon meeting the targets).

Source: Italian Ministry for Education, Research and University

A performance contract may also be used as a complementary instrument to a funding formula either to align the contract's objectives with the formula or to mitigate some of the negative effects of a formula by, for instance, setting additional objectives for the quality of teaching and research.

Example: Germany - NRW – aligning different mechanisms

In North Rhine Westphalia (NRW) (Germany) each university has an individual performance and target agreement with the regional ministry which runs over a

period of two years. It includes objectives that are negotiated between the ministry and each university and they are mainly linked to teaching (e.g. quality of the offer; successful completion) and for some universities more specifically to programmes preparing future school teachers. The achievement of the objectives is not linked to additional funding.

A paragraph in the target agreements refers to the fact that the ministry provides "sufficient and sustainable" funding to universities' contingent on the overall budget of the region and with these means the universities should achieve the objectives. Although there is no direct link to funding in the agreements, the achievement of some of the objectives still matters to some extent with regard to funding. Some of the objectives relate to the performance indicators that are used to distribute 23% of the block grant. In general the performance and target agreements in NRW are rather a soft steering mechanism, the purpose of which is more to provide a means for coordination between the universities and the ministry than a funding instrument.

Source: German Rectors' Conference (HRK)

Table 4 gives an overview of the extent to which performance contracts are linked to funding in the different systems. Due to the lack of comparable data, not all of the systems in which performance contracts with an impact on funding exist could be included in the table.

IMAGE 25. THE SHARE OF FUNDING ALLOCATION THROUGH PERFORMANCE CONTRACTS

System	Funding
IT	Additional funding of max. 2.5% of public funding received by university
AT	Overall block grant linked to performance contract
NL	7% of block grant
DE-HE	5% of block grant (but no rigorous sanctions so far)
DE-BB	2% of block grant (however no rigorous sanctions so far)
IE	around 1% of block grant
LV	< 1% of block grant

This does not mean that funding is in all cases entirely dependent on performance, as the contracts may include a variety of different elements which are not related to performance.

5. PBF (PERFORMANCE-BASED FUNDING) IN HE SYSTEM

This Report presents a literature review of scholarly discussing the general aspects of funding system and HE sector. After that, discusses the funding systems in HE Institutions (HEIs) adopted by the developed and developing countries. Next, the paper focuses on the negotiation funding system at HE system and the various components and techniques of Performance Based Funding (PBF) mechanisms. The introduction of performance based funding systems is one of the central mechanisms through which many EU Member States have tried to increase the effectiveness and performance of their Public Sector Research systems.

The allocation of public funding to HE has been increasingly subject to debates and change in recent decades. The changes have often been linked to changing beliefs and conceptions about how the public sector should be steered and managed. The backdrop to this was the New Public Management (NPM) approach to governing public organizations which argues that the public sector should be addressed with similar management tools as the private sector.

Under NPM, the predominant steering approach in European HE systems has emphasized decentralization, with HE institutions (HEIs) enjoying a large autonomy and receiving a lump sum budget from their funding authorities. To a large extent, HEIs are autonomous in areas such as the provision of educational programmes, managing their research portfolio, their human resources and their asset and property portfolio. This governance approach may be characterized as "state supervision steering". The government limits itself to a restricted number of "framework steering" elements: setting the tuition fees and distributing student financial support; organizing quality assurance of education and research and determining whether new education providers and new degree programmes qualify for public funding.

In contemporary world, HE system requires differentiation and a greater reliance on markets. The government's role is to act as a facilitator. The idea is that more institutional autonomy will produce higher levels of quality, diversity and efficiency because a more diverse set of HEIs will better respond to student demands and

societal needs. The competition and search for prestige by HEIs will produce better educational and research performance and more distinct educational and research profiles. However, the question is whether more autonomy combined with more market-based approaches will indeed produce more diversity and better performance.

In light of the latter question, concern has been expressed about this governance model that stresses autonomy and decentralisation. Criticism was targeted at how quality assurance and accreditation were shaped, with some arguing that accreditation was too inward-looking, carrying too few incentives to enhance quality and achieve excellence. In addition, there were concerns about HEIs becoming increasingly identical in their race for academic reputation. And yet, others were pointing at tendencies such as fragmentation, duplication and diseconomies of scale resulting from marketization.

The attention for the less-desirable effects of marketization has contributed to the emergence of new forms of accountability and new interventionist policies. An example is the reshaping of accreditation and quality assurance mechanisms, directing them more towards students' achieved learning outcomes. A related example is the introduction of information tools that try to make HE more transparent. A third example - very much in line with the NPM approach - is to influence HEIs' behaviour by concluding contracts between the public authority and each HEI to guarantee that the services expected from the HEI and their quality will be delivered.

In this Report, we will analyse performance contracts as a way to combine institutional autonomy with new forms of steering and accountability. Performance contracts, and its related concept of performance-based funding imply a new approach to steering, with a contract model replacing state supervision. The contracts are "individualised" agreements, embedded in a clear accountability context, that allow governments to steer on specific societal targets. This may be understood as the next stage in NPM. Performance-based funding (PBF) is a frequently cited example of a new regulatory policy instrument. While some may interpret it as governments moving away from input-steering and preventing intrusion into the HEIs' internal affairs, PBF schemes may also be seen as a means to allow governments to force universities into certain desired directions. This raises questions about the impact of PBF and performance contracts on institutional behaviour. Does

performance steering matter for the performance of a national HE system? Will it stimulate HEIs towards behaviour that is better aligned with national goals? And do performance-based approaches have any unintended effects, e.g. a return to forms of bureaucratic oversight?

We will present some characteristics of PBF systems in several European countries.

Models for public funding of HEIs vary across countries/jurisdictions. Most countries employ funding formulas that link the core (recurrent) grant that an HEI receives from its funding authority (a ministry or funding council) to input indicators such as student enrolments. In recent years, many countries have introduced measures of performance in the funding arrangements. PBF was introduced in the belief that it would steer HEIs' behaviour towards producing higher levels of performance, quality and efficiency.

Number of indicators in funding formulae (decreasing importance)

No. of BA students, No. of MA students, No. of doctoral degrees, Amount of EU/international funding, Amount of external funding, No. of MA degrees, No. of BA degrees, No. of ECTS, No. of doctoral students, No. of staff, Research evaluations, Research contracts, International students, No. of doctoral theses, Scientific activities, Patent applications, Successful patent applications, Diversity indicators, International staff, Graduate employment rate, Floor space, Community outreach programs, National rankings, International rankings.

In recent overviews of performance indicators included in funding formulae of OECD countries, it is illustrated what the activities are where governments want HEIs to perform better on:

- Number of BA and MA degrees: Austria, Denmark, Finland, Netherlands, Germany,
- Number of exams passed or credits earned by students: Austria, Denmark, Finland,
- Number of students from underrepresented groups:, Ireland, Germany,
- Study duration: Austria, Denmark, the Netherlands,
- Number of doctoral degrees: Denmark, Finland, Germany, The Netherlands

- Research output (e.g. research quality, impact, productivity):, Denmark, Finland, UK
- Research council grants won:, Finland, Germany, Ireland, Scotland,
- External income (i.e. non-core revenues): Denmark, Finland, Germany,
- Revenues from knowledge transfer: Austria, Scotland.

Obviously, what exactly is understood as performance varies across HE systems, as well as between subsectors of the HE system (e.g. research universities versus universities of applied sciences), depending on the challenges and ambitions of the country.

What are the characteristics of performance contracts (or performance agreements)? For one thing, they are ex-ante funding. Formula-based funding arrangements are backward looking, with indicators in the formula referring to the recent past (ex-post funding). In performance contracts, funds are based on a bilateral agreement between the funding authority and the HEI that includes performances that an institution promises to deliver in the (near) future and the budget that the HEI will receive in return for this. In this case, the HEI's budget is (partly) based on a specification of its goals for the future (ex-ante funding).

In performance contracts (or performance agreements), each HEI is invited by the funding authorities to specify its ambitions. The agreement usually includes a financial penalty or sanction of some sort if objectives are not achieved.

A performance contract seeks to redress the one-size-fits-all nature of formula-based funding that rewards all HEIs based on the same formula and the same indicators. With performance agreements, there is more room for HEIs to have additional aspects of their performance reflected and connected to financial rewards. Performance agreements can handle situations where HEIs have multiple objectives and - within nationally set boundaries - can set their own target levels, given their particular mission and strengths. A funding agency or independent committee usually oversee the drawing up of the agreements to guarantee that agreements are in line with national objectives and monitor progress during the contract period.

The performance agreement in some countries is not always directly linked to (a separate portion of) the budget. Performance agreements are not only meant to strengthen performance but also have aims like encouraging HEIs to strategically

position themselves (institutional profiling), improving the strategic dialogue between the government and HEIs, or informing policy-makers and the public at large about HEIs' performance, thus improving accountability and transparency.

The share of the HEIs' public recurrent grant that is based on performance is difficult to determine exactly because both the funding agreement and the formula often mix input and output elements. For instance, in the Netherlands, the performance agreements constitute on average 7% of a university-teaching grant, whereas 20% of the (separate) formula-based teaching allocation is based on degrees, and another 40% of the (separate) research allocation is also based on degrees. Thus, on average, a quarter (for universities) to a third (for universities of applied sciences) of funds is based on performance measures.

The benefits of a diversified HE system are well recognised, and performance agreements are expected to help achieve this goal in, e.g., Germany and the Netherlands. The broader set of objectives and indicators facilitated by the performance agreements are expected to promote institutional diversity. Performance agreements may prevent one of the risks of formula funding, namely that all HEIs respond to the formula's indicators in the same way, which would result in more homogeneity instead of more diversity in the system.

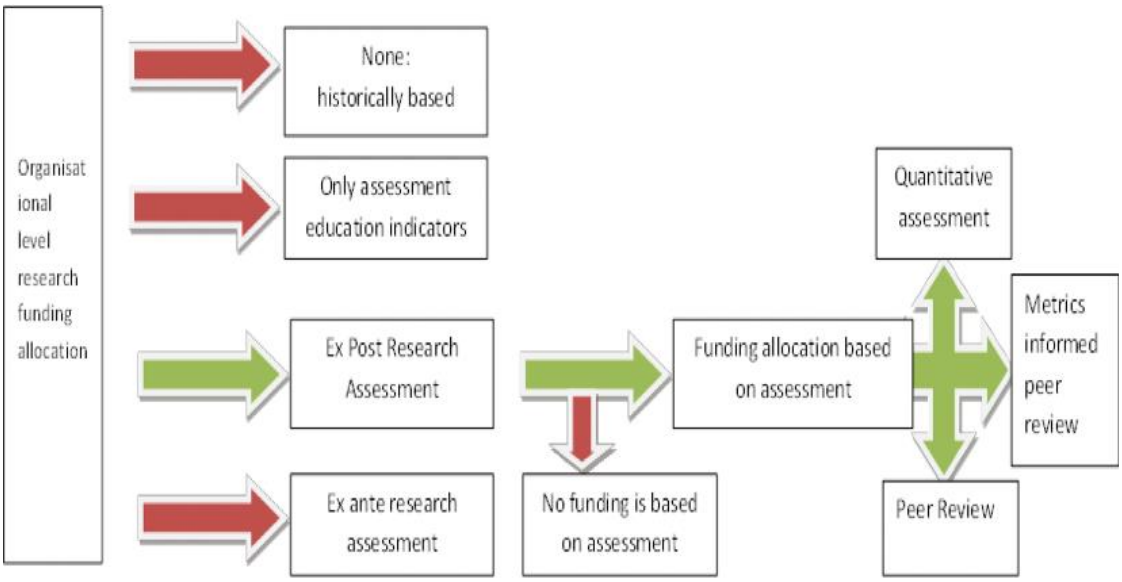
Countries will be classified according to the type of Performance Based Funding System they have in place, distinguishing between:

1. countries who have no performance based elements in their university funding allocation system and countries which allocate funding solely on the basis of education related metrics or assessments (without research output considerations),
2. countries which based their funding allocation formula on quantitative metrics highlighting those who use different types of bibliometric approaches and
3. countries which allocate funding on the basis of peer review based assessment exercises. The latter category can be separated into metrics based peer review and "pure peer review".

Formulae are generally used in the allocation of organizational funding and can be applied to the total amount of public funding transferred to the organizations or only to a part of it. An alternative approach is the signing of performance contracts between universities and ministries in order to agree ex ante on a set of targets that

the universities need to achieve in order to be eligible for part of the organisational level funding. Considering its close link to RPBF, some discussion of such performance contracts will be provided in this report. Figure below gives a graphical representation of this definition of PBF.

IMAGE 26. RESEARCH PERFORMANCE-BASED FUNDING SYSTEMS

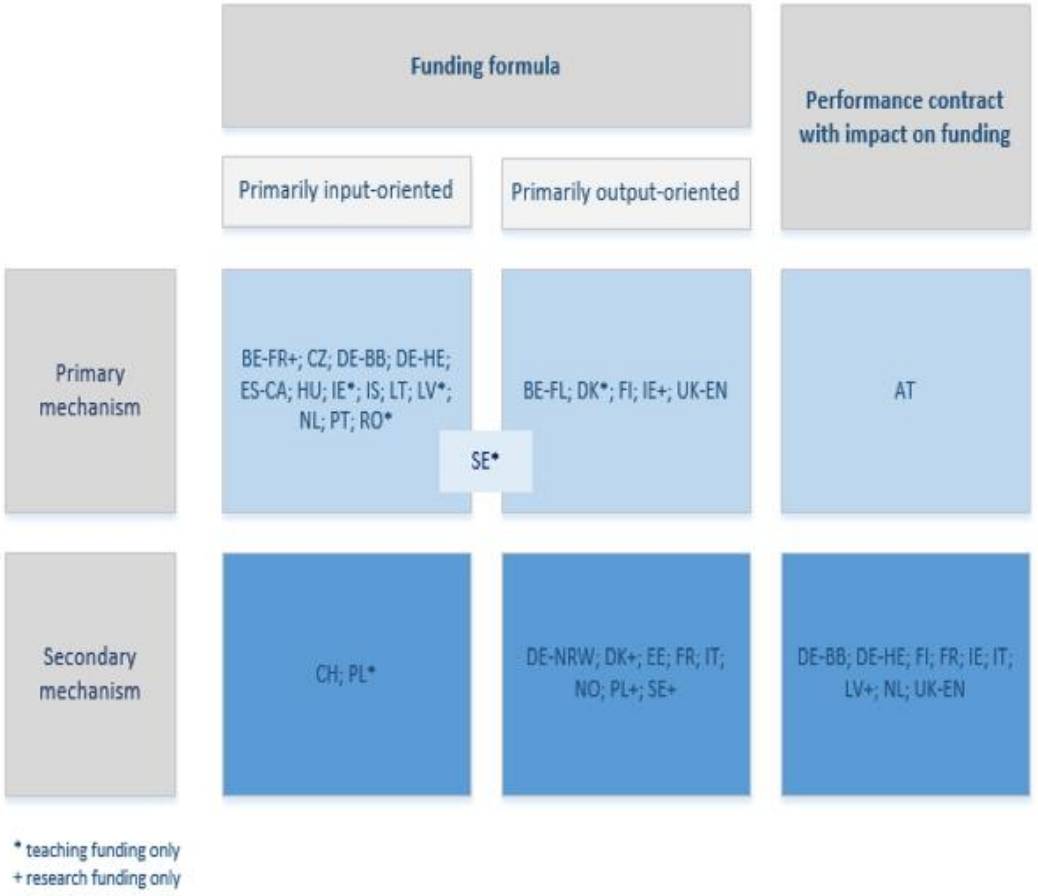


SOURCE: JONKAS- ZACHAREWICZ (2017), P. 14

When looking at the overall allocation of block grants, it is noted that majority of systems consider their funding allocation mechanisms at least partially performance-based for teaching (via graduate- related criteria), with the most extensive case being Denmark, and partially or mainly performance-based for research, where indicators for publications and external research funding are normally taken into account. However, Table 6 shows that a primarily input-based formula whereby the largest part of recurrent public funding is distributed in this form is the most common method of allocation, which is used by 13 of the systems considered in the study. It is often combined with other mechanisms such as performance contracts or budget negotiations and historical allocation.

Due to the complexity of funding mechanisms across EU it is, however, not possible to provide the exact share of funding linked to performance in each system. As illustrated by Table 1, one mechanism, whether it be a formula or a performance contract, often contains a mixture of different elements of which only some are linked to performance and which makes it difficult to disconnect them. A good example of this complexity are performance contracts in Austria. They combine a budget negotiation with defining detailed individual objectives for a university and some targets and indicators to measure the achievement of broader education and research policy goals. This implies that even if the instrument is referred to as a performance contract, the provision of funding is not entirely dependent on performance.

IMAGE 27. PERFORMANCE ELEMENTS IN RECURRENT PUBLIC FUNDING FOR UNIVERSITIES



SOURCE: EUA, DEFINE PROJECT, 2015

5.1. FUNDING SYSTEM

A funding system can be defined as a source of money allocated to a specific purpose. Funding is not simply a mechanism to allocate funds to finance HEIs but an instrument for the government or public authorities to ensure that the HEIs administration has the same goals with them, other than that the funding adopted by the government to influence the behaviours of agents or HEIs.

A fund can be recognized as an act of providing resources, for examples federal government setting money to build a new sport centre or a university setting money to award a scholarship. Most Western countries such as Belgium, Canada, France and even the European Commission shows that there is an increasing interest in new types of audit system, evaluation and reporting of financial system transparent and disclose the results and performance of public sector organization on the quality of reformation of the public management. Improvements in the public funding system involve a shift from provision of incremental development of public budgets to performance criteria, and have been interpreted as an effort of the component of the public funding to use more systematic and position the funding system to control the activities of organizational performance and to improve the efficiency and quality of public sector.

There are significant differences in the funding system for HE (HE) and the different mechanisms used in the distribution of government allocations. We adopt a typology of funding system that differentiates the funding either through negotiated formula, demand-side vouchers, performance-based funding, funding for specific purposes and/or combined funding for teaching and research, block grant funding and project funding. The method of funding systems implemented has a diverging impact, but it seems to contribute to advantage and disadvantage of the features of funding system which influence the HE institution to the policy makers who are liberated to choose not only the basis of funding but additionally the unwanted effect as well.

5.2. NEGOTIATION FUNDING SYSTEM

Negotiation funding system is one of the most common methods used. It is also the first step for many other alternative dispute resolution procedures. Successful

negotiations usually result in some sort of exchange or gain advantages in the outcomes of collective advantages. Exchanges may be significant examples like money, time commitments or specific behaviours or intangible ways such as an agreement to change the attitudes or expectations, or apology. In the education sectors traditional fund distribution technique, the provision of funding is determined by a negotiation involving the government and HEIs, through input criteria and historical trends as reference. HEIs and systems in most countries are typically funded through negotiated budgets or funding formulas that focus on inputs or the number of students enrolled. The amount of funding determined through the negotiation process, conventionally predicted on historical trends and typically distributed to HEIs in Line-item budgets or Block Grants.

IMAGE 28. TYPE OF NEGOTIATION FUNDS: LINE-ITEM BUDGETS AND BLOCK GRANTS

Line-item Budgets	Block Grants
Provide a fairly rigid restriction on how HEIs can spend the money they receive from the government or other public funds.	Give institutions more flexibility and autonomy compared to line- items to determine how public funds are spent.
Little dispute among departments within the organizations	Non-discretionary budget allocation to specific school determined by formula based on objective parameters such as number of students, type of institutions, etc.
Funding is allocated based on past expenditures that can also save time and effort in determining the budget analysis	Flexibility: elimination of line-item budgeting, direct linkage with program budgeting.

Co-funded by the Erasmus+ Programme of the European Union

The negotiation fund allocated has been criticized as a non-transparent system and fund passed on interest should be changed to the fund mechanism that more transparent (which encouraged the participation from the students to the HE institution that leads to the contribution of funding system in HE) and guarantee the quality of performance as the public wanted in HE.

The results of negotiations would typically be uncertain because the process somewhat lacked transparency, leaving room of too questions about the government's decision, funding mechanisms based on more performances criteria that would also promote an increase of efficiency and would give some degree of intelligibility and confident.

The bureaucratic involve at some stage in negotiation process provides no reason for efficiency, entrenches conservatism, makes it extremely difficult to rapidly adjust the allocation of resources to meet changing requirements, and inhibits HEIs from adapting to the demand for relevant quality.

5.3. PERFORMANCE BASED FUNDING (PBF)

The evolution of allocation funds mechanisms for public expenditure and investment in a number of countries, have been through the positively changed. The funding system of HE had switched it pattern from the traditional type of negotiations funding (takes part on behalf of the government and HEIs) to positively increased (into sophisticated) funding mechanisms to protect the distribution results from excessive political pressure and encourage desired behaviours HEIs.

Performance based funding (PBF) is a mechanism in which the output or activities result are used to evaluate the quality and effectiveness of institution amongst public HEIs. This mechanism resulted from the multiple stresses that HEIs and government have to endure to ensure their budgets' capacity to provide a high quality education for future generations. PBF is mainly applied in the healthcare and HE sectors.

For several countries such as the United Kingdom (UK), Australia and Denmark governments allocate public funds for HE based on performance evaluations, and normally have specified indicators.

Consequently, the PBF mechanism has been created to deal with more than just the problem of limited funding; it is also designed in an attempt to form a culture of assessment and institutional improvement in HEIs around the world.

To establish a transparent funding and budgeting system using PBF mechanism, the government must identify performance indicators of HEIs. Performance indicators in PBF mechanism vary according to the appropriateness of a country's HE system, in fact not limited to student achievement, performance assessments, student attendance, graduation rates, certificates conferred or course completion. Several countries use the statistics of graduates, the amount of research grant funds, and research and journals publications, as types of performance indicators. The majority of HEIs worldwide have already adopted PBF mechanisms that rely on performance indicators.

IMAGE 29. PERFORMANCE INDICATORS FROM PREVIOUS STUDIES

No	Author (s) and (year)	Research Title	Performance Indicators (PIs)
1.	Doug and Gomes (2007)	Performance Indicators and University Distance Education Providers	• Student participation/access indicator • Completion/Retention • Transfer Student Performance • Financial Indicators • Space Utilization • Student Satisfaction • Employment Indicator • Research Indicators
2	Higher Education in the UK (2013)	Performance Indicators in Higher Education in the UK	• widening participation indicators • non-continuation rates (including projected outcomes) • module completion rates • research output • employment of graduates
3	Thomas (2011)	Performance-based Funding: A Re-Emerging Strategy in Public Higher Education Financing	• General outcome indicators (graduation rates, • Certificates conferred, etc.) • Subgroup outcome indicators (Pell Grant recipients, non-traditional students, etc.) • High-need subject outcome indicators (STEM fields, nursing, etc.) • Progress indicators (course completion, transfer, credit milestones, etc.)
4	David Battersby, (2009)	An Indicator Framework for Higher Education Per formance Funding	• Student participation and inclusion • Student experience • Student attainment • Quality of learning outcomes

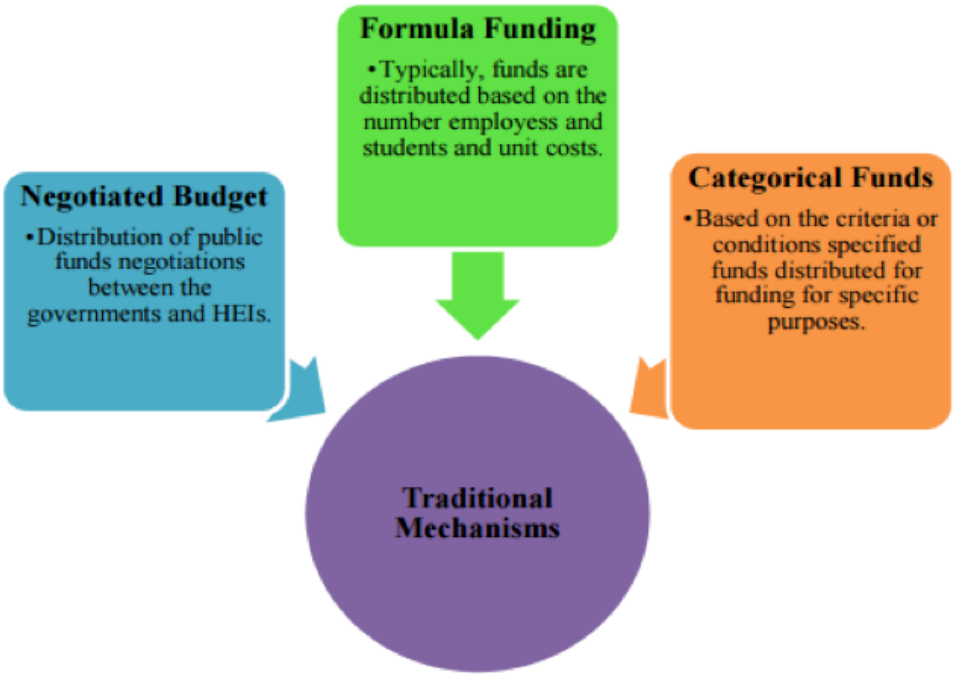
Some authors disagree with the fact that performance indicators must correlate with specific measurements of processes or activities like a connection which is necessary to decide whether a process or activity is performed efficiently. Performance indicators (PIs) are so dependent variables and can be different based on the comprehensive purpose they are intended to provide.

5.4. PROS AND CONS OF NEGOTIATIONS FUNDING METHOD

In response to the development of society and economy, the pattern of distribution of public funds in the education sector particularly HE experiences a change in the context of increasing competition for public funds because of the pressure from the community to enhance the quality of education. Governments and HEIs, through the traditional financing methods of the negotiation process will determine the amount of public funds allocated to each institution based on the input criteria and historical trends. Direct negotiations between governments and HEIs, based on historical data such as in precedent allocation, are of two types: line-item budgeting and block grant.

The beginning of each funds negotiation process is when the HEIs submit proposal to the government based on the provisions of the activities of their institutions. Usually, negotiations development funds request continues negotiation process between governments officials entrusted with HEIs leaders' takes place in private or invisible to the public. There are three (3) traditional financing mechanisms in HEIs, which are negotiated budget, formula funding, and categorical funds.

IMAGE 30. TYPE OF TRADITIONAL FUNDING MECHANISM



The key in the process of negotiating allocation of funds is the political skills of negotiators, furthermore in official documents, extensive compromise and agreement between the parties involved are generally not written clearly. Therefore, when HEIs "voluntarily" accept and follow everything that is required by the government or policy makers under the threat of funds reduction consequently, it is difficult to interpret whether there are or not political elements that do not fit with the internal governance and development of HEIs.

The advantages of negotiations funding mechanism, the method is relatively simple, lack of ambiguity and can easily control expenditure based on a comparison to previous years in spite of widely used of the funding in various activities and expenditure of the sectors (for instance by the company, HE and others).
However it still has limitations and creates problems to HEIs one of which is line-item budget that does not provide information on the financial flow used and does not provide information efficiency and effectiveness of program. On the other hand, the funding system had increased the capabilities of HEIs' to allocate the funds according to the foremost needs of the university's activities and programs. Based on Word Bank, line-item budget only takes in account the short-term and therefore will lead to long-term failure.
Negotiation mechanism has not been an effective mechanism for allocating funds for HEIs for the reason that there is no system in place that ensures the academic courses of HEIs offer to the public had meet the needs of the local labour market and skills required to secure the jobs nowadays. Therefore, the restructuring fund distribution method through emphasizing performance management.

IMAGE 31. COMPARISON BETWEEN TRADITIONAL AND PBF MECHANISM

Traditional	PBF
Allocation of public funds is negotiated between the government and HEIs.	The government made a deal with regulatory HEIs to establish joint based on performance objectives.
Categories of institutions specified as qualified for funding for particular purpose includes facilities, equipment, activities and programs.	HEIs are competing with each other on the basis of peer-reviewed project proposals against a set of objectives by government.
Funding formula based on the number of employees or the number of students enrolled.	Funding formula based on the output performance indicators (e.g. : Number of student graduates per years, ranking between HEIs)

5.5. PERFORMANCE BASED FUNDING (PBF) MECHANISMS

PBF mechanism or some other prominent scholars namely this types of mechanism as, performance-based budgeting (PBB) and performance-based school funding (PBSF) grew in attractiveness in the US at some point in the late 1990s as US government looked to financial fund for the limited resources they had to finish off. Many countries used PBF as a technique to reward HEIs or in abroad organizations for their capability to produce the desired educational outcome and result as well as increasing efficiency in various areas of student performance.

PBF authorized the allocation of a public funding amongst HEIs that demonstrated particular standards indicators performance. Changes brought about by the educational reforms towards increased accountability provide the impetus to numerous countries implementation of PBF mechanism. Prior research and studies illustrate that when an organization or institutions does not achieve an optimum performance with a PBF mechanism, it is frequently due to the actuality that the mechanism did not compatible with the organization or the organization is not implemented the PBF all over the whole organization. The size of the HE sector matters as well for the development and implementation of PBF systems.

PBF involves public funds and goods to provide an output-oriented system that is seen by policy makers as a way to increase efficiency and improve public accountability, apart from the reduction of dependence on a system based on input. It is important that countries which have limited funding resources have to ensure that, the money have been invested in the appointed of development public HE sector are used efficiently and effectively to enhance countries productivity, improve the competiveness of human resources and create a knowledge society.

The relationship between PBF and public fund is tied directly and tightly to the performance of HEIs on one or more performance indicators that have been set. In spite of that, PBF increases the differentiation in HE sectors. Provisions and allocations based on PBF mechanism are different compared to the mechanisms or approaches adopted previously because most of other mechanisms tend to use performance indicators that reflect public objectives rather than HEIs needs. They include incentives of HEIs improvement.

PBF aims to support initiatives that could promote the excellence in teaching and research. Under PBF mechanism system, qualitative and quantitative performance indicators used to measure the quality of research or teaching HEIs with the intention to enhance and measure performance and, generally, have access to high quality information that could enhance the student's ability to make decisions about the appropriate courses of study.

The allocation of funds between HEIs department (faculties, departments, research teams) based on performance provides increasing of productivity and eventually their overall output performances. In the meantime, the HEIs will work according to the Key Performance Indicators target and the budget allocated based on project that justified it outcome (which it will contribute to the positive performance of HEIs).

Components of PBF

In the practice of PBF mechanisms or allocation formulae based on quantitative indicators, there are different components of PBF as described below:

- Education and PhD awards based formulae (student and graduation numbers);
- Journal based impact assessment (bibliometric formulae);
- Citation based impact assessment;

- Peer review based assessment of research outputs;
- Performance contracts.

  In such a case the service provider is responsible for results service (which aimed to improve the performance if HEI to its agreed benchmark and goals between state and education institution). In the agreement of performance, contracts regardless of private or non-profits institutions clearly define and specify what type and level of performance are supposed to be achieved. In the PBF mechanism, the funding was not based on history trends activities but rather on the guarantee of prospect and future performance, and there were no penalties if performance objectives were not accomplished however, all depends on the agreements concluded collectively. Incentives should be provided to enable the institution achieve optimum performance while the penalty is charged for the institutions that fail to meet the objectives, all of this should be clearly stated in the contract for performance.

- Performance Set Aside

  The meaning of performance set aside depends on the part of funding that has been separated or reserved for special purpose or extra of performance that leads to the productivity of the educational institutions. The set aside funding is specified usually between the government and HEIs negotiation method. The countries that used performance set aside in their fund allocation are South Africa and US. This may be a "bonus" fund or a separate portion of a fixed fund allocation. HEIs compete in order to obtain funds from this set aside account.

- Competitive funding

  Competitive funding is a method, which refers to performance historical trends and the HEI that shows a good performance in the past will be chosen to obtain the funds. In particular, increased competition develops stress towards increased size, economies of scale, professional management, institutions sophistication, and the ability to access funds to perform strategic choice and competitive action for the educational learning.

- Payment by Result (PbR)

  Payment by results is a category of public fund method where funds are dependent on the result performance. "Open public services: white paper by

GB Cabinet Office: (2011) stated that, PbR is being dynamically suggested by numerous governments for more effective implementation a way to achieve increased value for money by aligning incentives to essential result". PbR also can be review as a payment in which performer fund depend on how well achieved targeted performance.

5.6. THE ADVANTAGES AND DISADVANTAGES OF PBF

PBF became known as a system of funding to modify, complement or replace other funding mechanisms to encourage and respond to policy concerns more effectively. PBF aims to support initiatives that serve to encourage the quality of teaching, learning and research. For instance, the rewards for research activities of excellence at the national and international levels create incentives for New Zealand HE organization to concentrate their research in the area of excellence given that the culture of high quality research supports and enhances teaching and learning environment, particularly in postgraduate level. The table below indicates the summary of advantages and disadvantages of PBF system.

IMAGE 32. THE ADVANTAGES AND DISADVANTAGES OF PBF SYSTEM

Advantages	Disadvantages
• Performance orientation and establishing performance incentives.	• Limited resources and fund cause restricted opportunities for HEIs to grow and develop.
• Improves planning and provides guidance for HEIs to steer the institutions' value chain process.	• Increases the administrative workload and bureaucracy.
• Resources and fund used flexibly.	• Problems of measurability and comparison.
• Improvements and changes in the distribution of resources allocation based on historical information or data.	• Reduced flexibility for allocation of funds makes it difficult for development because of the scare of budgetary basic.
• Pressure towards change and identification of potential incentives for rationalization and economy	• Lack of coordination and cooperation between HEIs due to the competition.
• Increase transparency and understanding of Fund allocation system.	• Potentially neglecting research but emphasized on teaching and learning environment in the HEIs.
• Increase competition between HEIs.	• Mistreatment of small HEIs.
• Encourage cooperation between HEIS and industry, business and other institutions.	• Measures performance based on the indicators/ratio :- ▪ Incomplete picture of performance. ▪ Loss of direction.
• Increased autonomy.	• Loss of autonomy through increased dependence from internal principals or sponsors

Co-funded by the Erasmus+ Programme of the European Union

5.7. CONCLUSIONS. PERFORMANCE INDICATORS AND PROS/CONS PBF

The implementation of Research Performance Based Funding (RPBF) systems aims to improve research cultures and facilitate institutional changes that can help increase research performance. Many EU countries have introduced, are introducing or are considering to introduce such systems. There are alternatives to RPBF. This includes performance contracts. Binary systems such as Switzerland and the Netherlands can offer another alternative approach to the concentration of researchers in strong performing organisations. The logic that placing incentives on certain types of behaviour (such as publishing in high impact international journals) and the concentration of resources in well-performing units to attain a certain critical mass can lead to sustained improvements in output and impact at the systemic level, seems hard to contradict.

On the indicators considered in this report none of the systems which have implemented a RPBF have experienced strong negative effects. Though many other factors are thought to have influenced the observed improvements in performance, the effects are likely to have been positive. These indicators, however, do not necessarily tell the whole story and in a mutual learning exercise it is crucial to get a clear understanding of potential downsides and perverse incentives generated by specific designs and implementations of PBF Systems: including and beyond the issue of research excellence as measured, necessarily imperfectly, by these metrics.

The role of PBF is likely to differ in relation to the institutional design of the system. Systems with large Public Research Centres such as the Academies of Sciences in Central and Eastern European countries need to decide whether to include these units. The rationale for and likely impact of performance based university funding is likely to differ between unitary systems such as the UK and Spain and binary systems in which the concentration of research funding is implied in the separation between research universities and universities of applied science.

Other issues in which Member States differ include the share of organisational level funding which is allocated through RPBF, the speed in which the system is introduced, the degree of stakeholder involvement, the impact different systems have

on the autonomy of research performers, the criteria on which they evaluate, their likely impact on research excellence indicators as well as the other missions and behaviours which the government wants to promote in these organisations.

Many countries inside and outside Europe have learned from the evolution (design and improvements) of the RAE and REF in the UK which was the first country to introduce a funding allocation system based on peer review assessments in Europe. As suggested by the ongoing redesigns of the systems in for example the Czech Republic and Sweden, lessons can be learned from past experiences. Especially for those Central and Eastern European countries which at present have not implemented any such system and which are considering to do so, an overview of the pro's and con's of different designs is expected to be beneficial. Also, systems in which the RPBF are a recent or even a long established feature can benefit from further adapting or fine tuning their approaches.

Decisions to implement a RPBF should include assessments of the (expected) costs of different systems. In these assessments the considerable costs which some systems bring to the research performing organisations should not be overlooked. These costs should be weighted, in so far as possible, with the potential benefits the introduction of such systems can bring. Of crucial importance is a consideration of the potential unintended consequences which different incentives, indicators and methodologies can generate. A strategy to monitor the effects and impacts of the system should be in place and the administrating agency should be open / flexible to fine-tune the approach. It is important to involve stakeholders in deciding on the indicators considered. It should be realised, however, that in the absence of additional funding, there is likely to be a certain degree of institutional resistance from parts of the academic community and research organisations. This resistance in itself should not be an argument to forego on the decision to implement such systems. However it is clear, that it will be easier to implement PBF systems in a period in which the funding of public research performers is expanding.

Considering the relative differences in costs of time, resources and timeliness, especially the allocation mechanisms based on quantitative assessments appear of immediate interest to countries which have not yet established RPBF. However, as observed in e.g. Sweden, UK and Czech Republic, governments are re-evaluating the extent to which such approaches are most beneficial to their system. These

reconsiderations are possibly in part due to institutional resistance from research performing actors, but possibly also due to a realisation of their potential unintended negative consequences or the perception that alternative incentives can help to improve the performance of their system more.

An important factor influencing the impact of a Performance Based Research System is the amount of funding that is allocated on the basis of assessment of the research output. The levels of performance based funding and the rate at which it is introduced or at which allocations can change is important as it affects the ability of research organisations to engage in longer term planning. In several countries, such as Poland, Czech Republic and Denmark the introduction of the system has been gradual in order to ensure the system remains in balance. Also, in long established systems such as the UK, historical considerations play a role in funding allocation decisions in order to avoid large swings (especially falls) in the amount of funding granted to specific universities. An example which deserves further reflection is the Danish model in which each year a small share (2 percent) is re-allocated on performance based criteria while the rest is mainly allocated on the basis of the previous' years funding. Over time this resulted in a gradual increase in the "accumulated" performance based component of organisational level funding.

The debate related to the bibliometric approaches is too big to fully capture in this report, and not exactly relevant with the BALANCE project outcomes. What is clear from past experience is that if bibliometric indicators are used to underpin funding allocation mechanisms, it is important to take into account field differences, paying special attention in this light to the Social Sciences. Simple publication counts alone are not considered to provide the most appropriate incentives for an upgrade of research systems. Some of the debate and criticism towards journal based impact measures were provided, but research funders in a number of countries still consider these or alternative journal based measures to generate desirable incentives. Publication level citation based measures are generally considered superior to the journal based approaches though they are more difficult to implement. When introducing such measures they can be accompanied by other output and impact measures to provide additional incentives and potentially mitigate some of the adverse side effects by a sole use of bibliometric indicators. In many countries which rely on quantitative assessments experts still play a role to interpret the data in the

light of field specificities. Monitoring is also necessary to guard against excessive "gaming" by research organizations in the light of the indicators considered.

The involvement of peers/experts remains the preferred approach to research assessment for many analysts who sometimes doubt the ability of bibliometrics to provide a good and complete assessment of the output of research systems. As was shown, metrics informed peer review exists in different forms in the member states that adopted them. While peer review has limitations of its own, these may be partially addressed by the input from these publication analyses. Whether the benefits from full- fledged exercises outweigh their costs is an issue that needs to be decided on a country by country basis. Some argue that the relative costs may be too high for smaller research systems necessary to guard against excessive "gaming" by research organisations in the light of the indicators considered.

It is important to start reflecting on the potential of alternative metrics and indicators and to pay close attention to the various mechanisms which are currently being developed to gauge societal impact (see the examples of UK, France and The Netherlands). Striking the right balance between scientific excellence and societal impact is among the main challenges in the reform of public sector R&D systems in Central and Eastern European, and indeed all, EU Member States. Whether the assessment exercises that underpin RPBF allocation decisions are the most appropriate avenue for evaluating and incentivizing the societal relevance of public research remains an open question.

Evidence from several European countries has shown that performance agreements:

- are not solely meant to strengthen performance but also have aims such as encouraging HEIs to strategically position themselves, given their particular mission and strengths;
- can handle situations where HEIs have multiple objectives (education, research, innovation, entrepreneurship) and - within some nationally-set boundaries - can set their own targets;
- improve the strategic dialogue between the government and the HEIs help inform policy-makers and the public at large about the HEIs' performance, thus improving accountability and transparency can be used to promote horizontal collaboration between different actors.

- The evidence also points to as follows for an effective design of this type of agreements:
- Performance agreements are taken more seriously by all parties and have greater impact if financial consequences are attached. They should include a mechanism to reward "overachievement" and not just be focused on budget cuts as a result of failure to meet indicator-based targets.
- The nature of financial incentives must be carefully chosen. The budget linked to the agreements must be sufficiently large to have an impact, yet not so sizeable to the extent that the incentive becomes a goal in itself or could lead to perverse effects.
- Agreements must primarily pertain to goals and results. The indicators related to the targets should meet the requirements of validity, relevance, and reliability. Organisation-specific performance indicators can sometimes limit the scope for horizontal collaboration, with HEIs focusing solely on meeting the performance targets assigned to them.

These conclusions are extracted from: Jongbloed B., Kaiser F., Van Vught F., Westerheijden F., *Performance Agreements in HE: A New Approach*, in Curaj-Deca-Pricopie (2018).

IMAGE 33. TRENDS IN UNIVERSITY FUNDING IN EUROPE

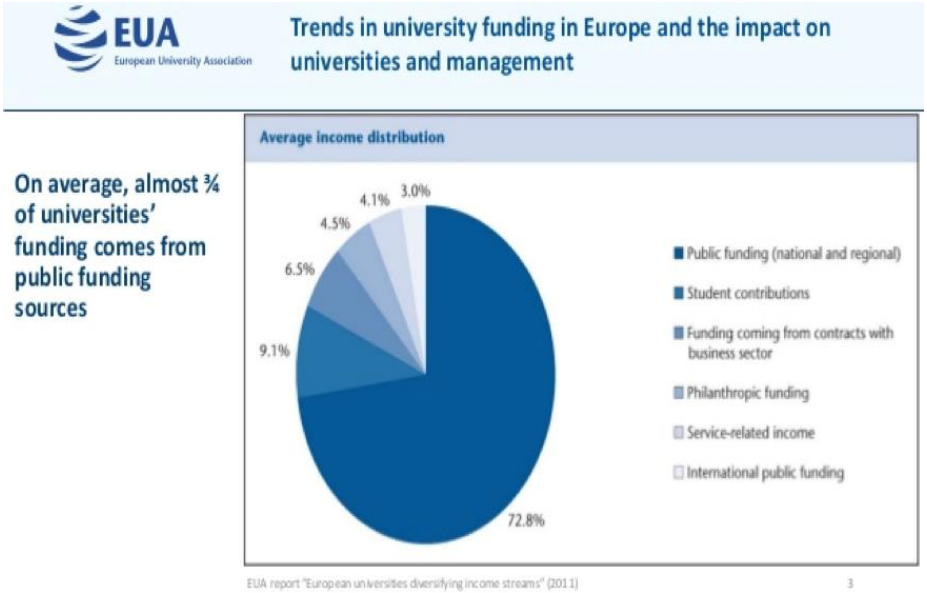


IMAGE 34. VARYING PUBLIC FUNDING

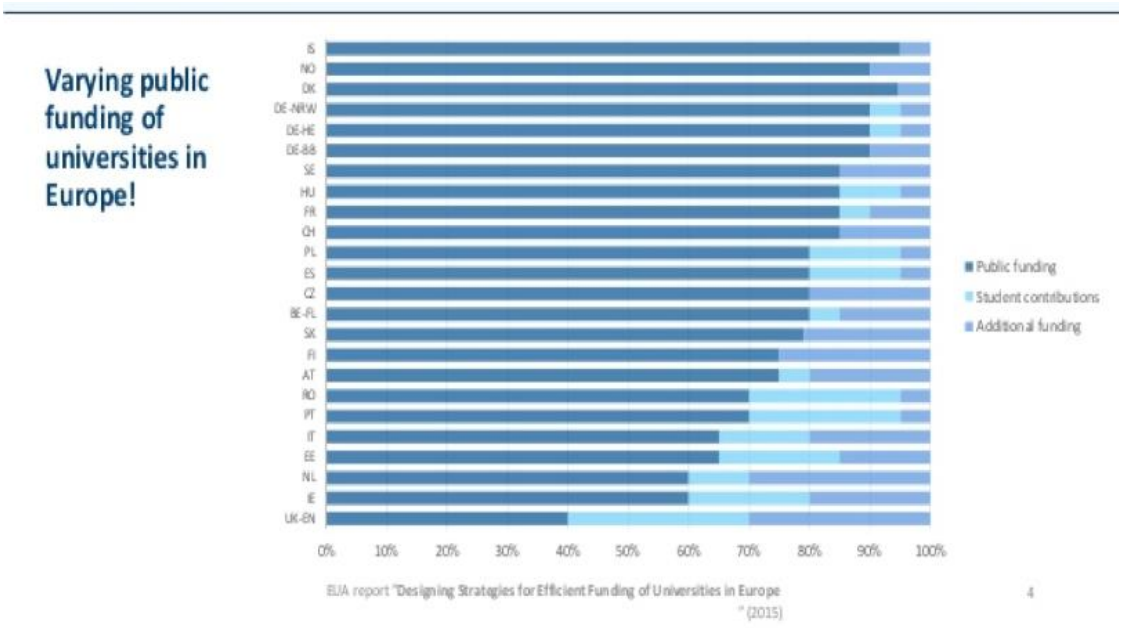


IMAGE 35. STUDENT NUMBERS AND PUBLIC FUNDING

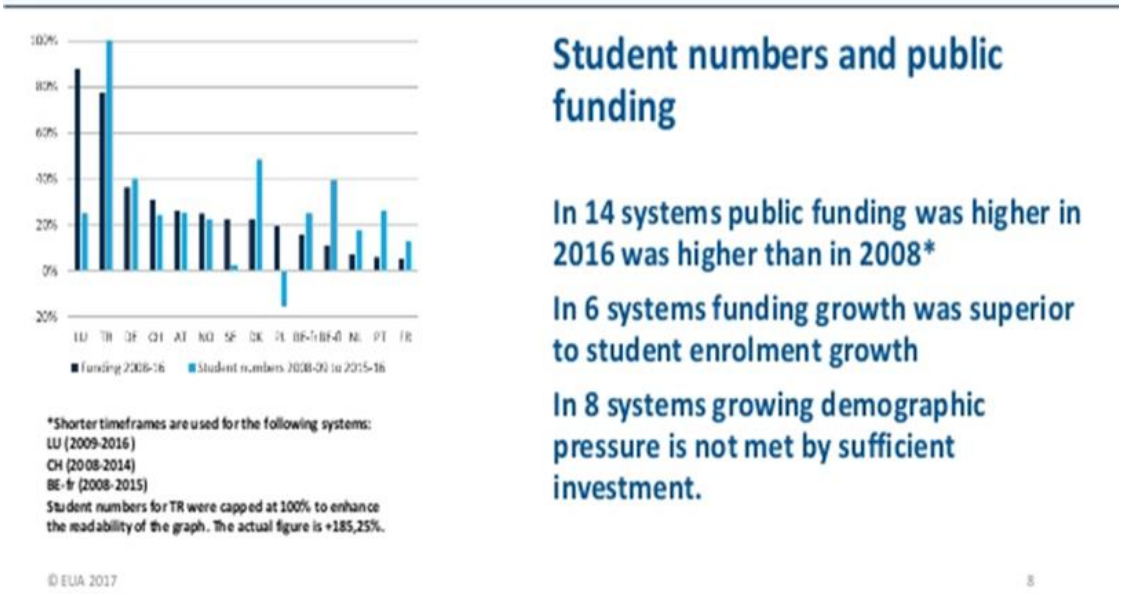


IMAGE 36. STUDENT NUMBERS AND PUBLIC FUNDING II

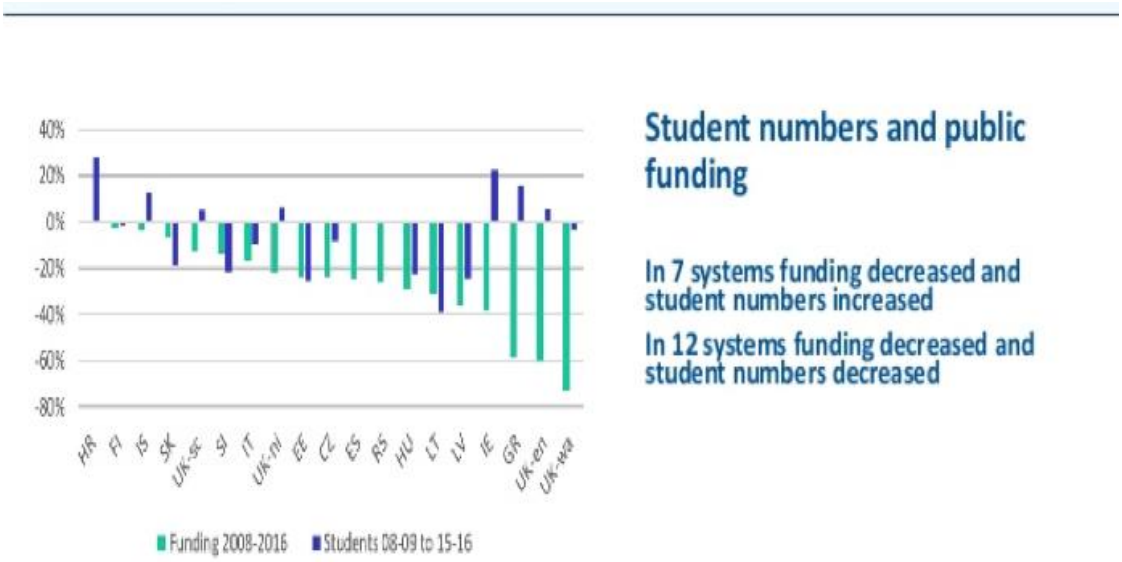


IMAGE 37. PERFORMANCE

IMAGE 38. OUTPUT INDICATORS IN FUNDING FORMULA

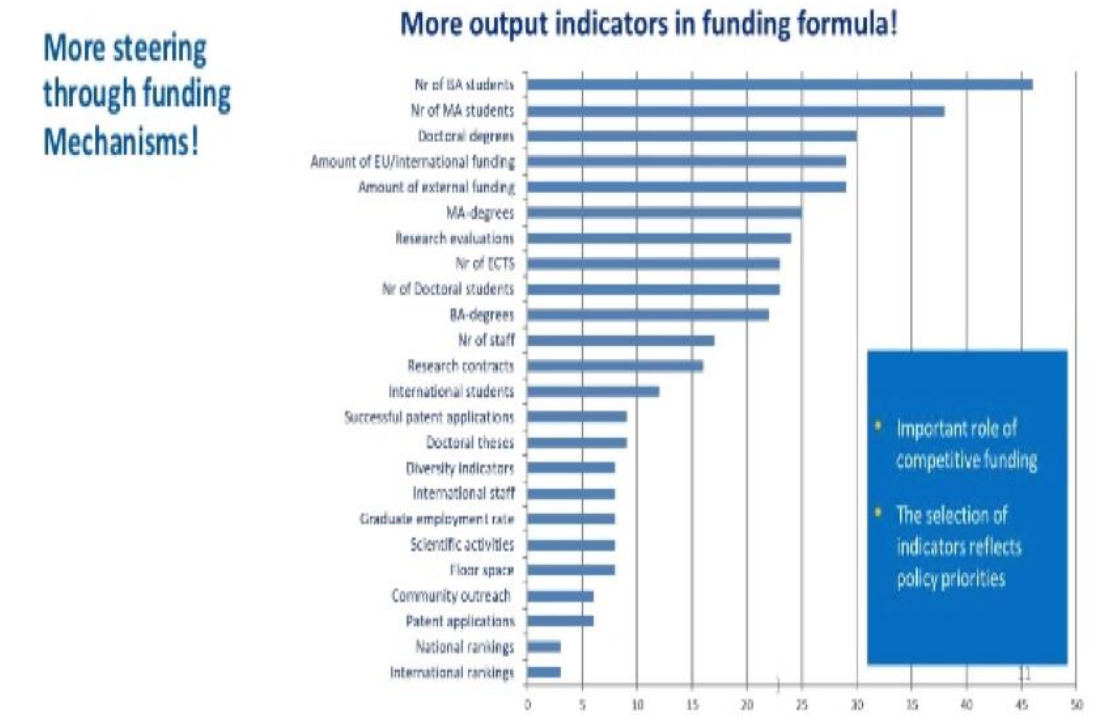
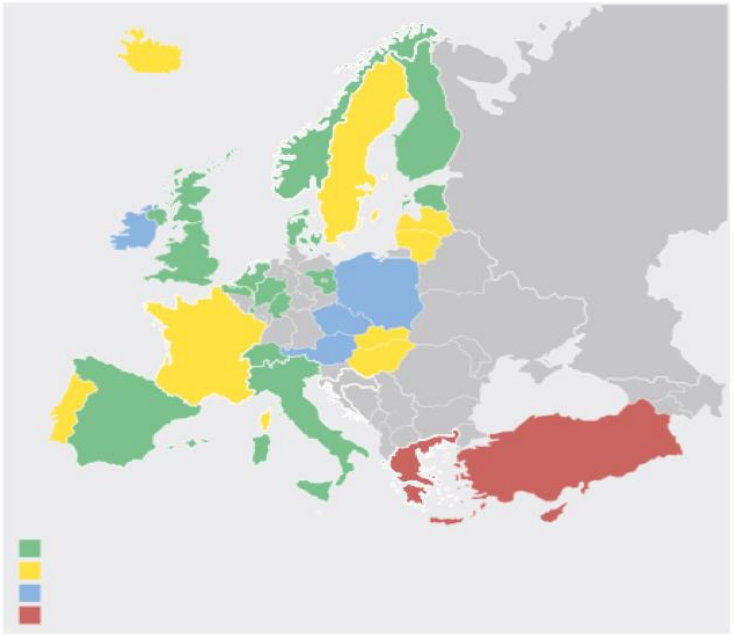


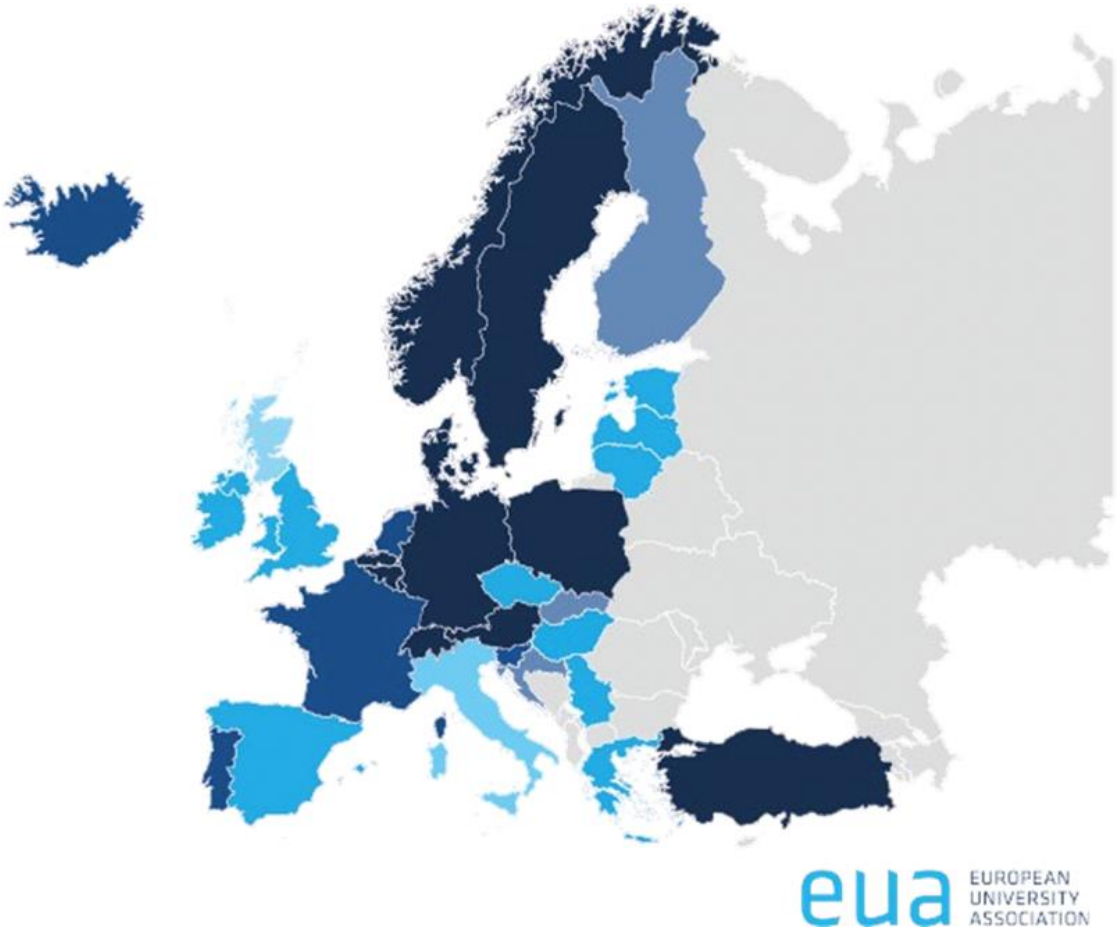
IMAGE 39. TYPES OF RECURRENT PUBLIC FUNDING



SOURCE: (ESTERMANN, NOKKALA & STEINEL 2011)

Green: Block grant with no restrictions on internal allocation
Yellow: Block grant with broad categories and no or limited possibilities to move funds between those
Blue: Block grant with other restrictions
Red: Line-item budget

IMAGE 40. LEVEL OF PUBLIC FUNDING 2017 COMPARED TO 2008



Black: +20% and above
Blue: from +5% 70 +20%
Violet: from -5% to +5%
Pale blue: from -20% to -5%
Light blue: from -20% and below

The map shows the level of public funding to universities in 2017 compared to 2008. Different colour codes indicate whether the country invested or cut funding to universities in the period analysed.

Compared to last year's long-term trend, the overall situation has only slightly improved in Europe. Flanders, Poland, Iceland, Slovakia and Hungary moved upwards due to their recent investment efforts. In the UK, Northern Ireland moved

downwards. Croatia and Iceland now caught up with their 2008 funding levels. The map is based on data adjusted for inflation. This allows to better assess the performance of countries across the years.

The Report 2018 of the EUA Public Funding Observatory has identified several groups of systems that follow similar patterns in long-term funding trends: 1. "sustained growth", 2. "sustained decline", and 3. "improving patterns".

1. Systems such Austria, Germany or Sweden are subject to sustainable investment patterns, characterized by both significant and comparatively sustained funding growth. France and the Netherlands feature more limited investment, although on a relatively stable trajectory.

2. Other systems continue to apply regular cuts to their HE budgets. The Czech Republic and Spain nevertheless recorded slightly positive trends (+ 2,11%), while Italy has been stabilizing at low funding levels in the last four years.

3. Several systems embarked on a recovery pattern, whereby signs of improvement can be detected after a period of either cuts or limited investment. In most cases, the improvements took place after 2013. In our study, Poland experienced three consecutive years of cuts before significant renewed investment.

If we compare funding to student population trends, contrasted situations emerge across Europe: A major distinction can be made between:

- 6 systems where funding growth can be qualified as "sustainable", that is superior to student enrolment growth;
- 10 systems where the demographic pressure is not met by sufficient investment.

Pressure nevertheless vary significantly, with two extreme cases being Turkey (highest demographic pressure) and Poland (declining student body).

The severity of cuts in 17 systems varies upon student enrolment numbers:

- 5 systems, where funding to universities decreased in 2017 compared to 2008, whilst student numbers increased, are considered to be "in danger";
- 12 systems, where both funding to universities and student numbers decreased in 2017 compared to 2008, are considered to be "declining systems

under pressure", depending on the relative pace of funding cuts and demographic decline.

Public funding and GDP growth

In addition to evolving student numbers, it is also important to take account of the country's investment capacity while assessing the progression of public funding to universities over time. There are some general patterns.

The first group refers to the most committed systems, which increased their investment in public universities at a larger scale than their current economic growth. For example, countries as Germany, Norway, Austria and Denmark.
In the second group, there seems to be some unused margin for manoeuvre, as the investment level remains lower than GDP growth over the period (as in the Irish case).
Systems in the third group proved their commitment to investing in HE despite the overall economic decline during the period.
The fourth group reduced funding for universities despite overall positive GDP growth.
The fifth group is characterized by funding cuts against the economic decline.
In general terms, we have a divided Europe, as shown in the following table (EUA Observatory).

IMAGE 41. INVESTMENT LEVEL

Short-term funding trends

Considering the long-term trajectory of the individual systems together with the latest developments over 2017 and economic growth forecasts, several patterns emerge:

Continuing commitment to investment can be observed in Luxembourg, Norway and Switzerland. In these systems, the latest funding increases either match or surpass the average annual growth of public funding for universities. Austria will renew with this positive trajectory in 2018.

Recovery under consolidation may described the trend in Iceland and Portugal, which have both reached their pre-2008 funding levels, and where proper consolidation will depend on the political commitment to HE.

Relative stagnation characterises the situation in Belgium, Denmark, Germany, Poland and Sweden, countries where comparatively large increases in investment since 2008 are no longer sustained. In the Netherlands and France, recent stagnation is combined with more modest long-term trends and stronger financial pressure on universities.

Signs of recovery of public investment in universities can be detected in Central Europe - as last year, Croatia, Hungary and Slovakia show some positive developments, and are joined this year by Slovenia. However, aside from Croatia, none of the countries in this group are reaching their pre-crisis funding levels.

Other countries seem to be changing course – renewing with investment, as in the Czech Republic, Ireland or Spain, while Turkey shows signs of shifting towards a negative trend, in a particular context of high inflation and continued expansion of the student body.

Finally, **failure to re-invest in HE** is leading some countries to **fall behind**, although to different extents. Finland and Italy seem unable to renew with a positive pattern and Latvia does not mobilise enough resources to close the funding gap; elsewhere in the Baltics, Greece and Serbia, most indicators are still in the red.

Finally, we remember some data with reference to our case studies countries.

Stagnating public funding

Germany's pace of investment appears sustainable, despite a lower funding effort in 2017 (+0.64% in real terms). The investment level remains above GDP growth, but has to be considered in the context of a student population that has been expanding until 2015. This results in broadly stagnating basic funding to universities. The sustained economic growth forecast can support greater investment in the sector.

After a few years of remarkable growth (between 5 and 9% annually), public investment to universities in Poland slowed down since 2016 (+0.73% in 2017) and is expected to remain stable in 2018 (just under 2% in nominal terms). Investments focus on research activities. Poland has been consistently increasing its GDP share of public funding for universities since 2008. In view of the declining enrolment, the funding formula was modified in 2017 to focus on student-to-staff ratio, leading some universities to put a curb on admissions. The new Law on HE and Science, which came into force in October 2018 with gradual implementation planned until 2020, should lead to "streamlined financing principles" and enhance the universities' capacity for financial management.

Sweden is in a comparatively better position than many when considering the full period. However, since 2016 universities receive slightly less funding every year in real terms (-0.48% in 2017 compared to the previous year), a phenomenon likely to happen again in 2018 (projected nominal increase +1.9%, with an inflation rate expected to be superior to this figure). A new funding mechanism is currently being discussed, with a proposal expected in early 2019, and possible implementation as of 2021.

Standing still... losing ground?

The quasi-sustained investment effort in universities in the Netherlands (excepted 2012) remains limited, and never exceeded 2.5% annually. In 2017, investment grew by a little over 1.5%, with better projections for 2018 (+5.5% in nominal terms). The increase is meant to compensate for a combination of inflation, growing student numbers and previous budget cuts. However, the system is confronted with student numbers increasing at a faster pace and still projected to grow in the coming years (+4.55% for 2017/18 compared to 2016/17). Since 2018 a redistribution of € 70 million from student support to grants for teaching for universities is implemented. In 2023 this will increase to € 190 million to improve the quality of education by means of performance agreements. The new government announced its intention to strengthen the link of funding of academic research to quality and impact and to pay special attention to technical sciences and cost intensive research.

Real investment in universities in France was close to zero in 2017, after a 1% increase the previous year. Expectations for 2018 included marginally enhanced

funding for teaching activities. Student enrolment is slowly growing (annual increase inferior to 2%).

Changing course?

Spain is showing signs that it seeks to renew with investment in HE. After a first and limited increase in 2015, it registered a funding increase of +2.11% in 2017 and has announced a nominal increase of +4.52% for 2018. Revised student data shows a slow decline in the enrolment (on average -1.75% annual decrease since 2016/17). Despite the latest investments, Spain's university funding is still in the red as compared to 2008. The Spanish economy is in expansion and robust economic growth forecast can support renewed investment efforts to close the gap.

6. FEES AND GRANTS: STUDENTS' FINANCIAL CONTRIBUTION AND SUPPORT SYSTEMS

Students' financial contributions are considered in this Report in as far as it relates to universities' financial autonomy. In some systems, this income represents a significant percentage of the university budget, and the ability to charge and set fees thus plays a central role for institutional strategies. Both so-called 'tuition' and 'registration' fees are considered, the latter when they are of an amount at least equal to the lowest 'tuition' fee charged among the systems analysed.

The matter of tuition/registration fees is particularly complex and challenging to compare across systems.

The Report focuses solely on the capacity to set fees. As a simplification, it is possible to distinguish three main models that continue to exist in Europe: fees may be freely determined by the university itself; a public authority may decide on fees; or a public authority and the universities may cooperate in setting fees. The modalities of collaborative fee-setting range from genuine negotiations between universities and the external authority, to the external authority setting a ceiling under which universities may levy fees. In some systems, public authorities allocate a number of state-funded study places, while the institutions may take in additional students and set fees for them within a given framework.

Fees, grants and loans (28 EU Member States – Academic year 2018/19)

One of the challenges for national authorities is to find sustainable solutions for financing HE, while guaranteeing that students of different backgrounds have the right conditions to study and succeed in HE. The question of how this is ensured at national level is a key aspect of the policy area commonly known as the 'social dimension of HE'. Fee and support systems are important tools of national policies in this field as they play a role in supporting (or discouraging) access to HE and can also have an impact on progression and completion rates. While fees impose a financial burden – which may be more or less significant depending on the nature and level of the fees and the socio-economic conditions of students and their families –, support measures are able to alleviate financial obstacles to study.

The report shows how fee and support systems (including grants and loans) interact in HE in Europe. It describes the range of fees charged to students, specifying the categories of students that are required to pay and those who may be exempt. Similarly, it explains the types and amounts of public support available in the form of grants and loans, as well as tax benefits and family allowances, where applicable.

Fees

- Percentage of first-cycle full-time home students paying annual fees above EUR 100
- The amounts that students most commonly pay differ greatly across countries
- Fees in HE are differentiated according to a range of criteria
- Performance in secondary education sometimes influences fees paid in HE
- Insufficient ECTS credits or extended duration of studies may imply higher fees
- Part-time students are often more likely to pay fees than full-timers
- Fees for international students commonly differ from those for nationals (Tuition fees for foreign students can be substantially higher than for national students)

Financial support (grants and loans)

- All European countries offer financial support to HE students
- Grants are allocated to students based on various criteria
- There are substantial differences between countries in the proportion of grant beneficiaries
- Amounts of student grants vary greatly between countries
- Student loans are in place in most countries, but they are widely used only in some
- Access to direct public financial support (grants and loans) is often limited by age
- Around half of all European countries offer financial support for students' parents
- The relationship between fees and support

The benchmarking report examined fee and support policies in 28 European HE systems. They have outlined different approaches to requiring contributions from

private households (students and/or their families) and to supporting students financially during their studies.

Where fees are concerned, the approaches include no-fee policies, universal fee policies, as well as fees only for some categories of students. These policy options sometimes interact within a single HE system, with different fee regimes related to different study cycles, study modes (full- time/part-time), and home and international students. As far as student support is concerned, all 28 studied HE systems provide at least one type of direct financial support – grants and/or loans –, and around half of them also provide indirect support in the form of family allowances and/or tax benefits.

The combination of fees with financial support tools is crucial to understand the country's policy reality, and these combinations may be numerous. The report examines this matter by looking at how governments distribute HE fees among students (share of fee-payers), and how widespread financial support actually is (share of support beneficiaries). The financial support is evaluated through grants (need-based or universal), which are the most common form of student support in Europe, and arguably the most significant in influencing students' perception of their financial security during studies. By focusing on full-time first-cycle home students, the report brings together data collected, and examines them in a combined perspective.

Taking into consideration the share of fee-payers and grant-holders, four types of policy approach can be identified:

A) This approach combines a low percentage of fee-payers and a high proportion of grant beneficiaries.

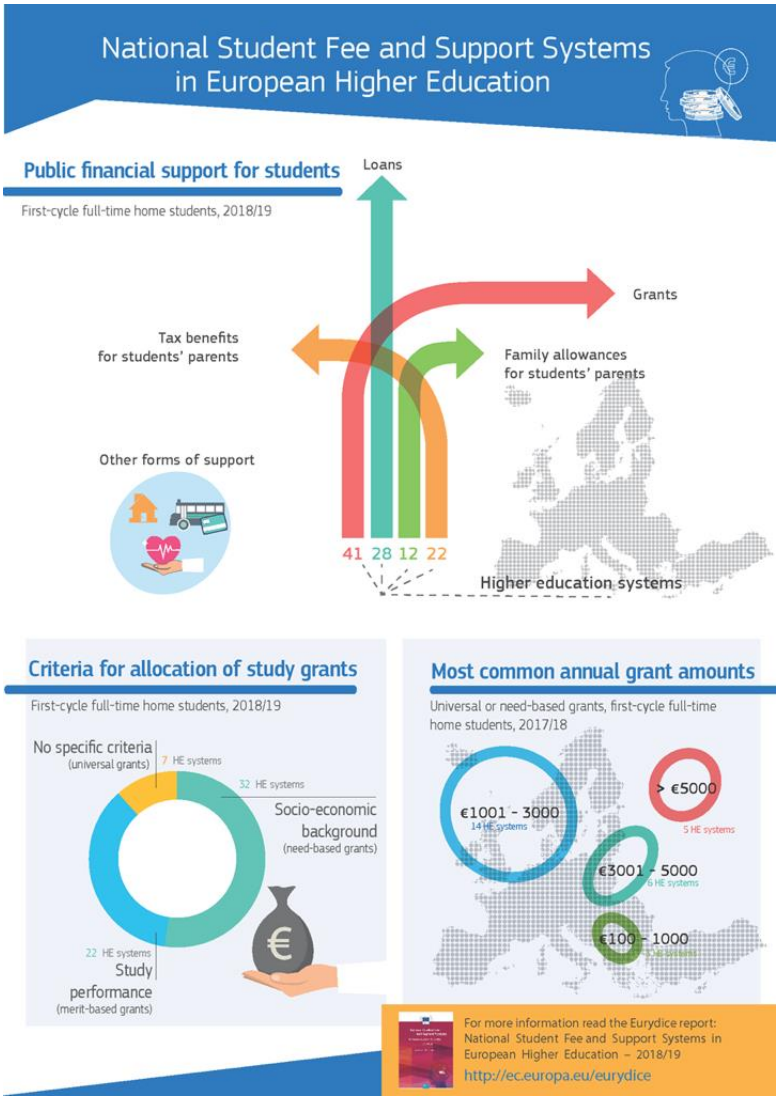
B) Similarly, to countries in A), these countries charge fees to no or only few students; in any case, less than 50% of students pay fees (or fees above EUR 100). Here, however, the low percentage of fee- payers combines with a low percentage of grant recipients.

In contrast to countries in A) and B), countries in C) and D) follow a policy that charges fees to the majority or to all students. C) and D), however, differ in their approaches to distributing grants among the student population.

C) These systems combine a high percentage of fee-payers and a low percentage of grant recipients.

D) In these systems, there is a high percentage of fee-payers and a high percentage of grant recipients.

IMAGE 42. NATIONAL STUDENT FEE



SOURCE: EURYDICE (HTTP:// EC.EUROPA.EU/EURYDICE

The interaction between student fees and support is complex, and it is challenging to compare national realities accurately and clearly at European level. This is because there are many dimensions to consider: Do all students pay fees? Or only some? If some, what are the main criteria that determine which students pay and which do not? And how much do students actually pay?

Similar questions need to be asked about student financial support systems. What are the main forms of student support, and what is the purpose of such support: to reward and incentivise good academic performance, or to mitigate financial need? Is financial support paid directly to students in the form of a grant, that does not have to be paid back, or as a loan, which does have to be repaid? Where there are grants, are they attributed to some or to all students? If it is to some, what are the main criteria, and how much support is provided? In addition to direct financial support, are families of students supported indirectly in the form of family allowances or tax relief?

We will examine these issues; first separately, comparing fees across European countries, and second, analysing financial support. Finally, we bring together selected elements of these two sections to examine the interaction of fees and support in national systems. In the case studies these questions will be analyzed more deeply.

Debates on how to finance HE have intensified recently in the light of the increasing enrolment of students, increases in the costs of instruction and worldwide trends towards knowledge-based economies and globalization. As a result the concept of cost-sharing has gained a lot of attention from researchers, politicians, economists, students and other stakeholders in HE. This concept refers to reaching a new balance between the reliance on government and taxpayers for HE funding and increasing direct contributions from parents and/or students, either in the form of tuition fees or of "user charges" to cover the costs.

At the same time, fees are a particularly hot topic when it comes to debates on cost-sharing. This is because of the conflict between those who believe HE is a public good, provided by governments free of charge, and others who believe in the imperative of cost-sharing and especially of charging students' tuition fees. Supporters of fees argue that such cost-sharing can lead to:

- greater efficiency, through institutions of HE competing for students as consumers and, moreover, investors in their own human capital;

- increases in equity, by shifting the costs of HE to those that benefit directly from it;
- greater incentives for students to study hard and graduate "on time";

Opponents to fees argue that implementing or raising fees to close the funding gap is extremely harmful because:

- it transforms students from full members of the HE community into consumers
- it puts a specific price tag on entry into HE, which deters some parts of society from considering HE participation at all.

Whatever the arguments, the reality is that in many countries around the world students are asked to contribute financially to HEIs. These contributions can take several forms – in addition to tuition fees, students might have to pay administrative fees (entrance fees, registration fees, examination fees) or make compulsory payments to student organizations.

Fees

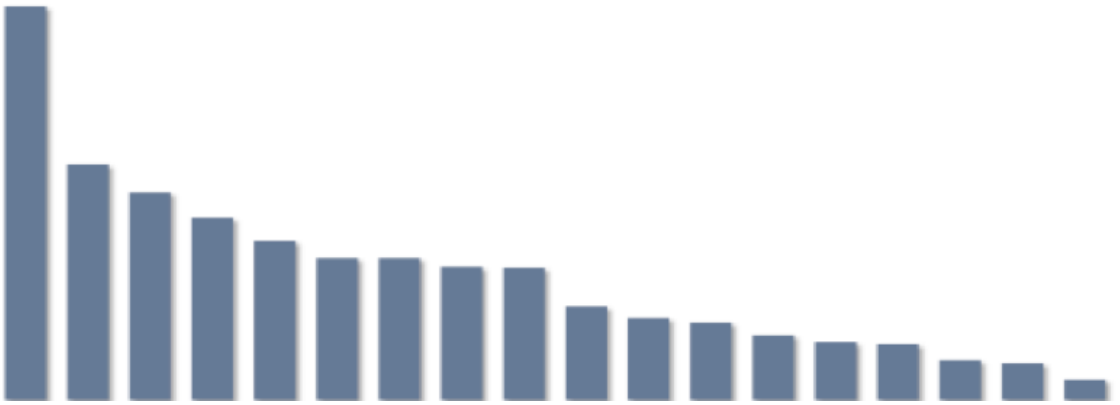
HE studies in EU entail substantial investment, and students may be required to bear (a part of) the costs through fees. We will consider all costs charged to students (for tuition, enrolment, administration, etc.) with the exception of contributions to student organisations, investigating fee policies in European HE systems. The analysis looks at the share of students who pay fees, the fee amounts and the categories of students who pay. The main focus is on first-cycle full-time home/domestic students, but comparisons are also made between study cycles, full-time and part-time studies, and home and international students.

A fee is understood as any sum of money paid by students, with which they formally and compulsorily contribute to the cost of their HE. This may include, but is not restricted to, a registration fee, tuition fees, graduation fees, administrative fees, etc. Payments to student unions are not taken into account.

Figure 1 shows the share of Bachelor students' total expenditure used to cover fees to HE institutions. It describes one of the key costs students cover in order to participate in HE. We share of total monthly expenses - right axis focus here only on

students who are not living with their parents as this is the dominant form of housing for students in most countries.

IMAGE 43. EXPENDITURE ON FEES AS SHARE OF TOTAL EXPENDITURE FOR AN AVERAGE BACHELOR STUDENT (NOT LIVING WITH PARENTS) BY COUNTRY, AS% OF TOTAL MONTHLY EXPENDITURE

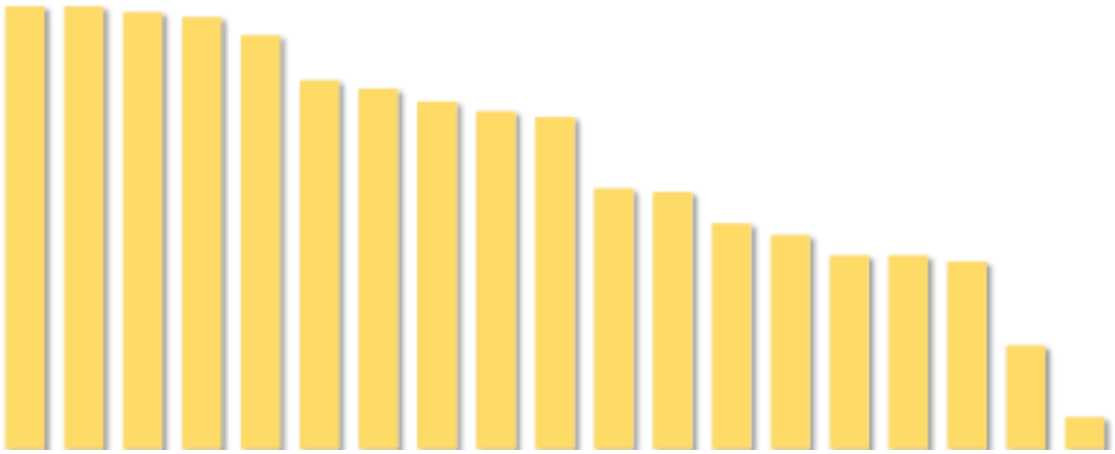


AT = Austria, CH = Switzerland, CZ = Czech Republic, DE= Germany, DK = Denmark, E/W = England/Wales, EE = Estonia, ES = Spain, FI = Finland, FR = France, HR = Croatia, IE = Ireland, IT = Italy, LT = Lithuania, LV = Latvia, MT = Malta, NL = Netherlands, NO = Norway, PL = Poland, PT = Portugal, RO = Romania, SE = Sweden, SI = Slovenia, SK = Slovakia, TR = Turkey.

SOURCE: EUROSTUDENT IV, SUBTOPIC E.2. NO DATA: DE, IT, RO, SI

Figure 2 shows that not all Bachelor students pay fees, although in most countries more than half of Bachelor students are required to pay fees.

IMAGE 44. EXPENDITURE ON FEES AS SHARE OF TOTAL EXPENDITURE FOR AN AVERAGE BACHELOR STUDENT (NOT LIVING WITH PARENTS) BY COUNTRY, AS% OF TOTAL MONTHLY EXPENDITURE II



E_WAT	PT	MT	CH	NL	IT	HR	SK	IE	FR	TR	LV	LT	PL	DE	EE	RO	CZ
100	100	23	99	98	94	83	81	79	76	75	59	58	51	48	44	44	42

SOURCE: EUROSTUDENT IV, SUBTOPIC F.9. NO DATA: ES, NO, SI.

The proportion of HE students paying fees varies across Europe

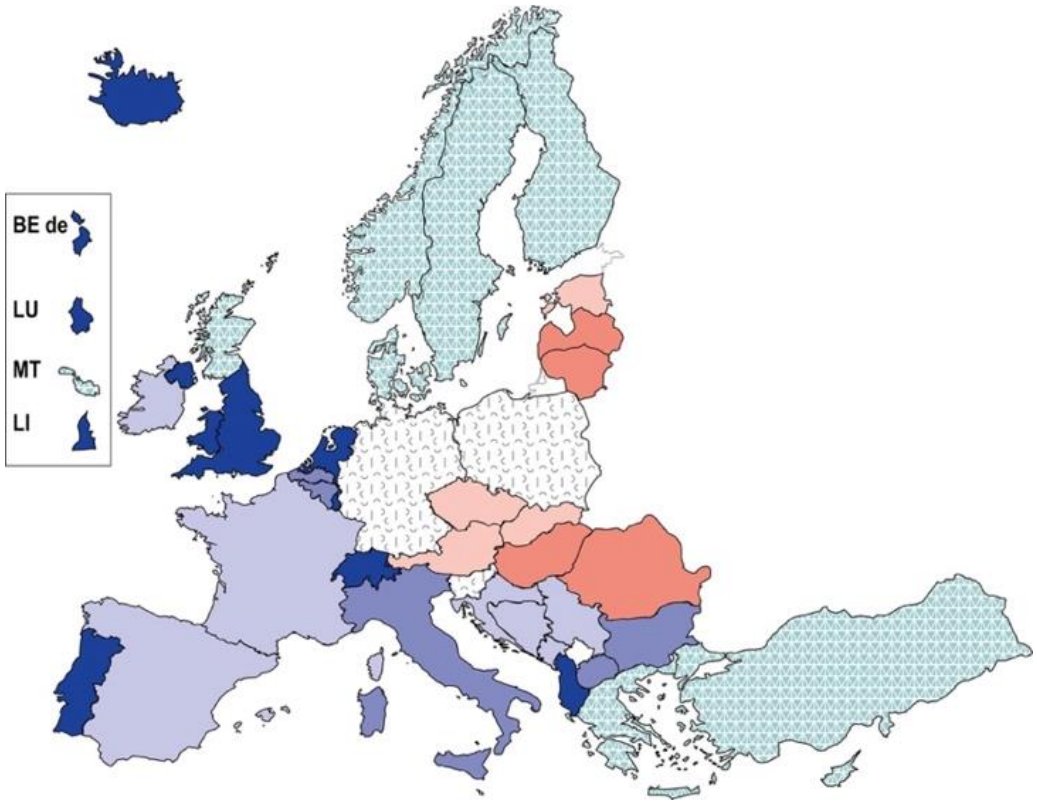
Fig. 3 examines the proportion of fee-payers among full-time 1st-cycle home students. Only students paying annual fees of more than € 100 are considered, since fees below this amount are unlikely to represent a substantial financial burden for students and families.

Among the EU HE systems, nine have in place a systematic no-fee policy for first-cycle full-time home students. This group includes five systems situated in northern Europe (Denmark, Finland, Sweden, Norway and the United Kingdom - Scotland), as well as Greece, Cyprus, Malta and Turkey. In contrast, in 11 HE systems situated in different parts of Europe, all first-cycle students pay fees. Around half of the studied systems are between these two extremities, i.e. some students pay fees, whereas

Co-funded by the Erasmus+ Programme of the European Union

others do not. The share of fee-payers in these systems commonly reflects different policies. For example, in some systems, fee exceptions are possible, but are available only for specific categories of students – such as students from low-income families, orphans or disabled students –, which generally translates into a high percentage of fee-payers (at least 50%) and a low share of those exempt from paying fees. In some other systems, only particular categories of students are required to pay – e.g. students failing to make sufficient academic progress –, which goes hand in hand with a relatively low percentage of fee-payers among students (up to 25%). The share of fee-payers situated between 25% and 49.9% is often associated with policies where, based on study merit, students follow their studies in one of two groups: those with higher study achievement are state-funded and do not pay fees (or pay only small administrative changes), while the others (co)finance their studies.

IMAGE 45. PERCENTAGE OF FIRST-CYCLE FULL-TIME HOME STUDENTS PAYING ANNUAL FEES ABOVE EUR 100, 2017/18



Blue: 100%; purple: 75-99%; light blue: 50-75%; red: 25-50%; pink: 0,1-25%; green: 0%; white: data non available

Country-specific notes. Belgium (BE fr, BE nl), Spain and Italy: Reference academic year: 2016/17. Czech Republic: Data refer to first- and second-cycle students together. Reference year: 2017 (estimated data).Germany: In all German Länder, there are no tuition fees. In 10 Länder, however, low administrative fees from EUR 50 to 75 are charged to all students. Moreover, students in six Länder are liable to pay fees of up to EUR 500 per semester when exceeding the regular study period. No data are available on students paying the latter fees. Ireland: Estimated data based on student numbers in the academic year 2016/17. Greece: The figure does not take into account students studying at the Hellenic Open University who pay fees. Croatia: Data include first-cycle students as well as students in integrated programmes. Around 50% of first-cycle students participate in tuition fees to some extent. Other students pay only small administrative fees (equivalent to less than EUR 100). France: Data refers to all (short-, first- and second-cycle) students. Reference academic year: 2016/17. Austria: Data refer to fee-payers at universities (17%). 5.56% of students at Pädagogische Hochschulen (university colleges of teacher education) and 72% of students at Fachhochschulen (universities of applied sciences) paid fees in 2017/18. Poland: All students pay small administrative fees corresponding to less than EUR 100. Those repeating a study course/subject are charged tuition fees set by HE institutions. No data are available on students paying the latter fees. Romania: Data refer to first- and second-cycle (full-time and part-time) students together. Slovenia: All students pay administrative fees of less than EUR 40. Those exceeding regular length of studies or those enrolled in a programme situated at the level already attained are charged tuition fees set by HE institutions. No data are available on students paying the latter fees. Slovakia: Data refer to first- and second-cycle students together. Montenegro: Since 2017/18, first-cycle first-year students do not pay fees. Those obtaining 45 ECTS or more during the first year continue studying without paying fees, while others have to self-finance their studies. A relatively high share of fee-payers depicted on the figure is partly due to the presence of students who started their studied prior to 2017/18. Norway: Data refer to students in public HE institutions. Private publicly-subsidised institutions are allowed to charge fees, on some conditions. The majority of institutions are public. Serbia: No data are available at national level on the percentage of students paying fees above EUR 100. The range indicated refers to students self-financing their studies in the academic year 2016/17. The real percentage of those paying more than

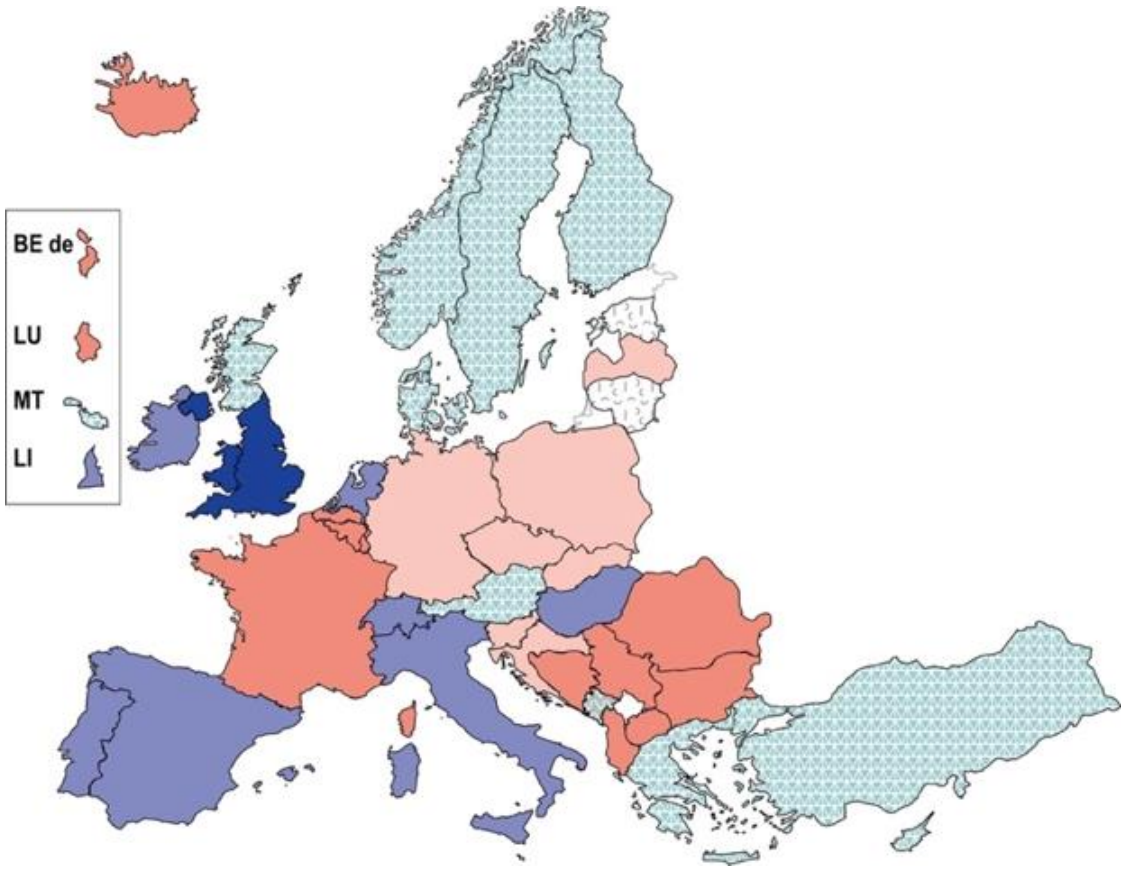
EUR 100 is likely to be higher. The FYROM: Estimated data (98%). Turkey: The figure does not take into account students following evening HE programmes who pay fees.

The share of fee-paying students in the second cycle is comparable to first- cycle data in most studied HE systems. In some systems, however, a different fee policy applies to each of the two cycles, which then translates into different percentages of fee-payers. For example, in Greece, Cyprus, Malta and the United Kingdom – Scotland, no fees are charged to first- cycle full-time students, but students in the second cycle generally pay fees. Turkey also belongs to this group, but the fee charged to second-cycle day-time students corresponds to the amount below EUR 100 (i.e. the amount not considered under Figure 3). In Bosnia and Herzegovina and Montenegro, only some categories of first-cycle students pay fees (or fees above EUR 100), while in the second cycle, all students are expected to pay. In Ireland, first-cycle need-based grant holders do not pay fees (public authorities cover their student contribution of EUR 3 000), whereas in the second cycle, all students are expected to pay tuition fees set by HE institutions.

The amounts that students most commonly pay differ greatly across countries

Beyond the percentage of fee-payers, an important aspect of fee policies is the amount of fee that students pay. Figure 4 looks at the most common fee, which is understood as the amount paid by the highest number of fee-paying students in the system. The figure considers only fees charged to students progressing normally through their studies, i.e. fees for insufficient number of ECTS credits or extended duration of studies are not covered. The focus is, once again, on first-cycle full-time home students.

IMAGE 46. MOST COMMON ANNUAL FEES IN FIRST-CYCLE HE, AMONG FULL-TIME HOME FEE-PAYING STUDENTS PROGRESSING NORMALLY THROUGH THEIR STUDIES, 2018/19



blue: euro 3000,00 or more; purple: between euro 1000,00-3000,00; red: between euro 100,00-1000,00; pink: between euro 1,00-100,00; green: no fees; white: data not available

The figure considers only fee-paying students studying full-time who progress normally through their studies. The normal full- time study progression is understood as an annual academic progress corresponding to around 60 ECTS credits. If national steering documents define the normal study progression differently, the national definition is considered. Fees charged to students failing to make sufficient academic progress, if applicable, are not considered. Fees that may be charged to students who study towards their second first-cycle degree are also not covered. For countries with currencies other than Euro, amounts were converted into Euro (for more details on the exchange rates, see the national information sheets).

Country-specific notes (Figure 4). Belgium (BE fr), Spain, Hungary, Portugal, Romania and Serbia: Reference academic year: 2017/18. Bulgaria: No data are available on most common fee in first-cycle HE. However, the minimum and the maximum fee are situated in the range corresponding to EUR 101-1000 (depicted on the figure). Czech Republic: The figure refers to admission fees paid by all students once per cycle. Germany: There are no tuition fees. In 10 Länder, however, low administrative fees from EUR 50 to 75 (depicted on the figure) are charged to all students. Estonia: Full-time students who achieve 60 ECTS/year and study in Estonian language do not pay fees. Other students (13.8% in 2017/18) pay fees. No data are available on most common fees paid by fee-payers. Greece: The figure does not take into account students studying at the Hellenic Open University who pay fees. Croatia: Apart from administrative charges (equivalent to less than EUR 100; depicted on the figure), there are no tuition fees for first-time first-cycle students achieving at least 55 ECTS credits per academic year. Other students (around 50%) participate in tuition fees to some extent. Italy: The range depicted as 'most common' refers to the average amount of fees. Reference academic year: 2016/17. Latvia: Around two-thirds of students pay only small administrative fees, which are situated under EUR 100 (depicted on the figure). Other students are self-financing their studies and pay higher fees. Reference academic year: 2017/18. Austria: Data refer to universities and Pädagogische Hochschulen (university colleges of teacher education). At these institutions, students who progress at a normal full-time pace do not pay fees. Fachhochschulen (universities of applied sciences) are entitled to charge fees, and most students at these institutions pay fees. Poland: The figure refers to administrative fees paid by students once per cycle. Slovenia and Slovakia: The exact amount of most common fee paid by fee-payers is not available. However, most students pay only small administrative charges (depicted on the figure). United Kingdom (WLS/NIR): No data are available on the most common fee. The range depicted on the figure refers to fees charged by the majority of HE institutions. Liechtenstein: The range depicted as 'most common' refers to the average amount of fees. Norway: Data refer to public HE institutions. Government-dependent private HE institutions are allowed to charge fees, on some conditions. The majority of institutions are public. Turkey: The figure does not take into account students following evening HE programmes who pay fees.

As outlined previously (see Figure 3), nine HE systems have a no-fee policy in the first cycle (sometimes also in the second cycle, depending on the system). In two additional systems – Austria (universities and university colleges of teacher education) and, since 2017/18, Montenegro –, no fees are charged to first-cycle students who progress normally through their studies. Estonia uses the same approach, the only difference being that fees may also be charged to those studying in languages other than Estonian. In a further seven systems – the Czech Republic, Germany (most Länder), Croatia, Latvia, Poland, Slovenia and Slovakia –, students progressing normally through their studies most commonly pay only small administrative charges of up to EUR 100.

Most common annual fees corresponding to more than EUR 100 are recorded in slightly more than half of all studied HE systems. More specifically, in 12 systems, most fee-payers pay between EUR 101 and 1 000, while in eight systems, the most common fee is relatively high, ranging from EUR 1 001 to 3 000. The latter group includes mostly countries where all or the majority of students pay fees (see Figure 1), namely Ireland, Spain, Italy, the Netherlands, Portugal, Switzerland and Liechtenstein. Hungary is another country in this group and here, fees are charged to around one third of first-cycle students (mainly to those who, based on their study performance, did not obtain a state-funded place). The highest most common annual amounts – corresponding to around EUR 10 000 – are charged to students in England and Wales in the United Kingdom (students in Northern Ireland commonly pay around half of the above amount).

While not depicted on a specific figure, second-cycle most common fees are generally identical or very close to first-cycle amounts. There are, however, exceptions. In Cyprus, Greece, Malta, the United Kingdom (Scotland) and Turkey, students do not pay fees in the first cycle, but they are systematically charged in the second cycle. The most common second-cycle amounts range from around EUR 20 in Turkey, to more than EUR 5 000 in Cyprus; and in the United Kingdom (Scotland) they may be even higher, as they are unregulated. In Ireland, Spain, the FYROM and Serbia, there are fee-payers among both first- and second-cycle students, but the most common amount in the second cycle is substantially higher compared to the first cycle (difference of more than EUR 500). In Montenegro, the most common amount charged to first-cycle students not achieving at least 45 ECTS credits per year corresponds to EUR 500 (other first-cycle students do not pay fees), whereas in the

second cycle, all students pay fees and the most common amount corresponds to EUR 1 500.

Fees in short-cycle HE are generally similar to those in the first-cycle

In the systems with short-cycle HE, fees most commonly paid by students (see Figure 4) are often similar to or slightly lower than the most common first-cycle fees (see Figure 3). More specifically, in eight HE systems, there are no fees in the short cycle. Seven of these systems also apply a no-fee policy in the first cycle (Denmark, Greece, Malta, Sweden, the United Kingdom – Scotland, Norway and Turkey). In Spain, in most Autonomous Communities, short- cycle students do not pay fees, while the most common amounts in the first cycle slightly exceed EUR 1 000. In Hungary and Portugal, most common fees in the short cycle are lower compared to first-cycle fees. Cyprus represents a contrasting case: there are no fees in the first cycle, whereas fees in the short cycle range between EUR 300 and EUR 1 350, depending on the modules taken.

Fees in HE are differentiated according to a range of criteria

As discussed previously, European HE systems differ substantially in terms of the proportion of full-time first-cycle students paying fees (see Figure 3). There are systems where only some students pay fees, systems where all pay, as well as systems where no one pays. To complicate further the picture, in the systems where all or some students pay fees, the amount is not necessarily the same for all fee-payers (for more details on the most common amounts. National policies differ in terms of criteria being used for differentiating fees. One rather common approach – observed, to a different extent, in almost all European HE systems – consists of providing fee reductions or exemptions to students who are considered as 'disadvantaged' and most in need. This commonly refers to students with low socio-economic background and those belonging to various under-represented groups, such as students with disabilities, ethnic minorities, and orphans or, in a few countries, children of war victims. Depending on the country, regulations either oblige HE institutions to apply different fee policies in relation to these students (i.e. fee reductions or fee waivers), or they allow them to do so, while leaving them the autonomy to decide on these matters. Regardless of the approach, the fee waivers or reductions based on socio-economic criteria generally concern a relatively small proportion of students (up to one third in most countries).

Fees may also be differentiated based on other criteria, including study fields (e.g. Bulgaria, Spain, Italy, Lithuania, Hungary, Portugal, Romania, Albania, Montenegro and FYROM), language of study (e.g. the Czech Republic, Estonia, Latvia and Slovakia), or whether the student studies towards his/her first or second degree at a specific level (e.g. Croatia, the Netherlands and Slovenia). Alongside the above criteria, other principles are being used to determine which students pay fees and how much they pay. The two indicators that follow discuss the extent to which study performance influences fees paid by students.

Seven countries (Latvia, Lithuania, Hungary, Romania, Bosnia and Herzegovina, Serbia and FYROM) use merit-based criteria in differentiating fees paid by full-time HE entrants. In these countries, based on performance in upper secondary education and/or results of admission tests, students start their HE studies in one of the two groups: a 'state-funded' group, including better performing students who do not pay fees or pay only small administrative charges, and a group of 'self-financing' students who cover (fully or partially) their tuition expenses. Depending on the country, the latter group usually comprises between 30% and 60% of students. During their studies, self-financing students can sometimes change their funding status, based on their academic performance. At the same time, state-funded students may lose their publicly funded place if their performance does not meet expected standards.

Montenegro used to belong to the above group of countries, but reformed its system from the academic year 2017/18. From this point, all first-time first-year students start their studies on an equal footing: they do not pay fees. Those who achieve at least 45 ECTS credits remain state-funded, whereas those with less than 45 ECTS are required to self-finance their studies starting from the second year.

Insufficient ECTS credits or extended duration of studies may imply higher fees

There is another factor that may potentially influence fees: academic performance during HE studies. More specifically, the figure shows that in around a half of the studied HE systems, the non-completion of a defined number of ECTS credits (per semester/year) or extended duration of studies may influence fees paid by students. Depending on the system, students concerned either have to pay additional (higher) fees or they may have to do so, since HE institutions are legally authorised to charge them.

Regulations covering the above matters are framed in different ways. In several systems, ECTS credits are the main criterion for judging whether the academic performance is adequate or not. For example, in Estonia, full-time first- and second-cycle students are expected to achieve 30 ECTS per semester and 60 ECTS per year, and those who do so and study in Estonian language do not pay fees. Students who achieve fewer credits are liable to pay tuition fees for any ECTS missing from a 100% study load. Croatia uses a comparable approach, offering the possibility to all full-time students enrolled for the first time in the first year of short-, first- and second-cycle programmes to study without paying tuition fees (only minor administrative fees are charged). Students who achieve 55 ECTS or more per year continue studying without paying fees. Those who achieve fewer ECTS credits pay either the full tuition fee or a part of the fee, depending on rules of individual HE institutions. Spain does not define the overall number of ECTS credits to be achieved per semester/year, but students are required to pay higher fees for subjects – and corresponding ECTS credits – they have to re-take.

Part-time students are often more likely to pay fees than full-timers

Students who are expected to study 'full-time', but who do not progress adequately through their studies – which often means that they study as de facto part-time students –, may be required to pay additional fees. Building on this information, Figure 6 examines the situation of students officially registered as part-timers (the possibility that exists in around two-thirds of studied HE systems), looking at the percentage of fee-payers (annual fees above EUR 100) among these students. Data are analysed in relation to Figure 1, which depicts the share of fee-payers among full-time students.

In some HE systems, no substantial difference is recorded between the share of fee-payers among full-time and part-time first-cycle students. This is the case in Greece, Cyprus and Norway, where neither full-time nor part-time first-cycle students pay fees. The share is also the same in Luxembourg, the Netherlands, Portugal and the United Kingdom (England, Wales and Northern Ireland), where all students pay fees. In a further three systems - Bulgaria, Italy and the FYROM, the difference in the share of fee-payers among full-time and part- time students does not exceed 10 percentage points: regardless of their status, all or almost all students pay fees.

However, the same (or comparable) share of fee-payers among full-time and part-time students does not necessarily imply the same (or proportional) fee amounts.

In a number of systems recognising formally a part-time student status, a considerably higher percentage of part-time students pay fees compared to their full-time counterparts. More specifically, in Denmark, Malta and the United Kingdom (Scotland), the no-fee policy for full-time first-cycle students co-exists with a universal fee policy (unregulated fees in Scotland) for part-timers. In Ireland, Croatia and Bosnia and Herzegovina, part-time students generally pay fees, whereas the share of fee- payers among full-timers ranges between 50% and 70%. In Spain, the share of fee-payers among part-timers exceeds 90%, while around 70% of full-time students pay fees. In Estonia, Latvia, Lithuania, Hungary and Slovakia, fewer than half of the full-time student population pays fees, but more than 50% of part-time students pay.

Fees for international students commonly differ from those for nationals

All the previous figures concentrated on fees paid by home students, which generally also apply to students from EU/EEA/EFTA countries who study within this geopolitical area. In around a quarter of studied HE systems (12 systems), international students are subject to the same fee policy as home students. This means that either they pay the same fees as home students or, if there are no fees, they benefit from the no-fee policy. In contrast, in 31 systems, the fee policy in place enables HE institutions to charge higher fees to international students. Most commonly, fees for international students are unregulated, which means that HE institutions may set their own fees for this category of learners (e.g. Flemish Community of Belgium, Denmark, Hungary, Poland, Portugal, Sweden, UK, Serbia and FYROM). In other cases, fees for international students - or their possible range - are stipulated in regulations (e.g. the French Community of Belgium, Bulgaria, Cyprus, Austria, Romania and Turkey). In most European countries, international students pay or are liable to pay higher fees than home students.

There are various bilateral and multilateral agreements between countries, which sometimes stipulate specific fee regimes applicable to students from defined countries. These are not depicted on the figure. Furthermore, in some countries (e.g. the Czech Republic, Estonia, Latvia and Slovakia), regulations explicitly allow HE institutions to charge higher fees (or fees) for programmes in foreign languages (in

particular widely spoken languages), which are generally well suited for international students.

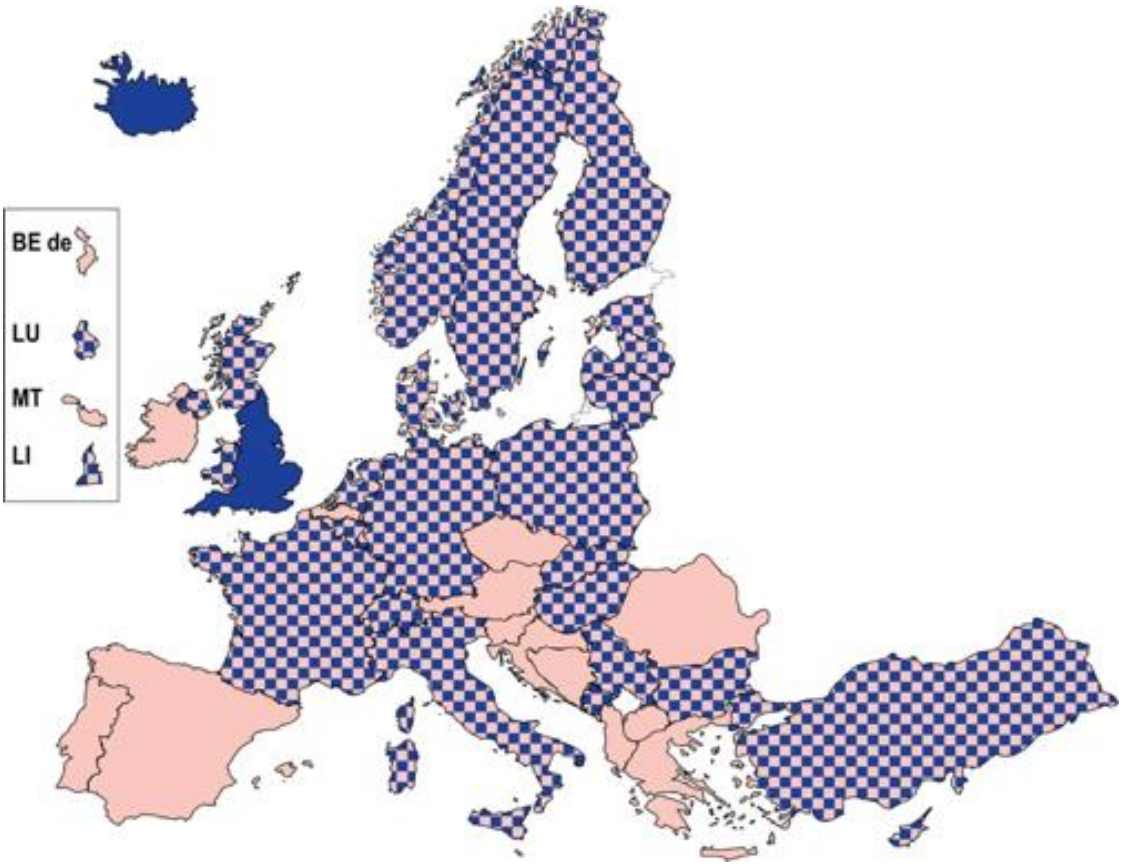
Financial support (grants and loans)

HE studies generally entail considerable financial burden on students and their families. In most European countries, students pay fees and these sometimes correspond to substantial amounts. HE studies also imply other expenses, related to both living and learning. It is therefore important to examine the financial support that public authorities make available for HE students and/or their families.

This section explores main public financial support mechanisms, namely direct financial support to students in the form of grants and loans, and indirect support through allowances or tax incentives to students' parents. The analysis looks at the presence of these mechanisms across European countries, the conditions and criteria of attribution, the amount of support and the proportion of beneficiaries. As with fees, the focus is on full-time first-cycle home students. When relevant, the situation of second-cycle, short-cycle and part-time students is outlined.

All European countries offer at least one type of direct public financial support – grants or loans – to their first-cycle HE students. Public grants, i.e. non-repayable public financial support, exist in all European HE systems except Iceland and the United Kingdom – England. In the latter system, grants ended only recently, in the academic year 2016/17, and they are now available only to students who began their studies prior to this date. Publicly- subsidised loans, i.e. repayable public financial aid, exist in around two-thirds of all European HE systems. However, as discussed further in this section, in a number of systems, study loans are not very widely used.

IMAGE 47. DIRECT PUBLIC FINANCIAL SUPPORT TO FIRST-CYCLE FULL-TIME HOME STUDENTS, 2018/19



Grants: pink, Loans: blue

Among countries that provide both public grants and publicly-subsidised loans, most conceive them as two separate means of student support. Some, however, provide them as a 'package' (Germany, Luxembourg, Switzerland, Liechtenstein and Norway). For example, in Germany, half of the general public student support 'BAföG' is awarded as a grant and the other half as an interest-free loan. In Liechtenstein, public support consists of a variable combination of grants and an interest-free loan, while in Luxembourg and Switzerland, financial aid is a package including a grant only, a grant plus loan, or only a loan. In Norway, the support is initially given as a loan, but 40% of the loan may be converted to a public grant for students who live away from their parents and pass all exams.

While not depicted on a specific figure, public financial support for second-cycle full-time students is comparable to support available for first-cycle full-timers in most HE systems. In some systems, however, the available support is mainly targeted at first-cycle students. This is the case in Montenegro and the FYROM, where only first-cycle students can benefit from public support schemes. This approach is also observed in most parts of the United Kingdom (Wales, Northern Ireland and Scotland), where first-cycle students can benefit from public grants as well as publicly-guaranteed loans, whereas second-cycle students can only benefit from loans (in England, only loans are provided in both cycles). Ireland, Malta and Turkey provide further examples of public funding targeted at first-cycle students: grants are available for both first- and second-cycle students, but the share of beneficiaries is substantially higher among those in the first cycle.

HE systems offering short-cycle programmes (see Figure3 that identifies these systems) generally provide the same support for first- and short-cycle students. There are, however, exceptions. For instance, as noted previously, in the FYROM, public support is only targeted at first-cycle students. In Ireland, grants are available to both first- and second-cycle students (with substantially lower share of beneficiaries in the second cycle), but not to those in the short cycle. In Spain, short-cycle students are eligible only for one – 'basic' – grant component, whereas first- and second-cycle students can benefit from several additional components.

Public support available to part-time students is generally less substantial compared to support for full- time (first-cycle) students. Indeed, in several HE systems that recognise formally a part- time student status, no public financial support is available for students who opt for this modality (e.g. Bulgaria, Denmark, Croatia, Hungary, Romania, Bosnia and Herzegovina, and the FYROM). The consequences in terms of access to public support exist also in systems where students cannot officially register as part-timers, but can still study with less than full-time intensity. For example, in Finland, study grants are available only for students who complete at least five credits per study month (at least 45 credits per typical nine-month study year), and in Sweden, students must study at least 50% (of full-time workload) in order to receive grants or loans (amounts are reduced for students studying between 50% and the full load). Finally, in some HE systems, students studying part-time cannot apply for support targeting full-timers, but they are covered by specific support measures. This is the case in the Netherlands, where, from 2017, part-time students under 55 can

take a study loan to cover tuition fees. The United Kingdom also offers separate support (grant and/or loan, depending on the system) for part-time students studying a course of at least 25% (of full-time) intensity.

Grants are allocated to students based on various criteria

While public grants exist in virtually all European HE systems (see Figure 8), they are allocated to students based on varying principles. Figure 9 distinguishes between three allocation approaches and shows that different approaches often co-exist within a single HE system.

The most widespread approach consists of prioritising socially or economically disadvantaged students, considering that they are the most in need of public financial support. Grants using this 'need-based' approach take into account various socio-economic criteria. The most frequent criterion is family (parental) income. Students who qualify for the grant either receive a flat-rate contribution (i.e. all eligible students receive the same amount of grant), or the amount of grant is differentiated according to student needs (i.e. the lower the family income, the higher the student grant). Other criteria used to attribute need-based grants include whether students live with their families, parents' employment status and/or education, special educational needs or orphan status. Twelve HE systems offer only need-based grants, whereas in 20 systems, need-based grants co-exist with other types of grants.

Although access to need-based grants mainly takes into account the socio-economic background of students, the allocation is not fully independent from students' performance. Indeed, in order to maintain their need-based grant, students are expected to make satisfactory academic progress, i.e. to achieve a sufficient number of ECTS credits within a defined period and/or complete their studies in time. In some HE systems, academic performance has an even stronger impact on the allocation of need-based grants. For example, in Hungary, only better performing students - i.e. those on 'state-funded places' - are eligible for the main need-based grant schemes. In the FYROM, grants are allocated mainly based on socio-economic background of students (70% of allocation weight), but academic performance and the field of study are also considered. A number of other education systems (e.g. Bulgaria, Greece, Italy, Austria and Turkey) also take into account students' merit when allocating largely need-based grants.

The second main allocation approach consists of primarily rewarding academic success, i.e. providing public grants to the best-performing students. Within such a 'merit-based' approach, which is present in many HE systems, grants are awarded either based on educational outcomes during HE studies or based on secondary school results or performance in admission tests. Merit-based grants may also be restricted to students who have chosen specific study fields, and this choice is rewarded. Five HE systems provide only merit-based grants, whereas in other systems, merit-based grants are offered alongside need-based grants.

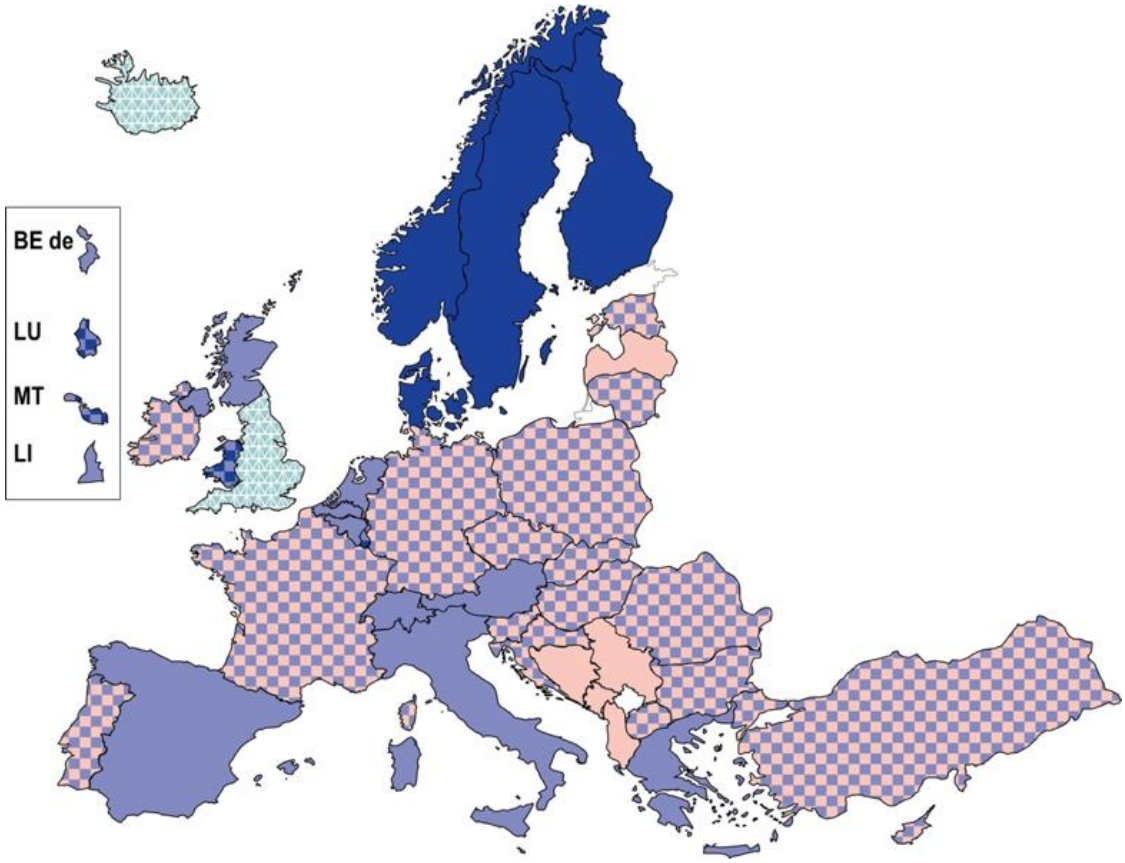
Grants that are mainly merit-based sometimes include a need- based dimension. For example, Latvia offers only merit-based grants, but if, among top-performing students, a choice has to be made, the grant is given to the student with disadvantages (e.g. orphan, student with disability, etc.). In France, merit-based grants are only available for need-based grant- holders, i.e. they aim at rewarding the best-performing socio-economically disadvantaged students.

Finally, seven HE systems provide grants that do not focus on socially or economically disadvantaged students, and do not reward academic performance. In other words, these grants are open to a wide student population (i.e. are 'universally available'), without privileging any specific category. In some cases, universal grants are not means-tested, meaning that students' financial situation (or the financial situation of their parents) is not taken into consideration. For example, in Malta, all short- and first-cycle full-time students are eligible for a student maintenance grant, the amount of which depends on the study field (the highest amount is given to students in 'high priority courses', as defined by top-level authorities). In Luxembourg, all students can benefit from a basic grant of EUR 2 000 per academic year, without any conditions.

A comparable situation can be observed in the United Kingdom – Wales, where starting from the academic year 2018/19, first- and short-cycle full-time students can benefit from a universal grant for living costs of GBP 1 000 per year. In both Luxembourg and the United Kingdom – Wales, higher amounts of grants are possible, but are means-tested. Grants in Denmark, Finland, Sweden and Norway are in principle also open to all students, but they take into account students' financial situation, i.e. the grant is not awarded or is reduced if the student has another source of personal income above a specified amount. The amount of the grant for those who

do receive grants in these four countries also depends on age, living conditions or completion of a certain number of ECTS.

IMAGE 48. MAIN TYPES OF PUBLIC GRANTS TO FIRST-CYCLE FULL-TIME HOME STUDENTS, 2018/19



Universal grants: blue; need-based grants: purple; merit-based grants: pink; no public grants: green

As can be expected, HE systems providing universal grants – i.e. grants that do not target any specific student category (see Figure previous page) – register a high proportion of grant beneficiaries among their students. The highest share is recorded in Malta, Denmark and Sweden, 93%, 89% and 88% respectively. These three countries are followed by Luxembourg and Finland (72% and 69% respectively), and Wales and Northern Ireland in the United Kingdom (64% and 57% respectively). The latter two HE systems record the highest share of grant beneficiaries among systems without universal grants. In Norway, where student support is universally available, the proportion of grant beneficiaries is slightly below 50% (49%). Here, the support

is initially given as a loan, and 40% of the loan may be converted to a grant for students who live away from their parents and pass all exams.

In HE systems offering need-based grants, the proportion of grant holders is in most cases below 50%. A relatively high share of beneficiaries is recorded in Ireland (43%), followed by France (33%), the Netherlands (32%) and Spain (28%). In 19 systems with need-based grants, less than a quarter of students benefit from this support. In some of these systems (the Czech Republic, Greece, Croatia, Lithuania, Romania, Switzerland and the FYROM), the proportion of beneficiaries is below 10%. For example, in the Czech Republic and Greece, only around 1% of students receive need-based grants.

Amounts of student grants vary greatly between countries

In 14 HE systems with data, the most common annual amount ranges between EUR 1 001 and 3 000 (or equivalent in national currency). In several of these systems, however, the reported amount does not exceed EUR 1 300 (the French Community of Belgium, France, Poland, Portugal, Slovakia and Turkey). In three HE systems, the most common annual amount is even lower, situated between EUR 100 and 1 000 (Estonia, Hungary and the FYROM).

At the other end of the scale are five HE systems (Denmark, Germany, Austria, Finland and Switzerland) where annual grants that most students receive exceed EUR 5 000, and an additional six systems, where the most common amounts are between EUR 3 001 and 5 000 (Ireland, Greece, Italy, the Netherlands, Sweden and Norway). These relatively high amounts of grants are coupled with different first-cycle fee policies: no tuition fees in the Nordic countries as well as in Greece and Austria (at universities and university colleges of teacher education), small administrative fees in Germany (in most Länder), and fees of variable amounts in Ireland, Italy, the Netherlands and Switzerland. Moreover, in countries with relatively high most common grant amounts, the share of beneficiaries varies, ranging between more than 50% in Denmark, Finland and Sweden, and around 1% in Greece.

Access to direct public financial support (grants and loans) is often limited by age

As outlined previously, direct public financial support is allocated to students based on varying conditions. As well as socio-economic circumstances or academic merit, another criterion may influence students' eligibility: their age. This criterion affects

access to direct public support – grants and/or loans – in around half of all European HE systems. The presence of age limits, and the ages at which they are set, gives an indication of whether or not the HE system is structured to support a lifelong learning concept.

In some HE systems, the age limit is situated in students' 20s, so that direct public financial support is available only to 'traditional learners'. The age limit in question, however, does not always affect all types of available support. For example, in Poland, publically subsidised loans can only be taken out until the age of 25, while access to public grants is not limited by age. In the Czech Republic, only access to need-based grants (social scholarships) is limited by age (26 years), while access to merit-based grants is not age restricted. In Lithuania, the age limit of 25 years only applies to social scholarships targeting orphans. In France, Slovenia, and Bosnia and Herzegovina, all main types of direct public financial support (i.e. grants and loans in France, and grants in Slovenia and Bosnia and Herzegovina) use age criteria situated in students' mid- or late 20s.

The age of 30s is set as the maximum age for benefiting from direct public financial support in: French Community of Belgium (grants and loans), German-speaking Community of Belgium (grants), Bulgaria (loans), Germany (combined grant-loan scheme 'BAföG', and loans within the 'Bildungskredit'), the Netherlands (grants and loans, except loans to cover part-time study fees), Austria (grants), Romania (social scholarships), Switzerland (grants and loans in most cantons) and Liechtenstein (grants).

In some HE systems, the maximum age for access to direct public financial support is situated in students' 40s, 50s or 60s. In Greece and Hungary, for instance, the age of 45 limits access to publicly-subsidised loans. In Sweden, grants and loans are available until the age of 57, but the amount of support decreases from the age of 47. In Norway, the age limit for students' support is set at the age of 65 (with loans that decrease after the age of 45), whereas in the United Kingdom, while some support schemes do not have an age limit, others (mainly maintenance loans) have an age limit of 60.

Overall, the maximum age until which students can benefit from direct public financial support is an important dimension to consider when analysing the access of mature students (30 years or older) to HE. Available statistics on the participation of such

students reflect this dimension by showing that the Nordic countries, which commonly provide universal financial support (see Figure 9) and, at the same time, apply no age limits or broad age limits, are among those with the highest share of mature students in HE.

Around half of all European countries offer financial support for students' parents

In addition to direct financial support provided as grants and/or loans, other schemes may be used to financially support HE students or their families.

Tax benefits for students' parents are in place in many European HE systems. This financial instrument allows parents who support their student-child to deduct a defined amount of money from their income tax. The tax deduction can take various forms. It can be provided as an annual lump sum deduction per studying child (e.g. in the Czech Republic, Germany, Latvia, Austria, Poland, Slovakia, Switzerland and Liechtenstein), as a tax-free income up to a certain amount (e.g. Belgium), or as a percentage of study expenses, such as study fees, that can be deducted from parental income taxes (30% in Portugal, 19% in Italy and 15% in Lithuania). Commonly, the amount of tax deduction also takes into account parental income and/or the number of dependent children in the household. Moreover, this type of support is generally limited by the student's age, and parents can obtain it only until their children reach their mid- or late 20s.

Alongside tax benefits for students' parents, several countries also provide tax benefits for some or all students with an income (Belgium – the Flemish Community, the Czech Republic, Ireland, France, Italy, Latvia, Lithuania, the Netherlands, Slovenia and Liechtenstein). Family allowances for students' parents are slightly less common compared to tax benefits: they exist in 12 European HE systems. The eligibility for this type of support and its exact amount are determined by various conditions and criteria. For example, in Germany, the family allowance is awarded for each studying child and increases by the number of eligible children, while in France, it is conditional on having at least two dependent children. In the Czech Republic, Poland and Portugal, family allowance can be obtained only if the family's income is below a minimum income threshold. As with tax benefits for students' parents, family allowances are allocated only until a defined student age, which ranges between 20 years (France and Liechtenstein) and 26 years (the Czech Republic). Overall, support for students' parents - taking the form of tax benefits or family allowances - is less

common in north-western and south-eastern Europe than in other parts of Europe. This suggests some cultural differences in national support systems. The main distinction is that countries with only direct support schemes target the individual student, while countries that also make use of indirect support mechanisms consider students as members of a family and aim to provide support and incentives via students' families.

Finally, alongside financial support mechanisms previously discussed public authorities may provide further subsidies for students and their families. For example, they can subsidise students' accommodation, contribute to transportation discounts or cover students' health or pension insurance. While not presented systematically in this report, the above support reduces the financial burden that HE studies represent for students and their families and is likely to contribute to widening access to HE.

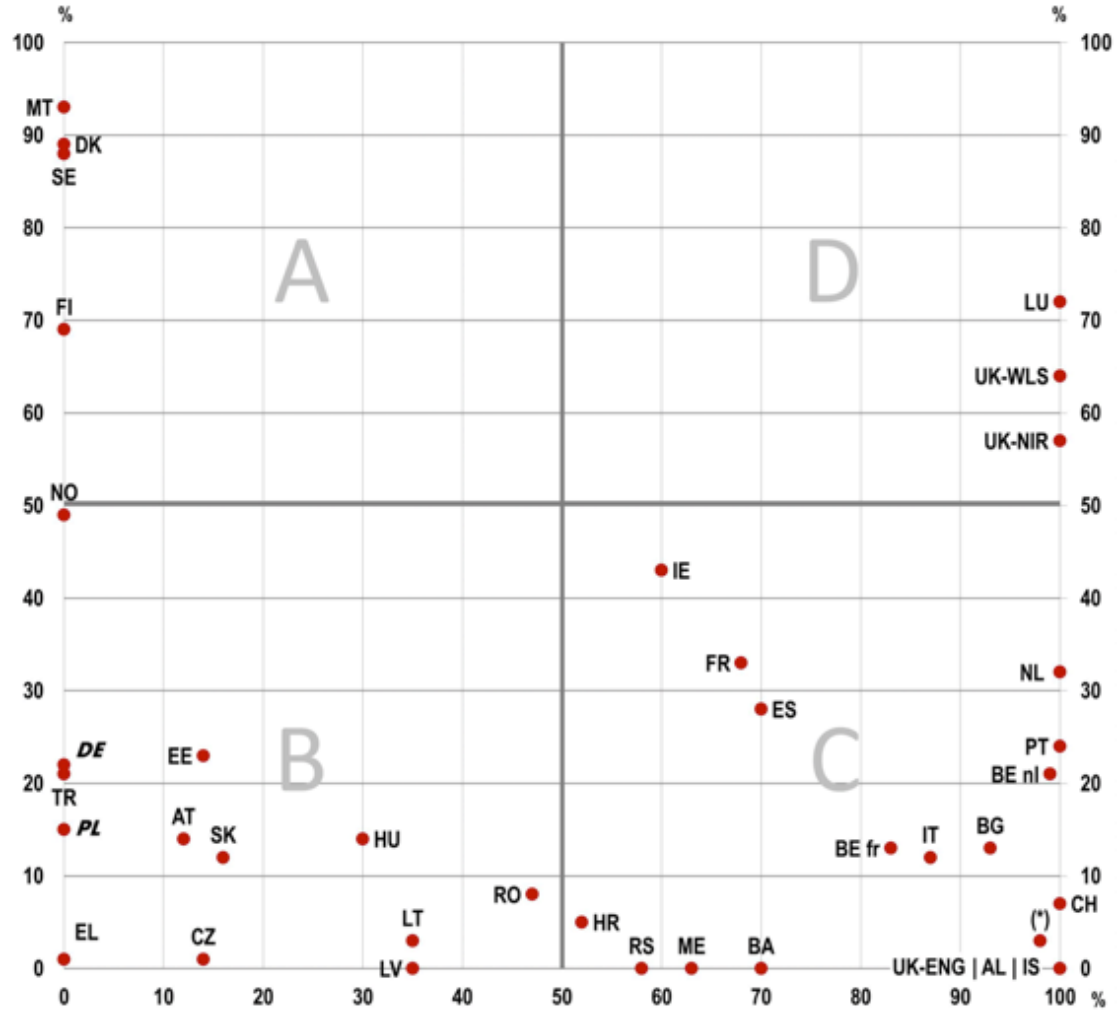
The relationship between fees and support

We have explored different approaches to requiring contributions from private households (students and/or their families) and to supporting students financially during their studies. Where fees are concerned, the approaches include no-fee policies, universal fee policies, as well as fees only for some categories of students. These policy options sometimes interact within a single HE system, with different fee regimes related to different study cycles, study modes (full- time/part-time), and home and international students. As far as student support is concerned, all studied HE systems provide at least one type of direct financial support - grants and/or loans, and around half of them provide indirect support in the form of family allowances and/or tax.

The combination of fees with financial support tools is crucial to understand the country's policy reality, and these combinations may be numerous. The next Figure examines this matter by looking at how governments distribute HE fees among students (share of fee-payers), and how widespread financial support actually is (share of support beneficiaries). The financial support is evaluated through grants (need-based or universal), which are the most common form of student support in Europe, and arguably the most significant in influencing students' perception of their financial security during studies.

By focusing on full-time first-cycle home students, figure in next page brings together data presented in this section and examines them in a combined perspective.

IMAGE 49. PERCENTAGE OF STUDENTS PAYING ANNUAL FEES ABOVE EUR 100 AND PERCENTAGE OF BENEFICIARIES OF GRANTS AMONG FIRST-CYCLE FULL-TIME HOME STUDENTS, 2017/18



Fees on horizontal axis; grants on vertical axis

Co-funded by the Erasmus+ Programme of the European Union

Taking into consideration the share of fee-payers and grant-holders, four types of policy approach can be identified:

A) This approach (quadrant A on Figure) combines a low percentage of fee-payers and a high proportion of grant beneficiaries. In countries following this approach, the public budget covers the student HE fees. No, or only few, students pay fees. In addition, a majority of students receive grants, with amounts usually adjusted according to the individual student's socio-economic situation. This approach – observed in three Nordic countries (Denmark, Finland and Sweden) and Malta – indicates significant investment from the public budget in supporting student participation in HE and provides students with a high level of economic independence. Norway is quite close to this group, since it applies a systematic no-fee policy, but compared to the above countries, it has a lower – yet, still relatively high – proportion of grant beneficiaries.

B) Similarly, to countries in A), these countries charge fees to no or only few students; in any case, less than 50% of students pay fees (or fees above EUR 100). Here, however, the low percentage of fee- payers combines with a low percentage of grant recipients. This group can be further sub-divided into two clusters. First, there are countries with a no-fee first-cycle policy, such as Greece and Turkey, as well as those where only a small share of students pay fees, mainly as result of poor study performance (the Czech Republic, Estonia, Austria – universities and university colleges of teacher education, and Slovakia). Germany and Poland cannot be positioned precisely on the figure (see the country-specific notes), but they also belong to this cluster with no or a low share of fee-payers and grants that reach less than a quarter of students. In the second cluster, including Latvia, Lithuania, Hungary and Romania, a higher percentage of students – between 30% and 50% – pay fees. In these countries, based on study merit, students enter HE in one of the two groups: a group of better performing students who are state-funded and a group of students who are self- financing (fully or partly) their studies. As in the above cluster, the share of grant beneficiaries in these countries does not exceed 25% and, here, grants are sometimes available only to state-funded students (e.g. Hungary). Latvia offers only merit-based stipends (for state-funded students), and does not offer any systematic need-based grants. In contrast to countries in A) and B) quadrants, countries in C) and D) follow a policy that charges fees to the majority or to all

students. C) and D), however, differ in their approaches to distributing grants among the student population.

C) These systems combine a high percentage of fee-payers and a low percentage of grant recipients. Fees either are paid by all students or by most students, and fee exceptions, when existing, often target socio-economically disadvantaged students. Besides this general pattern, some other approaches to fees exist in this group. In Croatia and, from 2017/18, Montenegro, new entrants do not pay fees (or pay only small administrative charges) in the first study year, but if they do not complete sufficient number of ECTS credits they pay fees from the following academic year. In a further three countries (Bosnia and Herzegovina, Serbia and the FYROM), based on their merit, some students study at state-funded places (i.e. pay no fees or only administrative charges), whereas others self-finance (partly or fully) their studies. Regardless of the approach to fees, in most countries in this group (all except Ireland), less than a third of students obtain a need-based grant. In the UK - England (since 2016/17 for new entrants), Albania, Bosnia and Herzegovina, Iceland, Montenegro and Serbia, there are no need-based grants.

D) In this quadrant, systems have a high percentage of fee-payers and a high percentage of grant recipients. It is opposite to B) in both dimensions: fees and grants. This group includes Luxembourg, where all students pay fees and most receive a basic grant, and where further socio-economic criteria and income determine the extent to which students receive an additional grant, a loan or a combination of the two. Wales and Northern Ireland in the UK also belong to this cluster by their universal fees coupled with a relatively high share of grant beneficiaries. Moreover, in Wales, starting from 2018/19, all students can benefit from a grant for living costs of GBP 1 00/year (higher amounts are possible, but are means-tested).

Data on the different student support tools gathered in this report also show that in most countries in category A) (all except Malta), in addition to grant provision, a relatively high proportion of students take out loans. This tends to make students more financially independent in comparison to their counterparts in other HE systems. Only a few countries in other quadrants register a comparably high share (above 25%) of loan beneficiaries, namely the Netherlands, UK - England, Wales and Northern Ireland, Iceland and Norway. Moreover, in a number of B) and C) model

countries, indirect support such as tax benefits and/or family allowances paid to students' parents are available support tools, while these are not often included in the policies of countries in the A) and D) quadrants.

This general overview can be integrated by more detailed info regarding each system chosen as case studies in this report. Previous data and general remarks are derived from the following literature:

Eurostudent.eu, *The Impact of Fees on Students' Budgets*, 2016

EACEA/Eurydice, *National Student Fee and Support Systems in European HE 2018/2019*, Luxembourg: Publications Office of the European Union, 2018

OECD, *Tuition Fee Reforms and International Mobility*, Education Indicators in Focus, April 2017

7. INTERNAL ALLOCATION OF RESOURCES

Just over half of the systems allow universities to allocate their funding internally without specific restrictions. In about a third of the systems, the block grant may be divided into broad categories, such as teaching and research (in our case studies, Sweden), teaching, research and infrastructure (Latvia, Lithuania), salaries and operational costs (Portugal), or investments and operational costs (in our case studies, France). As a rule, there are limited possibilities for the universities to move funds between these categories although situations cover a wide spectrum.

In some cases, universities receive a block grant that can be freely allocated, although specific restrictions/ situations apply. In Ireland, a percentage of the block grant is earmarked for specific tasks, such as widening access for disadvantaged socio-economic groups. Institutions cannot use this money for other purposes. In Poland, universities receive a block grant for teaching, while research funding is allocated directly to the faculties.

In the following part of the Report we develop some case studies, driven from universities of France, Germany and Sweden.

Alternative Budget Models for Colleges and Universities

Below is an overview of some budget models or budget-related practices utilized in HE: Incremental Budgeting, Zero-Based Budgeting, Activity-Based Budgeting, Responsibility Center Management, Centralized Budgeting, and Performance-Based Budgeting.

Incremental Budgeting

Definition

This is a traditional budget model in which budget proposals and allocations are based upon the funding levels of the previous year. Only new revenue is allocated. Budget cuts are made as a percentage of the institution's historical budget, and are typically across-the-board in reach.

Benefit

Incremental budgeting has historically been attractive to institutions of HE because it is easy to implement, provides budgetary stability, and allows units and institutions to plan multiple years into the future, due to the predictability of the model.

Drawback

This model is limited in its vision, as it is difficult to determine where costs have been incurred and how these costs contribute to revenue and value creation. Institutions are accountable for what they spend in the most basic sense.

Zero-Based Budget

Definition

At the beginning of every budget planning period, the previous year's budget for each unit is cleared. Every part of the institution must re-request funding levels, and all spending must be re-justified.

Benefit

Zero-based budgeting is an effective way of controlling for unnecessary costs. Since departments and divisions do not automatically receive a certain sum each year, all money allocated to a unit has a purpose, keeping waste and discretionary spending to a minimum. According to the Mackinac Center for Public Policy, zero-based budgeting reduces the "entitlement mentality" with respect to cost increases, and has the potential to make budget discussions more meaningful.

Activity-Based Budgeting

Definition. Activity-based budgeting awards financial resources to institutional activities that see the greatest return (in the form of increased revenues) for the institution. Adoption may involve:
Developing activity groupings for budgeting, in coordination with campus leaders and constituents; Developing fund source groupings; Designing budget processes whereby campus leaders use activity taxonomy and allocation plans to align resources to institutional strategic objectives; and Implementing an activity-based campus budget allocation process; Benefit.

If the University can accurately state where revenues are coming from and link these revenues to broader strategic objectives, this method may increase revenue moving forward.

Responsibility Center Management

Definition. Responsibility Center Management (RCM) is perhaps closer to a management philosophy than a budgeting strategy. It is designed to support the achievement of academic priorities within an institution and allows for a budget, which closely follows those priorities.

RCM delegates operational authority to schools, divisions, and other units within an institution, allowing them to prioritize their academic missions. Each unit receives all of its own revenues and income, including the tuition of its enrolled students. In this way, units effectively compete for students. Each unit is also assigned a portion of government support (where applicable). However, units are also responsible for their own expenses, as well as for a portion of expenses incurred by the university's general operations.

Benefits

Some university administrators are turning to RCM as a solution to budgetary woes brought on by the recession. Advocates of RCM claim that forcing individual units to fight for their survival induces deans to pursue new revenue sources.

Centralized Budgeting

Definition. Centralized budgeting requires all decision-making powers to be in the hands of upper level administration. Typically, colleges and universities combine aspects of centralized budgeting with decentralized budgeting.

Some researcher sees a more centralized budgeting system as a prudent way to navigate difficult financial circumstances, due to the powers invested in top administrators to make tough decisions for the university as a whole. In a system combining central budgeting with another process, the rationale for choosing which units are centrally budgeted may be adaptable. For example, when combined with performance-based funding, colleges might centrally budget those divisions for which no performance metrics can be reliably identified. Another reason to implement centralized budgeting is that some expenses are necessary to the basic functioning of divisions, and are therefore not optional. A common example of centralized budgeting under this rationale is IT equipment - e.g., computers, printers, and software. If all

faculty require a computer to perform their duties, this is a cost, which cannot be compromised, and can be centrally budgeted to ensure that the college keeps the cost under control.

Performance-Based Budgeting

Definition. Whereas an activity-based budget awards funds based on the amount of revenue-generating activity a unit undertakes, a performance-based budget awards funds based on performance, which is determined by a number of defined outcomes standards. The most effective performance budgets will show "how dollars fund day-to-day tasks and activities, how these activities are expected to generate certain outputs, and what outcomes should then be the result".

Benefit

A performance-based budget should give an institution a good idea of how money is expected to translate into results. Performance-based systems are often imposed on public systems of education because of greater accountability demands. Linking the funding of public institutions to the results they deliver lends an increased level of transparency to expenditures among institutions reliant upon public financial support.

The budget process must include time for the review of performance measures (which itself necessitates a prior collection and analysis process) and time for discussion of performance against expectations. Only then can dollar values be assigned to divisional outcomes.

Accounting

Regardless of profit or non-profit nature of productive activities, every organization faces the challenge of achieving objectives through internally allocating limited resources. An institution of HE, for instance, is recognized as a prestige-seeking entity allocating limited resources among academic units, while providing multiple products and services for their stakeholders, which include students, parents, communities, and governments. Conflicting interests within a HE institution, however, are documented in scientific literature, for different departments competing in a zero-sum game with the faculty trying to increase the prestige of only their particular department rather than the overall prestige of the institution. Moreover, some author attribute differences in the number of tenure-track or tenured faculty across academic departments to political forces within the institution, which causes the "stickiness of the adjustment process". This paper lays out a simple theoretical

framework for understanding a counterintuitive outcome of such conflicting behaviours leading to an unfavourable consequence while an institution attempts to allocate in the best way resources into multiple activities. The analysis is carried out particularly with not-for-profit organizations such as HE institutions, whose aims are considered to be serving the public need under financial constraints, seeking to improve social reputation or prestige.

The Report examines an important scenario, which a standalone institution of HE is predicted to follow in order to achieve its potential maximal performance when the available resources are severely limited. Our result clearly indicates that a collection of multiple departmental performances does not necessarily yield the highest level of institutional prestige; that is, diversification of functional specialties is not necessarily the prudent approach to attaining the highest potential recognition when a university faces a scarcity in its financial resources. We also find that the limited internal adjustability caused by conflicting interests within a university impedes the goal of attaining the best outcome in the long term although the university "optimally" allocates its resources in the short term.

Source: Abe, Y. and Watanabe, S.P. (2015) *Implications of University Resource Allocation under Limited Internal Adjustability*, Theoretical Economics Letters, 5, 637-646.

Notable researchers assert that resources are allocated due to perceived relative needs and are constrained by the availability of resources determined by fiscal policies and regulations. They emphasize that funds flowing into institutional systems or institutions for annual base funding will have to be distributed down the line, noting that the internal allocation of funds is not a trivial matter as it shapes, to a greater extent, the character and performance of an institution. The benchmarking identifies four types of resource allocation used by research HE institutions:

- central control where nearly all the revenue is under the control of central administration to cover costs while the balance is allocated to the spending units;
- container ("tub"), where each college or unit keeps the revenue it generates, including tuition fees and fees, but must be responsible for all costs incurred and funds are only remitted to central administration to cover shares of central costs;

- container with franchise fees, where each unit is regarded as a tub but remits more than its share of central costs and the franchise fee is allocated back to the units at the discretion of the central administration;
- activity-driven allocation, where each unit remits to the centre a share of its total expenditure, which differs across activities (e.g. teaching, research, etc.).

The centre covers the central costs and allocates excess funds back to units without explicitly having calculated the central costs for each unit. The tub reduces the central administration control over resources and the actions of the dean; but this is not the best way of allocating resources because it will not improve efficiency and cost control. The analysis identifies three factors for effective resource allocation. The first is to understand the incentives system that guides spending in HE institutions. The incentives are based partly on intrinsic values and partly on instrumental ones. Massey advises that no institution should ignore the market-place in order not to risk financial dislocation, while those that ignore intrinsic values in the academic vision and mission tend to behave like an ordinary business enterprise. The second factor involves recognizing and managing the diversity of intrinsic values that abound within any HE institution. Economic theory examines the role of self-interest, which diverts resources away from institutional goals. The third factor is related to managing the complexity of resource allocation reform. The reform aims to move resource allocation from traditional central organizational units to decentralization units. The resource allocation model (RAM) is defined as a means by which available resources are used judiciously to achieve the objectives of an institution to a high level of satisfaction. The RAM provides essential incentives to academic units in a devolved approach to enable those units to contribute to the strategic and financial objectives of the institution as a whole. In the resource allocation literature, distinctions can be made between centralized and decentralised models. In the former, the top management directs the affairs of the institution and this is regarded as a top-down system of governance, while the latter is participatory and collegial, where decisional process involves both the top management and the unit segments of the institution. This is regarded as a bottom-up system. This is an indication that the power over how to spend the allocated resources rests on the faculty rather than the top management of the institution. The ability to substitute one resource for another is not possible. On behalf of units, the centre incurs all purchases made from the market and as such describes the budget of the unit as a list of drawing rights on

various physical resources, valued at a price, which can be the market price, or any price calculated by the centre. A unit which chooses to purchase a resource is charged by either the centre or by another unit, while an accounting device to record a planned use of resources by a budget unit constitutes withholding as it is not mandatory for accounts to be balanced within units but it can be done when required by altering the accounting prices. The Report concludes that if resources are allocated in this manner, a budget is nothing more than a set of figures describing a list of physical items expressed in monetary terms so that they can be compared and added. This does not attract any incentive that encourages efficient use of the resources allocated since transfers between budget lines are not allowed and any savings through underspending cannot be carried forward. Units will attempt whenever possible to hoard unused resources to protect themselves from the impact of future budget cuts and other uncertainties. Under a centralised model, incentives likely to promote efficient use of resources at the unit level may not be possible

Performance-based budgeting has a variety of challenges. One key risk of performance–based budget models is that rash conclusions could make a university's weaknesses even weaker. For example, let us say that a university has adopted performance-based budgeting, and that its career centre is not reaching its performance goal of placing 75% of its undergraduates into summer internships. A simple interpretation of a performance-based approach implies that the career centre should receive less funding in the future. However, maybe the career centre simply does not have the funds to hire sufficient staff to maintain a robust summer internship-recruiting website for its students. If the career centre is not hitting its target because it does not have the resources to operate an effective program for summer internship placement, then decreasing the career centre's budget due to low summer internship attainment may exacerbate the issue. The administration should inquire as to why this is the case before penalizing its career centre's budget for not meeting performance expectations.

This example highlights another key challenge inherent in performance–based budgeting: HE leaders using a performance-based budgeting model must invest their time to understand why performance is or is not reaching the expectations. For those universities who do not currently have a performance-based budget model, transitioning to any new budget model would intuitively be a very time-consuming

effort. Administrative time is a key resource that universities and state officials should keep in mind when deciding whether to adopt a performance–based budget model.

In the following pages, some case studies of universities regarding the internal budget distribution models are analysed.

FRANCE

Paris-Sud University

Paris-Sud University was created in the beginning of the 1970's. Paris-Sud is a research intensive multi-disciplinary university with a strong focus on science (the Science faculty accounts for about 45% of all university resources, staff, students, etc.).

Paris-Sud offers BA, Masters and PhDs as well technological training & life-long learning. The university is organised in nine components of which five are faculties, one an engineering school (Polytech Paris-Sud), and three are technology institutes. Paris-Sud trains more than 30,000 students a year of which 2,600 are PhD candidates. It has 2,800 teachers and researchers (2014–2015). The university has 78 research units; most of them are a mix of research units and public research organisations such as CNRS, INSERM, or CEA. Paris-Sud is renowned for the quality of research, especially in physics (two Nobel prizes) and mathematics (Medal Fields). A special characteristic of Paris-Sud is that it is located around eight campuses in the south of Paris. Since 2014, Paris-Sud is a founding member of the Paris-Saclay University a large project with the objective to account for 20% of French research by 2020.

Budget allocation model

The budget allocation model is rather incremental due to the historical preeminent governance of the Ministry for HE and Research in the university management and specifically in the management of human resources. There are attempts to develop performance-based budgeting but the university's room for manoeuvre is still limited.

Budget breakdown

Legally the university has three budgets: the principal budget (95%), the budget for the technology transfer office and the University Foundation budget (5% altogether). The funding coming from public sources is found in the principal budget. The overall university income is approximately €400m (2016): the public funding streams are coming from the state endowment for public service provision, the State Region Plan Contract (CPER, plurennial contract), The Investment for the Future Programme (PIA), the Campus Operation, and the National Agency for Research (ANR) for research grants. The income is split into two categories:

- The global budget (77% of the total income) which is a common pot, out of which 68% comes from the general state endowment for public service provision and 9% from the university's own resources (private sources by definition: tuition fees, revenues from life-long learning, the training tax, private research contracts and revenues from valorisation).
- The management of the human resources budget.

The overall university room for manoeuvre in terms of decision making with regard to the global budget has dramatically changed since 2010. Since this year, the Ministry for HE and Research does no longer directly fund the universities' staff (teachers, researchers and administrative staff with the status of civil servants). The consequence is that the universities are now in much more control of managing their human resources. The university president and board define the staff missions, the payroll policy, and the creation of or reshuffling of positions within the university. The university has however a maximum number of 'positions' permitted and cannot hire more than the authorised maximum. In parallel to this maximum number of positions, the university receives an annual 'financial envelop' to pay for these positions (included in the state endowment for public service provision).

For most universities, it has been (and still is) a challenge to develop strategic management of their staff including a correct numbering of staff and a precise forecasting on costs according to career trajectories (and costs incurred). This is also a critical issue at Paris-Sud where 89% of the state endowment for public service provision (68% of the total budget) is devoted to the payment of permanent staff (teacher-researchers and administrative personnel with the civil servant status). The university develops step-by-step a thinking in terms of total payroll rather than in terms of numbers of positions, as it used to do it when the ministry was managing the payroll. Paris-Sud has for instance taken action in terms of staff reshuffling (5

positions where reallocated between faculties within an overall movement of 40 reorganised positions) based on various criteria such as the overall weight of faculties but also with relative student/staff ratio according to disciplines. The objective is to be more and more strategic and to allow for the creation of new positions based on scientific projects and not according to an automatic continuation of the positions, as it used to be. After 2010, the university has also sought to reorganise its human resources structure in order to decrease the proportion of less qualified administrative staff. The room for manoeuvre is still much larger regarding fixed term contract staff than permanent staff.

Internal allocation of public funds

The impact of the university's central strategic decisions is limited by the overall volume of funds that the university can directly and freely handle. Once the permanent staff is paid for (88% of total state endowment), about €35m remains for the university's running costs and specific actions. The €35m is coming: i) from the state endowment for public services provision, ii) from a 'tax' that the university is collecting from all public research contracts (14% of which half is directed to the university TTO activities and the other half is at the university management's disposal and is not targeted). The €35m is split into two approximately equal parts:

- Mandatory expenses corresponding to all expenses allowing for hosting students and researchers such as fluids, surveillance, catering etc. All running costs on campuses and outside buildings are centrally managed by a central direction at university level (used to be managed at faculty level).
- Other expenses split between research / training and steering and horizontal actions.

Research (about 40%):

The university is allocating recurring funding to its laboratories, every year, with the objective to provide the same amount over the whole duration of the state-university plurennial contract (4 to 5 years). This recurring amount is defined mainly based on the number of staff.

The university is funding patent protection and patent maintaining costs (€300k/year).

Projects labelled 'mutualised research', to cover means (€700k every two years) and other research equipment (€400k every year).

Training (about 50%): University is not managing the global budget for training. It however provides a limited amount of financing for overtime ("heures complémentaires"). The university manages a pedagogic call for project (€500k for pedagogic equipment).

Steering and horizontal actions (about 10%) such as: Digital resources - Steering and reorganisation - Library, documentation (periodic / journals)

Internal allocation mechanism between the universities and Faculties / components

The allocation mechanism is rather incremental with a 'budgetary conference' at the beginning of September with the university president team and each of the nine university components. The bulk endowment based on the previous year ("budget socle") is discussed according to a process called 'management dialogue' ("dialogue de gestion"). This management dialogue is quite new to the university. Before 2009, the university director of services (administrative counterpart to the university president) used to allocate the funding directly.

At the faculty level

Each of the nine components at the university has its own internal budget allocation model, which is more or less centralised. Historically, faculties enjoy a great deal of autonomy. For instance, each faculty collects and spends the tuition fees (€7m as a whole in 2016) according to its own priorities. The other revenues that faculties have, such as revenues from life-long learning and the training tax, are also at the faculty's disposal. However, the university charges overhead on these revenues (from 5% on the training tax to 6% on the tuition fees) in order to finance the university's running costs.

Comments

The overall budgetary context has been evolving rapidly and strongly the last years. Still, even if the university has some strategic capacities, they are relatively limited. The relatively limited freedom that the university has regarding its internal budget allocation is in part an effect of the limited resources it has for strategic allocations (today 6-7% of the budget). One challenge is to increase the university's own 'non-

earmarked' resources in order to be able to act more strategic. At the same time, Paris-Sud is engaged in a large joint project (IDEX Paris-Saclay) where the philosophy is to share more and more financial means to develop shared activities (there are already common doctoral schools at the Paris-Saclay level). This approach ties up much available resources.

The current model provides a medium term planning horizon with respect to the five-year contract established with the state. The model's limitation is the human resources management constraint. Moreover, the Paris-Sud staff is quite young (on average about 40 years old) which is considered a demographic time bomb. With increasing wages and stable endowment from the state in terms of payroll, there is a strong risk in seeing the human resources budget representing a larger share of the overall budget. This could damage the university's ambition of increasing the strategic share of the budget. Collaboration across academic and other organisational units is sought in particular with the call for projects MRM and ERM (even though in can be intra-disciplinary).

An important issue is the allocation of recurring funds to labs. The allocation of these funds used to take into account the evaluation results of laboratories performed by Nat'l Evaluation of Research and HE Agency (AERES). The evaluation reports used to provide a type of grading (A, B, C, D) on various aspects of the laboratories activities. Paris-Sud used these evaluations as a basis for the allocation of funds, which was at the time more geared towards performance-based funding. With the substitution of the High Council for the Evaluation of Research and HE (HCERES) to the AERES in 2013, the evaluation is today only qualitative and is difficult for the university to use as a performance-based tool. As a result, the allocation of recurring funds is now only based on the weight of the laboratories. The university favoured the previous solution but has no resources for developing an internal evaluation system to replace the national one. This circumstance leads even further away from a flexible and strategically dynamic allocation system. To conclude, while the university (but also other French universities) is working on developing monitoring and steering tools and seek more relevant information systems in order to increase its overall strategic capacities, its possibilities for acting freely and strategically is limited.

GERMANY

Internal budget distribution model at TUB

The university. Technische Universität Berlin, known as TU Berlin or Technical University of Berlin, was founded in 1879. As one of the most prestigious research and education institutions in Germany, it has the highest proportion of foreign students out of all universities in Germany, with 18.1% of 32,752 students in the winter semester 2014/15. TU Berlin is organised in seven faculties (Humanities; Mathematics and Natural Sciences; Process Sciences and Engineering; Electrical Engineering and Computer Science; Mechanical Engineering and Transport Systems; Planning - Building - Environment; Economics and Management), and a satellite campus (El Gouna) in Egypt that is operated as a scientific and academic field office. The establishment of large research groups (Forschungsverbünde) by the Excellence Initiative, the German Research Foundation, and the European Institute of Innovation and Technology, in conjunction with a steady increase in external funding for research projects exemplify the dynamic development of TU Berlin's high quality research profile. Furthermore, TU Berlin's high score in national and European rankings is underpinned by numerous prestigious prizes and awards. These include Alexander von Humboldt Professorships, Einstein Professorships, the Gottfried Wilhelm Leibniz Prize, and numerous Grants of the European Research Council.

The budget allocation model

The governance regime of the German university system has changed from a "self-management model" to a "management model". As part of this development, it was expected that the performance of universities be improved, both in research and in teaching. An effective allocation of funds must take into account the range of topics as well as the specifics of the different subjects with regard to the provision of services and financing needs. The model of the performance-based allocation of funds can be based on two possible approaches. Firstly, the allocation of funds can be linked to performative success, whereby a high degree of quantitative comparability is possible. On the other hand, target arrangements can be made. The

TUB has developed an internal model for the allocation of funds that is operated at the level of the faculties. The model is based on a set of differently weighted indicators. While the basic funding for professorships is allocated centrally by the President's office, the direct control over the performance-related allocation of funding is devolved to the faculties. Each of the seven faculties has the discretion as to which extent specific areas will receive performance-related funding. While the funding of chairs, which constitute the backbone of the TUB in all areas of research, is allocated on a needs basis, the specific area research is to a high extent financed through external funding. Overall, the model rests on the devolution of control over decisions down to the level of the faculties. In the case of the TUB, this is not conducive to an atmosphere of competition between the faculties or individual research groups. In effect, the amount to be allocated on the basis of performance-related criteria is split between the three categories teaching, research / young researchers development, and equality. However, the performance-related share in the allocated budget is relatively small.

IMAGE 50. TU BERLIN – WEIGHTED CRITERIA OF THE PERFORMANCE-ORIENTED MODEL OF BUDGET ALLOCATION

Coverage part	Criteria
Teaching (50%)	Degree of Capacity Utilisation (30%)
	Achievement: Number of alumni (30%)
	Regular study time: Number of graduates within the regular study time +2 / total number of alumni (30%)
	Internationality: Number of foreign students / total number of students (10%)
Research (45%)	Third-party funds: Third-party funds per scientific employee (10%)
	Publications: Number of published books, articles in research papers, monographies and lectures per scientific employee (33%)
	Internationality: Number of the Alex-Humboldt-Scholarship Holders and Awardees, number of stays of researchers of the TU Berlin in foreign Universities, numbers of foreign researchers staying at the TU Berlin per scientific employee. (16%)
	Scientific Work: Number of Ph.D. graduates, architecture competitions, postdoctoral research qualifications (Habilitation) and number of tributes/appraisals per scientific employee (16,30%)
	Scientific Organisation: Number of organised conferences, consultant activities, publisher activities and scientific advanced training per scientific employee (16,30)
Equalization (5%)	Share of women in the number of alumni (20%)
	Share of women in Ph.D. (20%)
	Share of women in Professorships (20%)
	Share of women in appointments for new professorships (40%)

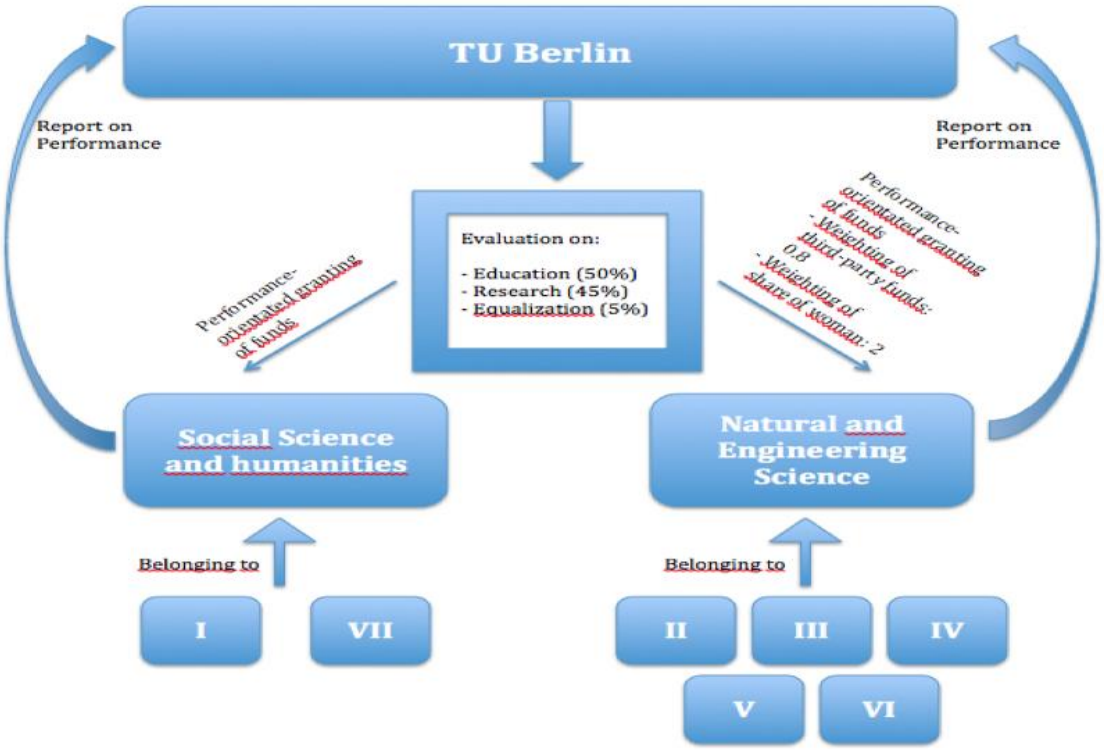
SOURCE: EVALUATION DER LEISTUNGSBEZOGENEN MITTELVERGABE AN DEN BERLINER HOCHSCHULEN (2009)

Research and teaching

An important prerequisite for the budget allocation is the definition and measurement of various indicators. A distinction is made between performance-oriented indicators and indicators that are independent from performance. The performance-independent indicators are fixed values, such as personnel (scientific and non-scientific), the general basic equipment (infrastructure, equipment, etc.) and individual parameters of the university. Performance-based indicators relate to the areas of teaching, research and policy or internal university objectives. In the area of

teaching, this is captured by statistical data on the number of students, the number of graduates and passed final examinations done in relation to the enrolled students. In the field of research, the common indicators are the amount of third-party funds, the number of doctorates and the number of publications. TUB's internal objectives of resource allocation are, for example, issues of equality and internationalisation. Among the three areas (research, teaching, equality), teaching is weighted most heavily.

IMAGE 51. TU BERLIN – ALLOCATION MODEL



Performance-related criteria and indicators are generally used to achieve or enhance certain control effects (e.g. the promotion of gender equality), provide an incentive scheme, or generate a performance assessment mechanism. Until 10 years ago, TUB still had target agreements, which were meant to fulfil this threefold strategic purpose. However, since the formulation of target agreements was based on negotiations between the faculties and the President's Office, it strongly followed a bottom-up principle. Since the target agreements provided no significant strategic tool for strategic performance planning, they have been considered as overhauled

and were abolished some years ago. An important feature of the model of internal budget allocation in place at TUB is that it does not provoke any debates about issues of distributive justice across the disciplinary boundaries. This is partly because the incentives provided through the model reward only outstanding achievements by applying the same parameters to all disciplines.

TU Berlin's model provides a good example of how a performance-oriented scheme of budget allocation is not necessarily conducive to polarising different disciplines. The interviewee confirmed that it is safe to assume that this is in part due to the strong position of the central administration and the strong position of the faculties.

Overall, the model fits well in the relatively consensus-based governance of TU Berlin, which is not following a pure top-down approach in applying performance-oriented criteria through the budget allocation.

SWEDEN

The Royal Institute of Technology, KTH

Internal budget distribution model at KTH

The university. Founded in 1827, The Royal Institute of Technology (KTH) is Sweden's largest technical university.

KTH is working with industry and society in the pursuit of sustainable solutions to challenges such as climate change, future energy supply, urbanisation and quality of life for the rapidly growing elderly population. KTH is active in research and education in natural sciences and all branches of engineering, as well as in architecture, industrial management, urban planning, history and philosophy. Almost two-thirds of the turnover relates to research.

Basic and applied research is performed side-by-side at KTH and interdisciplinary research is conducted in parallel with work in specific fields. KTH embraces academia and the public and private sectors working together. The university is active in

international research collaborations and participates in a large number of educational exchanges or joint programmes with universities and colleges around the world.

KTH's activities are separated into ten different Schools. Each of these is heading a number of Departments, Units, Centres of excellence and undergraduate study programmes.

The budget allocation model

First, it should be explained that in Sweden, the governmental direct appropriations to HE institutions come in two different streams, one for research and PhD training, and one for education on 1st and 2nd level (undergraduate education). The national distribution models for the two streams are different; there is one distribution model for research and PhD training, and another one for education. The funds distributed within both streams arrive at the institution as such (in practice to the rector), which then freely distributes the funds within the institution itself. When doing so, it is very common that again, different models are used internally for research and PhD training, and for education. At KTH, the total turnover in 2015 was SEK 4.8 billion (SEK10~NOK10~€1). Of this amount, the two streams of governmental grants (the direct appropriations) added up to approximately SEK 1.1 billion each for education at first and second level (undergraduate) and for research and doctoral studies. The rest, approximately SEK 2.6 billion, came as external funding.

Research and PhD training

For 2016, the rector at KTH distributed SEK 1,144m to the schools. SEK 944m of these funds were distributed through a model introduced in 2010, consisting of three parts, where the benchmark is that approximately 55% of funds will go to the schools as base funding, approximately 25% as performance-based allocation, and about 20% as strategic initiatives ("riktade medel"). The balance between these parts can vary between schools depending on history and other reasons. It has been observed that the strategic initiatives that continue over a long period have been reclassified to base funding.

The strategic initiatives are partly thematically allocated in accordance with the strategies stated by the KTH management. During 2016 priority is given to research infrastructure, faculty development and interdisciplinary initiatives, preferably cross-schools. Efforts should be linked to schools' development plans. KTH has also

invested in establishing the tenure track system that was introduced in 2010, which focuses on the positions lecturer and assistant lecturer ("lektor and biträdande lector"). These positions are often financed with strategic funding.

For 2016, the total base funding accounts for SEK 517m; the total performance-based funding accounts for SEK 221m, and the strategic initiatives accounts for SEK 206m. The SEK 1,144m to the schools also contains earmarked funds under the government's strategic research areas amounting to SEK 118m, the government's investment in the Science for Life Laboratory with SEK 66m and SEK 15m to platforms to promote inter-disciplinarity.

The performance-based part consists of number of PhD exams, the size of the external funding, and publications. For 2016, 70 percent was allocated based on the number of PhD exams, 20 percent based on external funding and 10 percent on publications. Besides the funds allocated directly to the schools, the rector keeps about SEK 40-50m to be used for co-financing of EU projects, and about SEK 20m for commitments and other upcoming needs during the year.

Bibliometric component of the model

The KTH model for funding allocation is intended to give incentive to the researchers of KTH to publish in highly cited journals. On behalf of the rector, the Unit for Publication Infrastructure (PI) at the ECE School has developed a journal indicator for allocation of research funds. The indicator rewards publication in journals, which are highly cited relative to the subject fields the journals belong to. It is combined with a volume measure: the number of faculty full time equivalents. This combination constitutes the KTH bibliometric indicator for funding allocation called BIFAKTH. Values of BIFAKTH are calculated per department. Values of the journal indicator are generated by PI, whereas values of the volume measure are generated by the Human Resources Department. The Finance Office then calculates the values of the combined indicator, i.e. of BIFAKTH. In 2015, the amount that was allocated by the model was SEK 21.6m. Allocation of funds occurs the year after the year of analysis. It should be noted that the bibliometric component of the model does not include citations, but only publications.

Example from a School

The allocation for research and PhD education to School A was, according to the contract between the school and the rector, SEK 137.4m in 2016. Of these, SEK 31.5m came as special funding to so-called Strategic Research Areas, something that the Swedish government has decided upon. The funds also includes strategic initiatives of about SEK 19m. The remaining SEK 87m was distributed to the school's departments as follows:

- SEK 800,000 per professor and SEK 500,000 per lecturer, about 48% of the total
- 10% directly on external funds, about 24%
- The school's own citation bonus, about 1%
- KTH's publication bonus, about 3.5%
- SEK 600,000 per PhD exam spread over 3 years, about 23.5%
- The change from previous year must not be greater or less than 10% of points 1 and 2.

Education at undergraduate level

A new model at KTH for allocation of resources to education at undergraduate level was introduced in 2015. The principle of the model is that the entire education grant from the government is distributed to the schools. The amount allocated to the schools also includes the estimated tuition fee income for students from third countries.

The model is linked to the way in which funds are allocated by the government to HE institutions, where the funds are generated on the basis of producing full-time students and annual performance. The funding KTH receives for full-time students is distributed according to a performance-based principle, where responsibility for providing a programme and for examining students are measured according to a certain formula. In addition, there are some funds for targeted initiatives, approximately 15 percent of the total funding for education. Part of the distributed funds is set aside (in fact returned to the central management) from each school for central functions and infrastructure for education, approximately 10 percent. One concrete example from a school is given below.

Comments

The distribution model that KTH applies corresponds in part to the features of the government's distribution of the direct appropriations to the HE institutions. The performance-based components for undergraduate education are relatively similar to those that the government applies on national level. For research, a relatively large share comes as base funding, in order to provide stability, and is complemented with a performance-based share and funding for strategic initiatives. The performance-based component builds on three clear parts, which mostly corresponds with what the government uses on national level. One difference is that KTH does not use citations. The performance-based component is however substantially larger than what the government has so far used. The share of strategic funding is relatively large for both education and research.

The model signals great importance for performance-based allocation. All academic staff at KTH need to show results in order to get funding, regardless of their duties. A certain proportion is kept at central level for strategic initiatives, not a large proportion but still substantial amounts of money. Of course, these funds are further distributed into the organisation, and then they arrive at departments, units and individuals. There is reason to believe that they mostly arrive at high performing corners of the university, so this is likely to primarily function as yet a performance driver. Co-funding for EU- projects is for instance found within this part. A particular detail may however work in the other direction. When calculating the bibliometric indicator, the publication volume is multiplied with the number of staff in order to get what is called BIFAKTH. This means that a high number of staff is in fact rewarded, something that has not passed unnoticed at school and department level. As one of the interviewees notes: "And at this place, people can count". This interviewee thinks that this indicator functions as a driver for establishing positions as assistant lecturer.

It can be noted that, despite KTH is featuring and has a history of cooperation with industry, there is no performance indicator that targets actual utilisation or cooperation with industry or society. Perhaps this is not needed due to the working climate and history at KTH. Many large (and smaller) companies in Sweden have since long time collaboration with researchers at KTH, and they are active in the planning of curricula at the engineering programmes as well. A comparison can be made with other technical universities in Sweden: while KTH uses three performance-based parameters, other ones use up to five.

The model also builds on performance contracts between the schools and the rector. These contacts are negotiated and agreed upon annually. This means that the performance parameters are reported year by year. If there are significant differences on department and school level from one year to another, this will have certain impact on the budget allocation. For instance, if there are relatively many PhD examinations one year, but relatively few the next year, the budget allocation to a given department may swing back and forth to quite some degree. For distribution within a school, longer periods can be used, as shown in the example of School A.

Much is happening at lower levels in the organisation. Some schools receive more, or less, of each part in the model, and this may have relatively large impact on a given school and its departments and units. The share of base funding from central level to the schools is a counterweight to this. Substantial monitoring responsibility and power is given to the deans of the schools, who can and should distribute the base funding to create stable conditions and long term planning within the school. The base funding is also meant to provide freedom at school level to act as they find fit.

Adjustments have been made of balances or other parts of the model, whenever this has been called for. To that extent, there is flexibility to the model as such. While it is perceived to be reasonably transparent as a whole, the education stream is less transparent. The description here is somewhat simplified - there are certain characteristics and features in it that are difficult to explain unless one is fully aware of the national Swedish funding system for undergraduate education - for the staff members who need to take all details into account, it is in part complicated.

Concluding reflections

The three case studies (France, Germany, Sweden) show a range of alternative internal budget distribution models. The cases point towards a few fundamental types of budget models. One is based on performance contracts between university and ministry. Such contracts can contain set targets regarding results and performance both for research and education, and for other operations at the university as well. Another type is a clear results or performance oriented model, where a very large proportion of the funding is distributed according to performance-based criteria. In such a model, it is important that the indicators that are used to assess the performance cover all kinds of operations that occur at a university; research, education, collaboration, utilisation, etc. They need to be transparent, and recognised

and accepted by the staff. A third model is a combination of base funding, PBF, and strategic funding. The relation between these three components and other details can differ, but all components need to be reasonably large.

Essentially all models in our case studies (in part with the exception of Paris-Sud) contain a combination of base funding, PBF, and what we call strategic funding, which can be allocated beside the two other streams. Given the fact that the governmental appropriations are relatively large, it seems important for a university to arrange for a sufficiently large component of performance-based distribution within the institution. Good results should be rewarded, through the organisation.

KTH applies a relatively clear distribution of base funding, performance-based funding (based on performance in both research and education), and a substantial proportion of strategic funding. This creates both stability and predictability for schools and departments, and a climate where good achievements - performance - are indeed awarded. The strategic funding provides the schools and in part the departments with freedom to choose independently where to put extra resources.

The French case is (still) highly centralised and less flexible, and with limited room for manoeuvre for the university, both on top management level and at lower levels in the organisation. There is some strategic funding, but it is of limited proportion and also comes with limited possibility to use as the institution itself wishes. The system allows for both transparency and reasonable planning horizon, but as it relies on contracts with the ministry, which could change for the next contract period, it does not allow for long-term stability.

The cases provide ground for suggesting that there are a few choices to make regarding a new budget distribution model. It is to us quite clear that a distribution model primarily consists of 1) a stream of base funding, which builds on size one way or the other, like FTEs, number of students, or similar; and 2) a stream of PBF; and 3) a stream of strategic funding for particular purposes and prioritised investments. The first choice is which proportions these three main streams should have.

Yet another choice is whether the distribution model should be copied also from faculty to department level, or if it should only apply from central level to faculties. TU Berlin provides an interesting mirror in this respect, as its model in practice only distributes funding from the faculties to lower levels at the university, and mostly

funding to specific areas of research. The professorial chairs are funded through base funding on a needs basis from central level, and the funding of the teaching is included in this stream. The actual redistribution of funding and the strategic distribution is thus devolved to faculty level.

Data about the previous topics are derived by: Technopolis Group, *Universities' internal budget models*, Final Report, 26 June 2016.

8. BUDGETING AND ACCOUNTING IN UNIVERSITIES

Broader acceptance of institutional accounting practices is best achieved by embracing a trust-based approach, implying greater flexibility in accepting different eligible costs across the EU. Universities are established institutions with professional financial management procedures that are regulated and audited at national level. In several EU countries, full costing methodologies allowed beneficiaries' costs to be calculated transparently and accurately, which led to national public and private funders being able to accept institutional accounting and management practices.

Following in the footsteps of national competitive research programme funders, EU policy makers should rely increasingly on the accounting practices developed by the university sector in several European countries. This could be achieved by providing a choice of options, which could include certification of the national methodology used to report the costs incurred under EU funded projects

This Report aims to contribute to promote broader acceptance of institutional practices as a major step towards simplifying EU funding. It presents a selection of accounting and management practices developed at institutional or system-level in various European countries. Most use sound costing methodologies as an effective management tool that ensures financial sustainability, internal control and transparency at institutional level. National public funders therefore accept them when it comes to reimbursing competitive research programme costs. At European level, recent changes to the Financial Regulations applicable to the general budget of the Union opened up concrete opportunities to establish procedures that involve a broader acceptance of standard accounting practices.

The benchmarking is focused on the following case studies: France, Germany, Poland, The Netherlands, Sweden and UK-England.

9. PART III: CASE STUDIES

9.1. FRANCE

National funding bodies were largely responsible for promoting the development of a common university costing methodology in France. The issue was placed in the context of universities' financial sustainability, institutional management and steering. The Ministry of HE and Research also regards full costing as a tool that provides long-term forecasting information based on a better understanding of costs. The Ministry is currently promoting a unified cost accounting methodology across the country.

In 2005, the development of full costing was initiated by the AMUE (*Agence de Mutualisation des Universités et Établissements*), CPU (the conference of French university rectors) and a group of university representatives, including presidents, accountants and financial officers. In 2006 and 2007, the launch was followed by a pilot phase. Although AMUE proposed a methodology, tools, techniques and joint training, each university developed its own approach for its specific context. The specific 7th Framework Programme (FP7) cost reimbursement methods shaped the development and implementation of the methodology at some institutions. Projects were usually initiated by university leadership, implemented by financial officers and managers, and frequently overseen by the vice-president of financial affairs. In the late 2000s, fewer than 20 universities had reached an advanced stage of implementation. In January 2011, the EUIMA-Full Costing workshop gave added momentum to implementation plans.

In 2013, the Ministry for HE, Research and Innovation coordinated the development of common guide- lines for university costing methodologies. The need for greater transparency in calculating the cost of educating students drove this renewed process. The Directorate-General for HE set up working groups with the National Rectors' Conference and the Conference of Deans of French Schools of Engineering, along with other Ministry units. In 2014, these groups defined a common structure (types of activities, disciplinary groups) and common methodological guidelines on how to measure costs. These aimed to explain the objectives, major guiding principles and methodological choices made by the working groups. However, it was

not a procedure describing how to implement the full costing methodology, which remains specific to each institution.

A monitoring committee bringing together the various stakeholders representing the diversity of the university community issued opinions and recommendations on the outcomes of the working groups. A steering committee, an institutional decision-making body associating the main decision-makers from the Ministry of HE and Research (Cabinet, DGESIP, DGRI, DAF, Conference of University Rectors and Conference of Deans of French Engineering Schools (CDEFI)) validated the project.

In 2015-2016, a group of institutions successfully tested the methodology, leading to discussions between the Ministry and the sector about its further implementation. This momentum also built on an increased focus on the development of university lifelong learning programmes, and the associated need to adequately cost and price such activities.

As delegated acts of French legislation reasserted the importance of analytical accounting at universities, the Ministry organised deployment based on five-year contract negotiations it holds with every institution. In 2017, 30 universities due to negotiate their contract in 2018-19 were included in the project. A series of workshops were held to help them adopt the methodology, along with direct monitoring and support from members of core project team (university practitioners experienced in analytical accounting). The Ministry intends to repeat the process with the other university groups over the next five years.

The goal is to generate and exploit comparable income and expenditure data, consolidated at national level, and that allows institutional benchmarking. In the absence of additional resources, the Ministry has adopted an approach of regulatory requirement combined with training and sector support.

Working groups with a greater focus on contractual research costs were set up to address the issue of flat rates for indirect research costs, as well as to develop a refined methodology to support the distance and blended learning business model.

Institutional accounting practices accepted by national research programme funders

The information included in the following table refers to the practices implemented at the University of La Rochelle.

IMAGE 52. COST CALCULATIONS

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
1. Staff cost calculations		
a. Description of eligible staff cost elements and calculation methods (salary components, sick leave, holidays, pension, etc.)	Statutory staff salaries are not eligible for funding from French Nat'l Research Agency and French Agency for the Environment. All elements of contract staff salary are reimbursed, incl. employer's charges, sick leave, holidays, pension, etc.	Statutory staff are eligible for partial funding under H2020, making the programme far more generous than French Nat Funding Agency. As precautionary measure, projects bonuses and complementary teaching time are not included in staff cost calculations, although some bonuses are eligible under H2020.
b. Use of unit costs or other options to reimburse staff costs	N/A	N/A
c. Staff cost calculation period (actual, past year, etc.)	Staff costs are calculated for the actual period of the claim.	

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
d. Description of how staff time is accounted for / recorded (time sheets, profiles, fixed time, contract, etc.)	As contractual staff work on the project full time, no timesheets are requested. The project name and acronym are specified in the employment contract.	As a precautionary measure, times sheets are also required from contract staff working on H2020 project. It would ease project follow-up if this this could be avoided.
e. Statements and documents to justify staff costs	Researchers' employment contracts and agendas would be consulted in the case of any audits.	
2. Other direct cost calculations		
a. Equipment, depreciation amounts and time, etc.	Equipment purchase is eligible for French National Research Agency funding. Other Agencies only allow depreciation calculations.	
b. Infrastructure recorded as a direct cost, depreciation, etc.		

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
c. Other Direct Costs		It is often difficult to justify Other Direct Costs given the variety of costs included in this category. The cost of justification is often disproportionate to the financial issues at stake as a result. Allowing beneficiaries to choose whether to declare Other Direct Costs as either actual costs or a flat rate could reduce reporting time for small partners.
3. Indirect cost calculations		
a. Description of the calculation of indirect costs including cost drivers	The French Nat'l Research Agency sets indirect costs at 8% of funding. The French Agency for Environment sets indirect costs at 20% of the total costs (including permanent staff).	The University of La Rochelle's total indirect costs are 24%. The Horizon 2020 flat rate is therefore sufficient to cover the indirect costs incurred.
4. Internal invoicing		

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
a. Description of internal invoicing procedures	Internal invoices are issued based on a pricing system established and validated by University Board. Costs are identified and traceable, but reporting is simplified, as funders do not require a detailed description of the items of the internal invoices.	Using by of researchers of technical platforms does not imply fees reimbursement, included indirect and ineligible costs. The internal invoice costs are calculated according to internal accounting practices.

Auditing and Control	Description of National Funders' Auditing Practices	Similarities and Inconsistencies between EU and National Audi ting Practices
1. Description of procedures, audit types, reporting deadlines, etc.	Universities can be audited on site. Standard audits are usually performed by Ministry of Finance.	

9.2. GERMANY

Germany's federal nature and the different legal frameworks and practices in the 16 federal states influenced the development of a harmonised cost accounting methodology at German universities and made it difficult to evaluate the degree of implementation. These developments were only occasionally coordinated at federal level through working groups and guidance on the implementation process. Additional resources were generally not available.

Full costing methodologies are mainly used to demonstrate the full costs of externally funded research and consequently obtain higher reimbursement, notably for indirect costs. This also contributes to an enhanced understanding and aware- ness of costs at German universities and to more effective use of funds. However, two major challenges were detected: time allocation and the fact that not all costs are included in university accounting systems (due to different rules and regulations on building ownership, building maintenance costs, depreciation and pensions).

University accounting has been significantly influenced by two major developments in Germany. The first attempt to introduce cost accounting was made by the heads of administration working group, which formulated a system of cost accounting rules in 1999. Most German universities approved these rules at a meeting held in the University of Greifswald in the same year, resulting in the Greifswald Resolution. These principles were subsequently accepted as a basis for good practice in university accounting by the German Institute of Chartered Accountants. They were also approved by the Standing Conference of Ministers of Education and Cultural Affairs. However, the federal finance ministers, who are responsible for the accounting systems used in their respective state, did not grant final approval, and the Greifswald Resolution was therefore not applied universally. Nevertheless, it significantly influenced university accounting in Germany.

The cost accounting framework developed by the Federal Ministry of Finance in cooperation with the 16 State Ministries of Finance also shaped accounting practice in German HE institutions. Based on this framework, 16 different systems were developed. However, the framework primarily addressed public administration, not HE needs. To make the situation even more complex, some states were already moving from "cameralistic" (i.e. relating to public finance) to double-entry bookkeeping.

FP7 and the Community Framework for State Aid for Research, Development and Innovation (RDI Framework) were major drivers in the debate on the implementation of full costing. Furthermore, many German universities' increasing engagement in external cooperation at national level led them to identify the need for appropriate costing methodologies.

Institutional accounting practices accepted by national research programme funders

The information reported in the following table refers to accounting practices at the Ludwig-Maximilians-Universitaat Munich (LMU Munich) and the Technische Universitaat Braunschweig (TU Braunschweig).

IMAGE 53. COST CALCULATIONS

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
1. Staff cost calculations		
a. Description of eligible staff cost elements and calculation methods (salary components, sick leave, holidays, pension, etc.)	All staff salary cost elements are reimbursed as accounted for by the institution.	Some elements are removed in order to calculate the hourly rate, as they are ineligible under EU rules (compensation for teaching activities, additional remuneration).

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
b. Use of unit costs or other options to reimburse staff costs	Reimbursement of costs actually incurred during the period, as recorded in the project accounts.	LMU has started to use unit costs for H2020 projects. However, this is not delivering simplification as the unit costs only apply to not teaching staff. This distinction is time consuming and creates uncertainty of cost recoverability. Moreover, the scheme requires the use of specific tools (timesheets, tools to calculate staff costs, training sessions, etc.). An application for the certification of

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
c. Staff cost calculation period (actual, past year, etc.)	Staff costs are calculated based on the actual costs incurred during the reporting period.	The Horizon 2020 project calculation period is based on the previous financial year.

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
d. Description of how staff time is accounted for/recorded (timesheets, profiles, fixed time, contract, etc.)	German universities have no staff time recording system in place. No proof of time worked is needed for nationally funded pro- jects. National funders such as the German Research Foundation (DFG) accept that universities charge the costs actually booked to the project, without requiring proof of actual hours worked (e.g. timesheets).	The EU policy of calculating working hours based on time sheets is not common practice. As a result, researchers make mistakes and controls are needed at all levels. Further-more, artificial solutions have to be created, for example, in the case of Principal Investigators involved in ERC funded projects. As German professors are not subject to any specific working time regulations, their work has

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
e. Statements and documents to justify staff costs	Project accounts.	Timesheets, pay slips, employment contracts, project accounts.
2. Other direct cost calculations		
a. Equipment (depreciation: amounts and time, etc.)	The table provided by the German Research Foundation (DFG) is used to calculate depreciation values.	H2020 projects accept LMU Munich and TU Braunschweig equipment cost accounting practices.
b. Infrastructure (recorded as a direct cost, depreciation, etc.)	Infrastructure costs are included in indirect cost calculations.	Infrastructure costs are covered by the indirect costs flat rate.

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
c. Other Direct Costs	Reimbursed according to national and regional regulations.	H2020 projects accept LMU Munich and TU Braunschweig accounting practices for travel expenses, consumables and other direct costs.
3. Indirect cost calculations		

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
a. Description of the calculation of indirect costs including cost drivers	Indirect costs are usually covered by a flat rate. LMU Munich estimates that its indirect costs are 20% - 45% of the direct costs, depending on the faculty. TU Braunschweig calculates that research or industry project indirect costs are 68% of the direct staff costs.	
4. Internal invoicing		

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
a. Description of internal invoicing procedures	LMU Munich usually calculates internally invoiced costs based on lump sums (cost per unit or hour, etc). TU Braunschweig usually calculates costs based on the material costs (e.g. consumables, material costs, equipment use).	LMU Munich requests proofs as part of its unit calculation method. TU Braunschweig records the actual cost in its accounts.
5. Other relevant elements for cost reimbursements		

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
		LMU Munich found it difficult to use the 'Third Party Resources' option under Marie Curie actions. The problem is particularly relevant for the University Hospital, which is defined as a third party that makes resources available to the university.

Auditing and Control
Description of National Funders' Auditing Practices
Audits are usually ex-post and undertaken by external auditors (either the funder itself or an audit company). Audits can be either financial or technical.
Similarities and Inconsistencies Between EU and National Auditing Practices
LMU Munich and TU Braunschweig both have a framework contract with an experienced EU funded project auditor for first level Horizon 2020 audits. The procedures involved are similar to national audits. LMU Munich regularly undergoes second level audits and has observed divergences in auditors' EU experience. They sometimes have little knowledge of the EU participation rules (for example, MSCA actions' exclusive use of lump sums). Furthermore, the auditors are not necessarily national companies and are not always familiar with German accounting practices, which requires additional explanations. These issues are specific to European projects and do not occur under national ones, where the auditors work in Germany and have a good knowledge of the funding rules and accounting procedures. TU Braunschweig received a second level Horizon 2020 project audit in 2017. The auditing procedure was more detailed than FP7 or national audits (e.g. standard practices like travel cost calculations were examined in depth) and all documents had to be provided electronically, making this audit more time-consuming. Sometimes it was difficult to comply with the auditor's requests. For instance, TU Braunschweig had to provide proof that employees had actually been paid. This information is difficult for the university to provide as such payments are issued by the state.

9.3. POLAND

FP7 and its cost reimbursement methods fostered discussions about the development of a full costing methodology in Poland. Universities, other FP7 beneficiaries, and the Polish National Agency for the Promotion and Support of applicants to the Framework Programme started debating the implementation of full costing at Polish universities. In 2007 and 2008, the Polish Ministry of HE announced plans to increase the budget for competitive grants and to reduce institutional core funding. This raised universities' awareness of the need to improve identification of the costs of their

activities. In 2009 and 2010, public discussions on HE funding and costs further underlined the need for transparent financial management.

Current developments also concern new funding models for HE Institutions. Since autumn 2018, Poland is undergoing significant regulatory changes, mainly through introduction of a new algorithm for calculating core funding. The Ministry intended to increase core funding but also substantially increased in parallel the size of competitive grants.

Despite discussions about the importance of full costing, no Polish universities except the University of Lodz have implemented this methodology. Lodz started implementing a comprehensive financial management system in 2012. The solutions used were based on the experiences of European universities participating in the EUIMA - Full Costing Project.

However, the University of Lodz initiative was not supported at system level by a coordinated approach or governmental support in the form of human or financial resources. The regulations on the financial management of HE that came into force in 2011 posed additional obstacles to the development of a coherent methodology. The legislation did not sufficiently consider universities' research activities, or the flat rate system used to calculate indirect costs both at national and European level.

Institutions responded to the 2011 legal provisions on financial management and accounting by prioritising the implementation of changes not linked to full costing. The need to adapt university IT systems poses another challenge as only the biggest public universities have implemented integrated management systems including HR, accounting and project management modules.

Box. Full costing methodology design at the University of Lodz

The starting point for developing the methodology at the University of Lodz was the creation of a project team to develop a Comprehensive Information System (CIS) for managing the University in the mid-2000s. The team included about twenty teaching and research employees. Accounting systems developed as early as 2007 covered the basic elements of financial accounting (accounts statements, financial reporting) and the assumptions and accounting system management methods, such as multi-task costs and results accounting, transferred prices used to value internal services and a

performance measuring system. The CIS was fully implemented at the University of Lodz in July 2012. This system assumes that the university carries out teaching and research activities in the form of projects (lasting one or several years). The university's second core activity is research, which includes scientific research and development and the pro- vision of research services. Research is carried out in the form of research projects with different implementation periods and funding sources. The university's third fundamental activity is organisational processes, which are covered by project management, due to their specific nature.

The following processes were identified to measure the costs, revenues and profits of the university's various statutory tasks, in order to integrate them in future process-oriented management:

- Education
- Financial assistance (for students)
- Human resource management
- Infrastructure
- Logistics
- Marketing
- Research processes
- University development
- University management

The resulting multi-purpose system combines the functions of different cost systems, including:

- A standard marginal costing system (multi-step and multi-block)
- A standard full costing system (ABC) with separate cost statements for the basic university processes
- Project life-cycle costing

The system considers the university's hierarchical organizational structure. Responsibility for accounting is assigned at all management levels by designating the centres responsible for costs, gross margins and profits.

Bottom-up budgeting is implemented based on guidelines prepared by the top management.

Performance measurement for the entire university and for individual internal units is based on applying a balanced scorecard principle.

The new internal reporting structure was designed to be suitable for the decentralized management system (budget execution reports, multi-step profit and loss reports, parametric assessment reports in line with the balanced scorecard structure).

The info included in the following table refers to practices implemented at the University of Lodz (UL).

IMAGE 54. COST CALCULATIONS

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
1. Staff cost calculations		
a. Description of eligible staff cost elements and methods of calculation: salary components, sick leave, holidays, pension, etc.)	All the salary components calculated through the full costing methodology are reimbursed. Staff costs are calculated on an hourly basis and include the following cost types: • Gross remuneration • Compulsory employee social insurance • Other mandatory benefits • Some indirect costs from the internal unit that employs academic teachers	UL is able to apply institutional practices for calculating costs incurred by different types of projects funded by national authorities, EU programmes (including H2020) and the private sector. The university's full costing system can be adjusted to calculate the costs of any research project. If a project requires a

		different accounting procedure, the change can be implemented in the system in the first full costing model calculation. Costs will therefore be calculated and integrated accordingly into the IT system.
b. Use of unit costs or other options to reimburse staff costs	N/A	The institution did not apply for unit cost certification (CoMUC) under H2020.
c. Staff cost calculation period (actual, past year, etc.)	Actual project costs are calculated annually as they depend on both salaries (which are constant) and the number of classes (which varies monthly). The UL is only able to calculate actual costs at the end of the year (particularly for teaching projects) as the method of calculating academic staff costs is based on transfer prices rather than actual costs.	N/A.

Auditing and Control	**Description of Nat'l Funders' Auditing Practices**	**Similarities and Inconsistencies Between EU and National Audi- ting Practices**
1. Description of	The same bookkeeping	In some cases EU auditors

procedures, audit types, reporting deadlines, etc.	system is used to provide information to national and European auditors.	required documentation justifying exact price of equipment, however the system only stores actual costs, meaning that factors such as depreciation are already taken into account.

9.4. SWEDEN

Swedish universities have developed their accounting practices based on a full costing model. The SUHF model (where SUHF stands for Association of Swedish HE Institutions) has been used at all Swedish universities and university colleges since the 1st of January 2011.

Its introduction was coordinated at national level and developed in cooperation by university management, financial officers and representatives from important research funders. The most important drivers for change came from inside the institutions, as full costing was needed as a strategic management tool, as well as for decision-making and improved internal control. There was also a need to improve accounting principles and achieve long-term financial sustainability. An important external factor was the need to be able to provide accurate and transparent information about indirect costs, to restore the confidence of funding organisations and allow them to understand these costs. Reimbursement rules in the first years of FP7 also played an important role.

The SUHF model is based on budgeted rather than actual costs. Corrections for cost deviations must be made retrospectively to reflect actual costs. Each institution uses different time allocation methods, but these are generally based on management estimations, rather than time records.

National public and private funders supported the adoption of the model. Although the government did not provide any financial support for its development, governmental research funding bodies accepted the method and adopted new financing principles. The Swedish Research Council and the Wallenberg Foundation

(one of the largest private research funding organisations in Sweden) fully accept institutional accounting practices for actual staff costs allocated according to the time commitments to research projects.

No formal agreement to certify the SUHF model for indirect cost calculation was reached under FP7. Stakeholders from different universities discussed the SUHF model with the EU audit office. The auditors pointed out SUHF model shortcomings with regard to the calculation of indirect costs based on budgeted rather than actual costs. The teaching and research split was also deemed as not auditable.

The information included in the following table describes accounting practices at Lund University and the University of Stockholm.

IMAGE 55. COST CALCULATIONS

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
1. Staff cost calculations		
a. Description of eligible staff cost elements and calculation methods (salary components, sick leave, holidays, pension, etc.)	Employees receive the monthly salary defined in their contract. Staff costs can be divided into the following categories: _____ _ Cost Element Individual salary Employer contributions Sick leave Holiday Payroll tax Pension Occupational health care	The various staff cost elements are usually eligible for EU project reimbursement, with some exceptions. The flat rate used to calculate some pension fees has caused problems during audits. The use of flat rates is a standard accounting procedure for all government agencies that receive invoices from the National Government Employee Pensions Board (SPV). Auditors have not always accepted the cost of occupational healthcare provision, despite the fact that

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
	Wellness contribution Calculation Method Actual cost Actual cost and flat rate Actual cost and flat rate Flat rate Actual cost, annual payment	employers are obliged to provide this by the Work Environment Act. The wellness contribution has also caused problems on some projects as auditors and/or programme officers have not always deemed it eligible. Under nationally funded projects, each employee can claim wellness contributions (up to a certain limit set by the organisation) when they provide receipts to justify the cost incurred.
b. Staff cost calculation period (actual, past year, etc.)	Salaries are recorded monthly in the HR system. The Swedish funding agency allows universities to report the salary recorded for a project in their accounting system without any obligation to create and/or provide further documentation.	For EU funded projects, staff costs can be calculated using two different methods. The first option involves calculating salaries based on each closed financial year. This option requires adjustments from the national model because: (a) salaries increase yearly and change can create discrepancies between the info included in the project financial statement and the internal project accounting system and (b) the institutional system was not designed to calculate

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
		salaries on annual basis, and so further calculations using external tools are necessary. The second option involves calculating salaries on monthly basis. This option requires considerable administrative work as monthly salaries usually fluctuate due to holiday payments and salary increases.
c. How staff time is accounted for / recorded (time sheets, profiles, fixed time, contract, etc.)	A researcher is expected to work 1700 hours / year. Swedish funding agencies do not require justifications of the amount of time staff work on a given project. Local union agreements on teachers and researchers working hours can differ between universities.	EU funded project time accounting / allocation requires the creation of timesheets and the calculation of an hourly rate that divides annual staff costs by 1720 productive hours/year. The actual salary costs calculated using the internal accounting system cannot be reported to the EU. Eligible salary costs must be calculated based on hourly salary costs and timesheets. Timesheets are not used to record time for other projects.
d. Statements and documents to justify staff costs	National funders require Swedish universities to submit a cost statement	Timesheets are only used for EU projects and in some cases, EU auditors rejected Excel files as a

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
	showing internal salary calculations. They accept this cost statement as proof of staff costs.	reliable time recording system.
2. Other direct cost calculations		
a. Equipment, including depreciation	Swedish Nat'l Financial Mngt Authority (ESV) provides guidelines on equipment cost reimbursements. For instance, an item is considered equipment if it costs more than 25,000 SEK and has a life expectancy of at least 3 years. Depreciation is calculated monthly. Internal guidelines set depreciation rules and the depreciation periods for different types of equipment.	
b. Infrastructure (recorded as a direct cost, depreciation, etc.)	Nationally funded projects record infrastructure costs under different accounting categories: depreciation, energy, maintenance,	EU funded projects require infra-structure unit costs to be calculated based on the actual costs from the 2 previous years and actual use for the project.

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
	salaries	National funders do not request or use unit cost calculations.
c. Other Direct Costs	Other Direct Costs are reimbursed based on the actual costs incurred (except subsistence costs for which flat rates set by the Swedish Tax Authority apply).	In principle, no adjustments are required to submit a claim for Other Direct Costs. However, deducting VAT from researcher travel bills is particularly demanding from an administrative point of view.
3. Indirect cost calculations		
a. Description of the calculation of indirect costs	Indirect costs are calculated according to the SUHF model and based on: a) Direct salaries b) Direct salaries and running costs Indirect costs calculated using the SUHF model vary considerably between HEIs and departments within a single university.	Since the methods vary significantly between HEIs, it is extremely difficult to assess whether the 25% of direct costs flat rate used by EU funders is sufficient to cover actual indirect costs incurred. SUHF collects and compiles annual university statistics. In 2016, the total average percentage of indirect costs on total direct research costs was 19.6%.
4. Indirect invoicing		
a. Description of internal invoicing procedures	Internal invoicing for salaries is calculated by adding social security expenses and SUHF indirect costs	H2020 requires substantial administrative work to calculate unit costs based on

Calculation of the Different Cost Items to be Reimbursed	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
	to the monthly salary. Annual budget calculation for use of laboratories is invoiced to users. Internal invoices for goods and services do not include indirect costs.	actual eligible costs for the use internal invoices. Internally invoiced costs are often subsidised for internal users and are not calculated yearly. The question of how internal invoices will be audited also creates uncertainty.

Auditing and Control	Description of National Funders' Auditing Practices	Similarities and Inconsistencies Between EU and National Auditing Practices
1. Description of procedures, audit types, reporting deadlines, etc.	The Swedish National Auditing Office usually audits universities annually. Their audits focus more on processes, policies, internal management and control than specific project accounting.	EU auditors are used to require the following documentation: • Timesheets • Proof of what each employee worked on each month • Invoices (Swedish institutions use e-invoices) • Bank documents to prove that a specific cost has been paid, which is hard as a single institute makes several thousand transactions a week • Proof that social security contribution were paid for a specific employee. This procedure is problematic

		because of the high number of employees.

9.5. THE NETHERLANDS

Most universities have implemented full costing methodologies in the NL. Drivers for implementation included the terms and conditions of contract research, which offer institutions that can identify the full costs of their activities a better cost recovery rate, and the need for reliable financial information to support internal decision-making. The Dutch Government has not required universities to implement full costing despite their considerable financial and operational autonomy. In 2007, driven by the FP7 and its cost reimbursement methods, all Dutch universities agreed to respect a set of specific principles in developing their full costing methodology. On the advice of the Association of Universities in the Netherlands (VSNU), these were approved by the individual universities. The aim was to secure a set of common definitions and to achieve comparable full cost rates.

However, each university has since worked individually on designing and implementing a full costing methodology without support or guidelines from the national authorities. This has resulted in a very diverse situation. Most universities now use a full costing methodology, which allows them to identify the costs of most of their activities. However, at many institutions the system is not integrated into the financial system and runs in supplementary systems. Some institutions have implemented a very sophisticated methodology that also allows them to use full costing to make strategic decisions.

HEIs informally exchanged experiences and good practices very actively when developing full costing. These exchanges specifically addressed principles of time allocation, ways to separate indirect costs for teaching and for research, the relevance of specific cost drivers and the overall model into which the chosen parameters would be integrated. However, there was some reluctance to develop the system further, as this would require additional changes to financial systems and a change of institutional management culture.

In 2012, a coordinated initiative explored whether the national research council would accept full costing methodologies. This was considered another potential driver for further improvement. However, the national research council had still not accepted

full costing methodologies at the beginning of 2018. Universities that have implemented full costing as standard have achieved better cost recovery rates for some contract partners, increased cost awareness at all levels of the organisation, and identified opportunities to reduce costs.

University of Amsterdam: founded in 1632, approximately 33,000 students, over 5,000 staff. Comprehensive university.

Staff costs are by far the biggest expense. As salaries are paid monthly, these costs are time-driven by nature. Most non-staff costs related to the facilities they use are also time driven (e.g. rent, energy, cleaning, depreciation, interest, etc.). Therefore, measuring the time spent on (academic) staff activities was believed to be the most suitable key for allocating (most) university costs.

However, since Dutch universities are not obliged to state the (full) costs of teaching and research separately in their annual report, there was previously little pressure to implement a time allocation system. Universities reported cost elements (staff costs, material costs, etc.) and cost centres (faculties, support units, etc.). There was no need to report the final cost categories (teaching, research and other activities).

The situation changed when research contracts began representing a considerable proportion of universities' activities. The need for a system that separated the costs of the different activities became more urgent, as most research contracts required a detailed report of the project costs incurred. Most universities in the Netherlands started to develop a system of time distribution (some were more detailed than others).

In the 1990s, the University of Amsterdam started applying a simple procedure to the payroll system output: a proportion of a project employee (involved in a contract project with specific cost reporting conditions) salary was separated out and charged to a separate project account, according to the proportion of time spent on the project under the project contract.

In the course of time, the university noticed two disadvantages to this approach: a) it did not reflect the actual time spent and b) it only charged direct staff costs (gross salaries) to projects.

Most contract partners do not accept pre-calculations or assumptions: they are only

willing to reimburse costs based on actual data, which reflects the cost of actual time spent. Some contract partners accept values based on full costing. The initial simple system's inability to accommodate these two principles led the University of Amsterdam to redesign completely its costing system.

This redesign process recognised that it was useful to know the full costs, based on time allocation for all staff for all activities (not only contract research). The university therefore implemented a costing system in which staff time is the central cost indicator. In this system, contract researchers can record the actual time they spent on projects with the required level of detail under the contract conditions. This system is presented to them in the form of an employee self-service web-based portal. At the same time, timesheets are generated for all other academic and support staff, based on the data collected about the time assigned to their different activities, as agreed in their appointments and work schedules. As a result, information on the time spent by all staff is provided, whether this information derives from actual entry by the individual employee, or automatic generation by the system in the background based on planning data.

This dual time recording system is directly integrated in the HH.RR. system, the project system and the financial system. This allows the University of Amsterdam to charge the full costs according to the appropriate salary level of each individual plus the relevant full cost rate components, to the accounts of each individual project or activity (teaching, research), regardless of the nature of the funder. The full costs of each activity can therefore be compared against the available budgets, for both contract and regular activities.

As a result, information on cost objects can also be included in the university's annual financial report, even though this is not mandatory in the Netherlands. The information gained helps the University of Amsterdam play a leading role in discussions about cost recovery and ways to implement policy decisions with financial implications with its partners (Ministry of Education, National Research Council, other contract parties). The time recording system is an essential part of the University of Amsterdam's full costing methodology and has been certified for use in FP7 by the

European Commission.

Institutional accounting practices accepted by national research programme funders.

The information included in the following table refers to practices applied at the University of Amsterdam.

IMAGE 56. COST CALCULATIONS

Calculation of the Different Cost Items	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
1. Staff cost calculations		
a. Description of eligible staff cost elements and calculation methods (salary components, sick leave, holidays, pension, etc.)	Full costs can be divided into direct and indirect components. The direct component is defined as the salary (scale / step under the university's collaborative work agreement), social security contributions and holidays.	The direct component is used as the unit cost under H2020. FP7 used the complete full costs. In the NL, the direct component (or actual salary) is used for the national research council and full costs are used for national government grants.
b. Use of unit costs or other options to reimburse staff costs	The direct component of the full costs (cf. point 1.a.) is used as the unit cost for H2020.	Dutch universities found it difficult to obtain unit cost certification under H2020. University of Amsterdam continues to use the same system based on direct unit costs and should obtain approval by recent EU audits.
c. Staff cost calculation period (actual, past year,	Staff costs are calculated for the actual period of the claim.	No adjustment necessary.

Calculation of the Different Cost Items	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
etc.)		
d. Description of how staff time is accounted for/recorded (timesheets, profiles, fixed time, contract, etc.)	Time spent by staff is the central cost indicator in the full costing model implemented at University of Amsterdam. Info on the time spent by all staff is provided by self-service web-based portal, provided by actual data entry by the individual employee, or automatic generation by the system based on planning data.	No adjustment necessary. All contract researchers record actual time spent.
e. Statements and documents to justify staff costs	Print screens from the HR system, appointment letter and certified timesheets.	No adjustment necessary.
2. Other direct cost calculations		
a. Equipment (depreciation)	Depreciation of equipment in contract research is equal to duration of the contract.	Under H2020, the standard depreciation time of 60 months is used for all equipment worth over 10,000 euros, except IT equipment.
b. Infrastructure (as a direct cost, depreciation, etc.)	Infrastructure costs are calculated as indirect costs.	No adjustment necessary.
c. Other Direct Costs	Other Direct Costs are calculated as actual costs,	No adjustment necessary.

Calculation of the Different Cost Items	Description of the Accounting Practice Used	Can Nationally-accepted Practices be used for EU Funded Projects
	based on invoices and staff expenses claims.	
3. Indirect cost calculations		
a. Description of the calculation of indirect costs including cost drivers	Indirect costs are calculated using the full costing model applied at the University of Amsterdam.	In 2015, 25% of University of Amsterdam's indirect costs were covered by the EU project flat rate; in 2016 it was 23% and in 2017 it was 18%. In 2015 part of EU funded projects were covered by FP7, under which the UoA claimed full costs.
4. Internal invoicing		
a. Description of internal invoicing procedures	N/A	N/A
5. Other relevant elements for cost reimbursements		
	N/A	N/A

Auditing and Control	Description of National Funders' Auditing Practices	Similarities and Inconsistencies between EU and National Auditing Practices
1. Description of procedures, audit types, reporting deadlines, etc.	The National Research Council does not audit individual projects. Other national grant providers require a standard audit if the amount awarded is over 125,000	The EU requires a factual finding report instead of a standard report. Audit reports are therefore more

	euros. Reports are due 6 months after the end of the contract.	expensive and time consuming. More information is needed to justify costs, i.e. participant lists and meeting notes. The EU requires reports to be sub- mitted 60 days after the end of the contract.

9.6. THE UK - ENGLAND

What budgets do they set in the University?

Currently, the University formally creates budgets and monitors them via the Cambridge University Financial System (UFS) for three areas of activity:

- Chest income and expenditure
- Research grants and contracts
- Buildings

Departments are free to establish local budgets for any activity but there is no facility to record these budgets in UFS.

Chest budgets

Most departments receive some central funding from the University. This central funding is known as "Chest" budget or allocation. This is a department's share of income collectively earned by the University as detailed below:

- Block grants for Teaching and Research from HEFCE and Teachers Development Agency (TDA)
- Fees paid by students
- Investment income from the University's general Trust Funds
- Other Income including the profit transfer from Cambridge Assessment.

The Chest share of research overheads

The process by which departmental chest budgets or allocations are set each year is detailed under "How and When does the University set its budget?".

In general, chest budgets relate to one financial year and funds are distributed annually, at the beginning of the University's financial year. The exception to this is Non-recurrent Grants that are awarded throughout the year on a needs basis.

IMAGE 57. SOF OF GENERAL LEDGER MODULE OF UFS

SoF Code	SoF Name	Main Usage
AAAA	Chest Non-Pay	Recurrent funding for consumables and other non-pay items.
ABAA	Chest Stipends	Recurrent funding for the pay costs of academic and academic-related staff.
ACAA	Chest Wages	Recurrent funding for the pay costs of assistant staff.
A*** Others	Special Expenditure	Specific to Institution.
AHAA	Equipment Grants	General departmental equipment.
A***	Non-recurrent grants	As specified in the letter awarding the grant.

SoF Code	SoF Name	Main Usage
EBAA	Unpaid Leave of Absence Savings	Budget equals saving in pay costs made by a chest-funded member of staff taking Unpaid Leave of Absence e.g. an academic who is granted a Royal Society Fellowship.
FABM	Incentive payments for non-professorial staff	Recruitment incentive payments for non-professorial staff.
FACF/FACE	Vacation Study Grants	Expenditure on field trips and vacation study.

Budgets in UFS can be either positive or negative. A Chest expenditure allocation is entered into UFS as a positive budget whilst an income allocation or expected saving would be entered as a negative budget.

Research grant budgets

The budget for a research grant or contract is set when the grant or contract is awarded. All applications for research grants and contracts must now be costed on 'x5' on a Full Economic Cost (fEC) basis.

More information on the costing process is available from the ROO or on the ROO website.

Budgets for Research Grants are input into the Grants module of UFS by ROO for the whole life of the grant, generally extending over several years. More information on the setting, monitoring and controlling of research grant budgets can be found in the Research Grant Chapter of the Financial Procedures Manual.

Budgeting for buildings

In the University, the majority of buildings related expenditure is managed by the Estates Management (EM) including routine running costs, refurbishment and construction of new buildings. Budgets for these activities are managed by EM directly. The budget for the routine running costs of the University's estate is set as part of the annual Planning Round,

Major investment, such as refurbishment or the construction of new buildings, has a separate approval process. Budgets will be prepared by EM or contractors employed by them and these budgets will be submitted to the Buildings sub-committee and Planning and Resources Committee (PRC) for approval. As part of this process, the expected contribution from the department to the cost of refurbishment or new building will be agreed. In general this will not be funded from a department's or Institution's Chest budget but from sources such as Donations or government funding such as SRIF/CIF.

How and when does the University set its budget?

Every three years Schools and all other University Institutions are required to produce Strategic Plans. These plans set the academic priorities and objectives for the Institution for the next five years and explain how they are to be implemented. The Strategic Plans are accompanied by detailed financial forecasts.

Although the Strategic Plans are generally only updated every three years, the financial forecasts are revisited annually in the Planning Round. The financial forecasts for Schools and all other Institutions are consolidated to provide a University level financial forecast that forms part of the Budget Report (formerly

called the Allocations Report). The second year of this forecast includes the Allocation of Chest Expenditure to Schools and Institutions. The first year is a revised estimate of activity in the current year.

To meet HEFCE's requirement that the University operates sustainably, the Budget Report is not just a consolidation of Schools and other Institutions' financial forecast submissions. This is because financial forecasts at this level represent their Institution's aspirations. The Resource Management Committee (RMC) and Planning & Resources Committee (PRC) will consider the University's total expenditure plans in the context of its estimated future income and may cap or limit some (or all) Institutional plans. This iterative review process generates the final numbers in the Budget Report.

IMAGE 58. STAGES OF THE PLANNING ROUND

Month / Year	Activity
Jun/Jul	Formal planning guidance issued by the Planning & Resource Allocation Office (PRAO)
Jul/Dec	• Finance Managers prepare the financial forecasts for Schools and other Institutions i.e. they cost the Institution's Strategic Plans. • The involvement of departmental finance staff in this process is determined locally by the Institution. • The financial forecast is reviewed and approved by appropriate authority, such as the Chair of the Council of the School or the Head of the Institution. • The financial forecasts are submitted to PRAO.
Sep/Oct	Actual income and expenditure for the last financial year is analysed by Financial Planning & Analysis (FP&A) into the same activity categories as used in planning.
1 Dec	**Submitted to PRAO** • Financial forecasts • Annual reports • Student number forecasts • Every three years - Strategic Plans
Dec	**FP&A** ▪ Review financial forecasts submitted ▪ Consolidate individual forecasts into a University level picture ▪ Create University wide analyses of income and expenditure **PRAO** ▪ Review Strategic Plans ▪ Review and consolidate forecast of non-financial data, e.g. student numbers

Month / Year	Activity
Jan/Feb	Strategic Plans are reviewed. • For Schools these meetings are chaired by PVC Planning and Resources • For other Institutions the meeting will be chaired by an appropriate person (e.g. the Fitzwilliam Strategic Plan review meeting is chaired by Chair of the School of Arts & Humanities)
Feb/Mar	**RMC/PRC** • Considers Plans • Agrees provisional allocations to Schools, other Institutions and Administered Funds
Apr	General Board and Finance Committee consider Plans and Allocations
	Council considers Plans and Allocations
May/Jun	Budget Report published in The Reporter
Jun	Budget Report graced
Jul/Aug	Departmental budgets produced by Finance Managers and passed to FP&A
Aug	Departmental budgets uploaded into UFS by FP&A

This part of the Report is based on the following researches and analysis:

European Commission, JRC, *European University Funding and Financial Autonomy*, European Union, Luxembourg, 2011
EUA, *Accepting University Accounting Practices under Horizon Europe*, 2018
NACUBO (National Association of College and University Business Officers), *Essential of University Budgeting,* 2018
URL: https://www.finance.admin.cam.ac.uk/policy-and-procedures/financial-procedures/ chapter-2-budgetary-planning-control/monitoring/.

9.7. ITALY

The present section of the Report regarding the Italian case study has to be integrated by the presentations delivered by the UNIGE (University of Genova) staff during the ToT sessions.

Changes to university autonomy since 2010 and recent developments

University governance partly reformed through the 2010 law, including changes on:

- executive head: selection criteria, dismissal procedure, fixed and non-renewable term of office composition and size of university governing bodies, with mandatory inclusion of external members in board/council
- revised academic structures.

A new national accreditation agency was established in 2011, the approval of which is required for all degree programmes before introduction, including doctoral programmes.

Developments in public funding modalities to universities, with the introduction of a performance-based and 'standard cost' component, which shares in the overall funding model, are rising annually.

Governance

The law specifies the selection procedure for the executive head. The law states that the candidates hold an academic position, as they must be full professors. Since 2010, candidates are not required to be employed by the university announcing the vacancy for rector. In practice, however, executive heads continue to be elected from within the same university. A ministerial decree confirms the appointment of the rector.

The law now fixes the rector's term of office to six years, without renewal possibilities. The term of office was not previously stated in the law. This provision for a single mandate of six years is one of the significant changes implemented since 2010.

The 2010 law also outlines the procedure to be followed by the university senate for the dismissal of the rector. Dismissal is still an internal matter for universities and with no external involvement. The provision was added to demonstrate greater accountability of the rector. Terms of office for executive heads have been extended so this additional provision provides a check on their position.

Italian universities have dual governance structures, with both board/council- and senate- types of bodies. Both governing bodies have been reduced in size and there have been changes in their roles and functions with the 2010 law. The board/council oversees the institutional strategy while the senate focuses on academic matters.

The board/council is composed of a maximum of 11 members, compared to 20 on average in the past. It must include the rector and student representatives, and universities decide on representation and proportions of academic and administrative staff. The law foresees that three members should be external (two if the council is composed of less than 11 members). There has therefore been a shift towards the compulsory inclusion of external members on the board/council. It was not previously compulsory for boards to have external members, although some did. Previously, external members were appointed by local authorities, whereas now universities may select external members autonomously. The profile of external members has also evolved, with universities required to appoint people with specific expertise such as business and financial experience. The general competences of members of governing bodies are stated in the law, and they should have professional standing. Other types of external members include academics from other universities, representatives from public authorities and from arts and culture. The university senate cannot exceed 35 members, all of whom are internal, and includes a minimum of two-thirds academic staff members, together with non-academic staff representatives as well as student representatives (15% of members).

The 2010 law also outlined a new role of 'General Director' in universities; this new title is a re-designation of the previous position of Administration Director. The role aims to increase the professional dimension of administration in universities. The General Director attends council meetings as an observer. This law also reformed university academic structures. There are now only departments in Italian universities and there are rules on the minimum number of academic staff required for each department. Universities may establish both for-profit and non-for-profit legal entities.

University autonomy in context

The HE law introduced in 2010 implemented a number of changes to the organisation and operation of Italian universities.

The ability of universities to now appoint external members to council and the removal of the requirement for the executive head to come from the same university are steps towards more efficient decision-making processes and greater autonomy. However, the inclusion of the procedure for the dismissal and the exact length of term of office of executive head in the law limit progress in scoring.

The introduction of a requirement for Doctoral degrees to have prior accreditation before they are introduced is a new development that diminishes university autonomy in academic matters, although prior accreditation was already required for Bachelor and Master's programmes previously.

There have also been a number of other evolutions including changes to public funding arrangements.

The government is moving towards greater PBF for universities, replacing the previous basic funding model. Performance is primarily measured through the assessment of research activities, with consideration given in addition to teaching activities and recruitment policies. Historical allocation patterns still make up the largest part of the public funding, complemented by an amount based on the standard cost per student. The performance-based component represents slightly over 20% of the overall public funding received by universities, with the perspective of reaching up to 30% by 2025.

Figures for Italy reported by EUA's Public Funding Observatory still exposed a significant decline in public funding (over 17%) where cuts concerned all areas of university activities. The proportion of university expenditures in GDP slightly decreased in the context of funding cuts and the flat economic growth over the period 2008-2015. The student numbers also declined by almost 9%, at a slower pace than the funding cuts.

Tensions on financial resources and the evolution of public funding modalities towards increased steering from external authorities are two important caveats when considering the autonomy of universities in Italy.

The Italian government approved its HE institutional governance reform in 2010 (Law 240/2010 or so-called Gelmini reform). The reform came because of intra-national pressures for change due to the perceived ineffectiveness of universities. There was in fact a climate of distrust and university de-legitimation at the time the reform was approved. In this context, the reform was justified mostly in ideological terms, indeed public policy documents usually spoke merely of improvement, and the reform design occurred without large open discussion about problems or potential solutions. The first draft of the law was developed by a few people appointed by the Minister who worked with senior ministerial bureaucrats. This draft was then shared, discussed and modified with party representatives and in the Parliament.

The result of this process was a conservative reform, especially when compared to the supranational prototype. Italian Rectors are elected by law for one non-renewable term of six years. The reform instead copied the supranational prototype by strengthening the Rector's role in institutional governance. The Rector remains an "ex officio" University Board and Academic Senate member and can chair both bodies. Thus, s/he has agenda-setting powers, performs managerial and directive tasks with the power of proposal on strategic direction and financial matters, oversees teaching and research activities, and is responsible for pursuing university objectives and day-to-day management.

Regarding the power allocation to central governing boards, Italian law maintains the traditional dual governance structure, which entails decision-making power for both the Academic Senate and Administrative Board. On the one hand, A.S. maintain the authority over teaching/ research matters, student services and can propose a motion of no confidence in the Rector (following it requires the approval of the Rector's electoral body). Therefore, the Italian reform increased the power of the A.B., which becomes the most important internal collegial governing body; it is responsible for strategic orientation and financial matters, ratifying the Rector's proposals on strategic plans, annual reports and budgets, the value of tuition fees and the purchase/sale of facilities.

The Gelmini reform also complies with the supranational prototype regarding board size and the selection method of its members. The Administrative Board is in fact capped at 11 members. Board members should be selected according to their individual skills (i.e., either managerial experience or cultural-scientific competencies). As regards the selection mechanism of Rector and students' representatives, the evaluation of individual skills as selection criteria suggests an appointment based selection method. The law also imposes a size cap at 35 members to the Academic Senate comprised of all internal representatives, of whom at least ⅔ are academic staff. Regarding the other members, Italian law establishes that at least two of the Administrative Board members are external if the board has fewer than 11 posts or at least three if it has exactly 11 seats. Therefore, the Gelmini reform toned down the request for a majority share of lay members in the main governing body to a minority compulsory presence. In addition, student representation is compulsory. Student representatives must comprise at least 15% of the members in both collegial

governing bodies, thus maintaining a share of the votes in each central decision-making body by law.

All Italian public universities have copied the national law with regards to institutional executive authority. The Rector's decision-making powers are detailed by law. As the Italian law prescribes election, but does not specify the electoral body, it allows partial flexibility in the selection method for the Rector, permitting both direct and indirect election. However, all Italian public universities have chosen direct election, with all the three university "estates" (academic staff, technical-administrative staff, students) holding the right to vote. Despite some degree of heterogeneity in the weights assigned to the vote of the different groups, academic staff hold the absolute majority in all public universities. The powers and tasks of central collegial governing boards (i.e., the Administrative Board and Academic Senate) are mostly defined by law.

Furthermore, there is heterogeneity among institutional choices regarding the size of the Administrative Board. Its average dimension is 10 members, ranging from seven (adopted by four universities) to 11 seats (adopted by 24 universities). Accordingly, 37 of the 61 Italian universities have amplified the national law requirement by adopting a board size lower than the cap. Regarding its composition, student representation is set at the minimum allowed by law in all universities (thus copying the national law). Lay members are also restricted to the minimum thresh- old in 55 of the 61 universities (copying). Though six institutions amplified the minimum share, only one of them (Trento) has assigned external members the absolute majority. Heterogeneity is again present in the choices regarding the selection method of board members since the Gelmini reform is not binding. Typically, the Academic Senate or a committee evaluates applicant profiles and proposes a pool of eligible candidates. Then, in accordance with the spirit of the reform, most universities have adopted an appointment-based system (indeed copying) wherein the choice either is performed by the Rector, the Academic Senate or involves both. However, 13 Italian universities have maintained the elective method when selecting internal representatives to the Administrative Board. Finally, no Italian university has adopted the status of a foundation, thus leaving out a possibility offered by the national law.

Staffing autonomy

All academic staff in Italian universities have civil servant status. Universities must recruit senior academic staff from an approved list, through a competitive process. Salaries for senior academic staff are set by an external authority since they have civil servant status. Dismissals are therefore strictly regulated as well. Universities cannot decide on promotion procedures for academic staff as the academic promotion system is regulated by law and operated through public competition only.

A majority of senior administrative staff in Italian universities have civil servant status; there are some administrative staff hired on private contracts but their number is decreasing. The major exception is the position of General Director who is recruited on a private contract as specified in law. Senior administrative staff who are not hired as civil servants can be recruited freely by universities on private contracts.

Salaries for senior administrative staff are nevertheless set by an external authority as the majority of administrative staff have civil servant status. Administrative staff salaries are regulated by a provision known as the 'collective contract for workers', which is different to the law that regulates academic staff salaries. The procedures for promotions (by public competition) and dismissals are strictly regulated by civil service rules.

Academic autonomy

Universities decide on overall student numbers and set admission criteria for students at Bachelor and Master levels. All new degree programmes must be submitted to a prior accreditation before being introduced. Universities are also required to submit new doctoral programmes to prior accreditation before they can be introduced, while this requirement used to apply only to obtaining funding. Universities can terminate programmes independently.

In 2011, the national accreditation agency (ANVUR, see below) replaced the former National University Evaluation Council. ANVUR was established with responsibilities covering both research, teaching and management, including responsibility for programme accreditation and oversight of research activities. Universities have limitations in designing the content of their academic programmes as the authorities specify some content of academic programmes. Universities can choose the language of instruction for all degree programmes.

Financial autonomy

Italian universities receive funding through an annual block grant with no restrictions on the allocation of funding.

Surpluses can be kept without restrictions. Universities can borrow money up to a maximum percentage of the annual public funding received, defined in law and depending on the financial situation of individual universities.

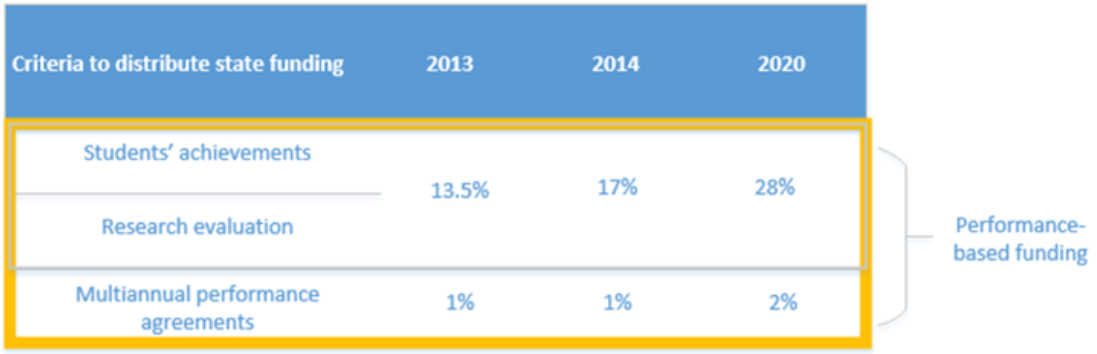
Universities can own and sell their buildings without restrictions. Universities can set the level of tuition fees at all levels. The overall amount collected from regular national and EU students may not however exceed 20% of the public funds received. Since 2016, universities have been authorised to distinguish between national / EU students and international students.

FFO (Ordinary Financing Funding)

2018: 7.318 billions euro, of which (inter alia): 4.329 as historical quota (funding quota based on the standard cost per student); 1.693 as performance based.

Italy - increasing the share of performance-based funding.

IMAGE 59. DISTRIBUTION CRITERIA



The Italian system to allocate public funding to HE is based on three main pillars: performance agreements, PBF and historical allocation. The share of these three pillars has evolved over time. In 2012, the government decided to gradually increase the share of PBF and performance agreements and to replace the historical allocation by an allocation based on the standard cost per student as of 2014.

The aim is to mitigate inequalities of the historical allocation whereby universities of the same size and profile received different amounts of public funds per student in the standard period. The standard cost per student is calculated taking into account four different components linked to research and teaching (standard number of professors and researchers), administrative facilities and staff, cost of infrastructures, and other more specific aspects (tutors, experts, etc.).

IMAGE 60. DISTRIBUTION CRITERIA

Criteria to distribute state funding	2013	2014	2020	
Based on previous allocation	77.5 %	74%	70%	Standard cost per student
Students' achievements	13.5%	17%	28%	Performance-based funding
Research evaluation				
Multiannual performance agreements	1%	1%	2%	
Other specific measures to increase quality and ensure sustainability of universities	8%	8%		
TOTAL	100%	100%	100%	

SOURCE: ITALIAN MINISTRY FOR EDUCATION, UNIVERSITY AND RESEARCH

Italy is an example of a system where the performance contract is not linked to the block grant distribution, but to additional funding.

Italy - performance contracts linked to additional funding

In Italy, the ministry and the universities conclude three-year contracts, whereby the achievement of the agreed objectives determines the allocation of additional resources. In 2013, the additional funds available were limited by law to a maximum of 2.5% of the public funding received by the university. The objectives can be linked to the following areas:

- Student services
- Internationalisation / interaction with the local environment
- Foreign staff

- Cooperation among universities
- Rationalisation via redistribution of courses at regional level

The university chooses among these areas and sets a starting point as well as targets; funding is partly provided at the beginning (to facilitate investments) and partly at the end of the period (upon meeting the targets).

Performance and evaluation

Project vs institutional funding.

According to the data collection in the PREF study Italy's public allocations for publicly performed research is allocated for 95% and 5% in the form of organisational level (institutional) funding and project funding respectively. Its share of organisational level (institutional) funding is thus comparatively (very) high.

Timing and method. In 2013, organisational level funding for public HEI and research centres amounted to approx. €60m of which €38m (62%) were allocated to R&D activities and €22m (38%) to administrative activities. The share of institutional funding allocated based on performance criteria rose from 7% in 2009 to 13.5% in 2013 and it increased in the coming years.

The Italian research system has traditionally been characterized by an institutional block funding allocation mechanism based on education metrics. Since 2014, important changes have been implemented towards more PBF mechanisms based on a metric informed peer review exercise called VQR, which was coordinated by ANVUR and completed in 2013. The ANVUR was created in 2010 following a law with the aim to improve the performance of the Italian research system. The first FFO (ordinary funding plans) introduced in 1993 did allocate a share of funding on input/output measures, though these were initially mainly based on input indicators such as student numbers. Assessments of research outputs have only been introduced in this funding allocation mix in years that are more recent.

At the end of 2014, the new ordinary funding plan (FFO) for universities was published by the Ministry of Education, Universities and Research (MIUR), and the "Stability law" on budget allocations for 2015 was approved by Parliament. These measures introduce a €150m increase of FFO over 2013 values that however incorporates 'merit funds' and other resources that were previously in separate budget lines. At the same time, the government spending review cuts €34m from university purchases of goods and services.

Modality of the assessment. The funding plan of MIUR introduces two new mechanisms for the distribution of funds among universities. First, 20% of the FFO is distributed among universities based on a "standard cost" per student, with a new (currently under test) mechanism of resource allocation. Second, 18% of the FFO is going to "better performing" universities, and is distributed in the following way:

- for 70% on the basis of their performance as assessed by ANVUR;
- for 20% on the basis of their recruiting policies (scientific production of the professors that are recruited or promoted as assessed by ANVUR);
- for 10% on the basis of the relevance of international teaching activities, combining presence of foreign students and courses attended abroad by local students.

The ANVUR based its assessment on the best research outcomes obtained by each organisations (universities and research institutes in the seven years from 2011 to 2017). The approximately 185,000 publications (of which 70% journal articles) by 130 organisations are evaluated partly by submitting those to international experts (in 20 rather than the previous 14 panels) who appraise their scientific quality, and partly by analysis of the citations received from third parties and examination of the impact they have made in their respective field of research. Apart from the quality and quantity of submitted output (weighted 50%), the final indicator of unit research quality is calculated also on the basis of the ability to attract external funding. Furthermore, the following requirements are considered: number of international collaborations, registered patents, quality of new recruitments and promotions, number of doctoral students, spin-offs, museums and archaeological sites, third-party activities and performance improvement compared to the previous surveys.

The reform of the accounting information system of Italians universities. A proposal of analysis of the new model budget

In the recent past, many Italian public organisations and subsectors tried to adopt accrual accounting, but their results were at best partial. Only in the HE system was it decided to adopt full accrual accounting and budgeting, following the approval of Law n. 240/2010 in December 2010, with 2015 being the deadline for the change. Full accrual accounting is an accounting system that incorporates costs and incomes at the time they are accrued and not at the time of their financial transactions. This system adopts a double-entry bookkeeping method that registers all the costs and

incomes occurred in the period of reference. For instance, this method uses accruals, deferrals and amortisation of assets to ascribe the correct proportion of costs and incomes to the financial statement.

The reform of the financial accounting system in Italian Academia. A first assessment of the University settings and performance through the analysis of the renewed financial reporting.

In the context of a wider redesign of Italian university information systems, the shifting from the cash to the accrual accounting approach represents a radical change on the ways to communicate financial and economic information to the stakeholders. At the same time, this also implies an overall transformation of Universities' internal and external relationships. Such revolutionary changes are determining, in fact, significant modifications both for organizational mechanisms and for decision-making processes. In particular, new priorities seem to shape the governance system, as well as the relationships between the Dean and the other institutional bodies: Board of Directors and Academic Governing Council, in particular. The introduction of new tools for external communication offers, therefore, a different representation of university's structure and performance, affecting the interactions between University and its stakeholders.

With the approval of Law n. 240/2010, accrual accounting has become mandatory for every university. The Ministry provisions set out precise implementation guidelines and fixed the deadline of 2015 for making the change. It is possible to register the choices made by the universities in determining the following five accounting principles: student fees, research funds, capital grants, library patrimony, and artistic heritage and collections.

The new annual accounting reports provide information that were not available in the previous cash-based reporting system. In particular, it is now possible to extrapolate how much institutional and so-called commercial activities contribute to the financial sustainability of the organization as a whole. However, some information has been lost due to the shift to the new system: Modified cash accounting enabled the analysis of the destination of resources, which is not possible with the new system that classifies expenses by nature. Thus, the new financial reporting system does not allow external stakeholders to detect the amount of resources used for research, teaching, or knowledge transfer. The new classification is more relevant for the

purpose of managing the organization than for the evaluation of the results - even social outcomes - achieved.

The report let emerge some common elements and some differences as well. The most important correspondences regard the capital structures and the sources of incomes: All universities have small debts and their incomes mostly depend on budget allocations from the central government. Thus, the framework allows confirming that Italian HEIs' financial sustainability is quite strong, although dependent on government funding.

The financial dependence on central government represents a disadvantage for universities: Because of their highly rigid cost structure, they can hardly bear reductions of incomes. Italian HEIs may adopt three strategies to enhance their financial sustainability in such a context: (a) domestic competition strategy, aiming at increasing the performance-related part of government's block grants; (b) financial autonomy strategy, based on the differentiation of incomes; and (c) efficiency improvement strategy, based on cost reductions. These strategies of financial sustainability are not mutually exclusive; nonetheless, findings reveal that some institutions are focused more than others on the strategy of self-sufficiency. Data reveal that Polytechnics and research-oriented universities are more proactive in generating their own incomes: In particular, universities specialized in doctoral and post-doctoral programs, as well as polytechnics, are more capable of attracting non-governmental funds, while other organizations strive to compete on the goals defined by the ministry in the performance-based funding system. This result is crucial to understand how institutions are reacting in assorted way to a common setting, characterized by sharp reductions in budget allocations from the central government.

In such a process, collection and assessment of data is important to recognize signals of a strategy of efficiency improvement. At this aim, Ministry is developing further analysis on data series referring to more financial periods and on financial statements of different financial periods in order to allow more precise exams of the effects of the different strategies on organizations' financial sustainability.

Quality Assurance

The development of quality assurance (QA) within the Italian university system constitutes an important case for those interested both in the dynamics of higher education reform and in the real effects of the NPM "revolution". The importance of the Italian case lies in the fact that the initial features of QA were introduced more

than 20 years ago, as part of Government's attempt to introduce a "steering at a distance" mode into the systemic governance of Italian universities. Furthermore, the complex dynamics of such reform has led to the gradual spread of QA throughout the university system, although the nature and goals thereof have been modified over the course of time.

QA in HE is guaranteed through both internal and external evaluation.

The internal evaluation is carried out by the Evaluation Boards of each university and by and joint teachers/students committees.

The most important authority appointed with tasks of external evaluation of the HE system is the National agency for evaluation of university and research system (ANVUR), public body under the surveillance of the Ministry of Education, University and Research (MIUR).

ANVUR is committed with the definition of criteria for the accreditation and evaluation, mainly based on self-evaluation reports of the University, mainly the so-called AVA document on "Self-evaluation, recurrent evaluation and accreditation".

The model implemented by ANVUR defines the following aspects of QA:

- requirements for the accreditation of universities and courses;
- quality assurance requirement;
- reference number of students for accreditation;
- indicators for the recurrent evaluation of research third mission and teaching activities at universities.

Periodical assessment surveys having accreditation aims are carried out and based on visits at universities from the Committees of expert of evaluation. Committees verify the quality assurance system of universities and a sample of courses. In particular, the committee verifies the following requirements:

- adoption of policies on teaching quality at university level;
- capacity of monitoring the application of quality policies at course level;
- actions aimed at the continuing improvement of the quality of courses;
- university decisional and monitoring power in assuring the quality of courses;
- a real QA system applied in the assessed sample of courses;
- QA policies in the research area;
- sustainable teaching based on the number of professors available.

At the end of each visit, the Committee releases a report, published by the ANVUR, on the compliance with the requirements for the periodical accreditation and

evaluation. The evaluation is based on criteria and indicators that measure the efficiency and the financial sustainability of activities and the results of single universities in terms of improvement of academic activities.

Views and Final Notes

The 2010 reform law supported improvements in the quality of management, with a more professional, strategy-oriented university board / council, although it maintains an elective model for the selection of the executive head. The clarification of the respective functions of the board / council and senate has reduced duplication.

Additional investment has been made in research funding by the government, although for Italian government HE is not yet a priority issue in recent years and the strengthening of mutual trust between the sector and policy-makers is still an open issue.

There is more freedom in theory for universities to employees' policy compared to other civil servant status but dismissal policies are still subject to wider labour market rules.

As regards the mandatory accounting system introduced by the above-mentioned reform law, the Accrual basis is a method of recording accounting transactions for revenue when earned and expenses when incurred. A key advantage of the accrual basis is that it matches revenues with related expenses, so that the complete impact of a business transaction can be seen within a single reporting period. The other method is cash basis.

Accrual accounting is an accounting method where revenue or expenses are recorded when a transaction occurs rather than when payment is received or made.

The method follows the matching principle, which says that revenues and expenses should be recognized in the same period.

Cash accounting is the other accounting method, which recognizes transactions only when payment is exchanged.

10. REFERENCES

ABE Y. – WATANABE S. P., *Implications of University Resource Allocation under Limited Internal Adjustability*, in "Theoretical Economic Letters", 2015, 5, pp. 637-46.

ARREGUI_PABOLLET E. – DOUSSINEAU M. – DETTENHOFER M., *An Analytical Framework to Assess the Governance of Universities and Their Involvement in Smart Specialization Strategies*, Luxembourg, JRC, 2018.

BALABONIENE I. – VECERSKIENE G., *The Peculiarities of Performance Measurement in Universities*, in "Social and Behavioral Sciences", 2014, 156, pp. 605-611.

BARR M. J. – Mc CLELLAN G. S., *Budgets and Financial Management in Higher Education*, London, Jossey – Bass Publ., 2018.

BENNETOT PRUVOT E. – CLAYES A. – ESTERMANN T., *Designing Strategies for Efficient Funding of Universities in Europe*, EUA, Brussels, 2015.

BENNETOT PRUVOT E. – ESTERMANN T., *University Governance: Autonomy, Structures and Inclusiveness*, in Curaj A. – Deca L. – Pricopie R. (2018).

BENNETOT PRUVOT E. – ESTERMANN T. – LISI V., *Public Funding Observatory. Report 2018*, EUA, Brussels, 2018.

BLEIKLIE I. – MICHELSEN S., *Political-Administrative Regimes and University Governance*, http://ecpr.eu/Filestore/PaperProposal/48e6c9c2-7460-43a9-aaf7-557bdb35e4cf.pdf last accessed 8-09-2019.

BRUCKMEIER K. – WIGGER B. U., *The Effects of Tuition Fees on Transition from High School to University in Germany*, in "Economics of Education Review", 2014, 41, pp. 14-23.

CAPANO G. – REGINI M. (eds.), *Come cambia la governance. Università italiana ed europee a confronto*, Roma, Fondazione CRUI, 2015.

CAPANO G. – PRITONI A., *Varieties of Hybrid Systemic Governance in European Higher Education*, in "Higher Education Quarterly", 2019, 73, pp. 10-28.

CEDEFOP, *National Qualifications Framework Developments in Europe*, Luxembourg, Publications Office of the EU, 2015.

CHECCHI D. – MALGARINI M. – SARLO S., *Do Performance-based Research Funding Systems Affect Research Production and Impact*, in "Higher Education Quarterly", 2019, 73, pp. 45-69.

CLAYES A. – ESTERMANN T., *Define Thematic Report: Performance Based Funding of Universities in Europe*, EUA, Brussels, 2015.

CUC (Committee of University Chairmen), *Report on the Monitoring of Institutional Performance and the Use of Key Performance Indicators*, CUC, Washington, 2006.

CURAJ A. – DECA L. – PRICOPIE R. (eds.), *European Higher Education Area. The Impact of Past and Future Policies*, Cham (CH), Springer Online, 2018.

DE DOMINICIS L. – PEREZ S. E. – FERNANDEZ-ZUBIETA A., *European University Funding and Financial Autonomy*, JRC European Commission, Brussels, 2011.

DONINA D. – HASANEFENDIC S., *Higher Education Institutional Governance Reform in the Netherlands, Portugal and Italy*, in "Higher Education Quarterly", 2019, 73, pp. 29-44.

ESCARRE' R. – DRIHA O. – MAKIENKO M. – DOUKAS D. – LINDITSCH C., *Advanse. Advancing University Financial Management Practices in South East Asia,* Graz, FH Joanneum, 2016.

ESTERMANN T., *University Autonomy in Europe*, in "University Education", 2015, 3, pp. 28-35.

ESTERMANN T. – CLAYES A., *Financially Sustainable Universities. Full Costing: Progress and Practice*, EUA, Brussels, 2013.

ESTERMANN T. – LISI V., *Accepting University Accounting Practices under Horizon Europe*, EUA, Brussels, 2018.

EUA, *Financial Sustainable University Full Costing: Progress and Practice*, Brussels, 2013.

EUA, *University Autonomy in Europe. Country Profiles*, EUA, Brussels, 2017.

EUA**,** *EUA's Public Funding Observatory 2018*, EUA, Brussels, June 2018.

EUA, *Accepting University Accounting Practices under Horizon Europe*, Brussels, 2018.

EUROPEAN COMMISSION, *Communication on a Renewed EU Agenda for Higher Education*, 2017.

EUROPEAN COMMISSION, *Eurobarometer n. 466. The European Education Area*, 2018 (http://ec.europa.eu/commfrontoffice/publicopinion).

EUROPEAN COMMISSION, JRC, *European University Funding and Financial Autonomy*, European Union, Luxembourg, Publications Office of the EU ,2011.

EUROPEAN COMMISSION/EURYDICE/EACEA, *National Student Fee and Support System in European Higher Education 2018/19*, Luxembourg, Publications Office of the EU, 2018.

EUROPEAN COMMISSION/EURYDICE/EACEA, *The European Higher Education Area in 2018*, Luxembourg, Publications Office of the EU, 2018.

EUROPEAN COMMISSION/EURYDICE/EACEA, *Structural Indicators for Monitoring Education and Training Systems in Europe in 2019*, Luxembourg, Publications Office of the EU, 2019.

EUROPEAN PARLIAMENT, *University Quality Indicators: A Critical Assessment*, European Parliament – Committee on Culture and Education, Brussels, 2015 (http://www.europarl.europa.eu/studies).

EUROSTAT, *Tertiary Education Statistics*, 2018.

EUROSTUDENT. EU., *The Impact of Fees on Students' Budgets*, EU - LLP, 2012.

FLISI S. – SANCHEZ BARRIOLUENGO M., *Learning Mobility II. An Estimation of the Benchmark,* Luxembourg, Publications Office of the EU, 2018.

FREIE UNIVERSITAT BERLIN, *At A Glance. A Short Portrait of Freie Universitat Berlin*, Berlin, FUB Office of News and Public Affairs, 2019.

GILLOT M. – ADNOT P., *Rapport d'information fait au nom de la commission de la culture, de l'éducation et de la communication et de la commission des finances (2) sur le bilan consolidé des sources de financement des universités*, Paris, Sénat, Session Ordinaire n. 547, 24 Avril 2013.

GORNITZKA A., *Executive Governance of EU Research Policy: An Organizational Theory Perspective,* WZB Discussion Paper, SP IV 2012-502, pp. 1-44.

GUGGIOLA G., *IFRS Adoption in the EU, Accounting harmonization and Markets Efficiency: A Review*, in "International Business and Economics Research Journal", 2010, 9, 12, pp. 99-113.

HICKS D., *Performance-based University Research Funding Systems*, in "Research Policy", 2012, 41, 2, pp. 251-61.

HOGSKOLEVERKET, *Certification of Swedish National Qualification Framework*, Stockholm, 2012 (www.hsv.se).

JOHNSTONE D. B., *The Financing and Management of Higher Education. A Status Report on Worldwide Reforms*, The World Bank, State University of New York, 1999.

JONGBLOED B. – KAISER B. – VAN VUGHT F. – WESTERHEIJDEN F., *Performance Agreements in Higher Education: A New Approach,* in Curaj – Deca – Pricopie (2018).

JONKERS K. – ZACHAREWICZ P., *Research Performance Based Funding Systems: A Comparative Assessment*, Publishing Office of European Union, Luxembourg, 2017.

LANVIN B. – MONTEIRO F. (eds.), *The Global Talent Competitiveness Index. Report 2019*, Fontainebleau, INSEAD, 2019.

LEHMANN E. E. – STOCKINGER S. A., *Entrepreneurship in Higher Education: The Impact of Competition-based Policy Programmes Exemplified by the German Excellence Initiative*, in "Higher Education Quarterly", 2019, 73, pp. 70-84.

MAHESHWARI S. N., et al., *Financial and Management Accounting*, New Delhi, Vikas Publishinghouse, 2018.

MICHAVILA F. – MARTINEZ J. M., *Excellence of Universities versus Autonomy, Funding and Accountability*, in "European Review", 2018, 26, 1, pp. 48 – 56.

Ministère de l'Éducation nationale, de l'enseignement supérieur et de la recherche, *Guide 2015 - Comité de suivi du 20 mars 2015, Connaissance des coûts des activités des établissements d'enseignement supérieur et de recherche*, Paris, 2015.

NACUBO (National Association of College and University Business Officers), *Essential of University Budgeting,* 2018.

OECD, *Education Indicators in Focus. Tuition Fee Reforms*, OECD, 2017.

OECD, *Sweden*, *Education at a Glance: OECD Indicators 2019,* OECD, 2019.

PASCAN I. D., *Measuring the Effects of IFRS Adoption on Accounting Quality: a Review*, in "Economics and Finance", 2015, 32, pp. 580-7.

PEROTTI L., *Economia e università. Il caso olandese*, Chess WP, 4/2010.

ROG R. – VAESSEN M., *IFRS Compared to Dutch GAAP: An Overview*, Amsterdam, KPMG, 2019.

SEEBER M. – LEPORI B., *Budgeting Practices in European Universities*, (http://www.researchgate.net/publication/318824154).

SOBANSKA I. – WENCEL A. – KALINOWSKI J., *Project Management in Universities - Accounting Payroll on the Example of the University of Lodz,* in "Social Sciences", 2014, 83, 1.

TAYLOR J., *The Assessment of Research Quality in UK. Universities: Peer Review or Metrics?* in "British Journal of Management", 2011, 22, pp. 202–217.

TECHNOPOLIS GROUP, *Universities' Internal Budget Models* (www. Technopolis group.com), 2016.

THE (Times Higher Education), *Methodology for Teaching Rankings 2019*, Times H.E. Europe, 2019.

THE WORLD BANK, *Report on the Observance of Standards and Codes on Accounting: Poland*, Washington, Clearence Center, 2016.

UKA, *Higher Education Institutions in Sweden. 2019 Status Report*, Swedish HE Authority, Stockholm, 2019.

UNESCO, Institute of Statistics, *Methodology of National Education Accounts*, 2016

UNESCO, *Higher Education in Asia. Expanded Out, Expanded Up*, Montreal, Unesco Press, 2014.

UNIVERSITIES UK, *University Funding Explained*, 2019.

UNIVERSITY OF ALICANTE, *Unigov. Financial Management in Higher Education Institutions*, 2014 (http://www.tempus.unigov.eu/).

UNIVERSITY OF AMSTERDAM, *Governance Model*, Amsterdam, University Policy Papers, 2012.

UNIVERSITY OF CAMBRIDGE, *Reports and Financial Statements 2018*, Cambridge, Cambridge U. P., 2019.

UNIVERSITY OF CAMBRIDGE, *Financial Management Information for the year ended 31 July 2018*, in "Cambridge University Reporter", Jan. 2019, CXLIX, 4, pp. 1-90.

UNIVERSITY OF WARSAW, *Annual Report*, Warsaw, University Publications, 2018.

WORLD ECONOMIC FORUM, *The Global Competitiveness Index. Report 2019*, WEF, Geneva, 2019.