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EUROPEAN PLATFORM
HIGHER EDUCATION MODERNISATION

FUNDING HIGHER EDUCATION: A VIEW ACROSS EUROPE



EUROPEAN CENTRE FOR STRATEGIC
MANAGEMENT OF UNIVERSITIES

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**FUNDING HIGHER EDUCATION:
A VIEW ACROSS EUROPE**

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THE MODERN PROJECT

European higher education institutions need to modernise their governance and train their leaders to operate in increasingly complex sets of interactions at the institutional, regional, national and European level. European policies call for universities to play a strong role in the Lisbon Agenda and in making Europe a strong knowledge-based economy. Although the need to train university leaders is so obvious, the supply of management support to higher education institutions, their leaders and managers is highly fragmented in Europe.

The MODERN project, European Platform Higher Education Modernisation (www.highereducationmanagement.eu), aims to create an open platform as a key instrument for innovation, state-of-the-art knowledge, dissemination of good practice and joint action on university leadership, governance and management for the professionalisation of the sector. MODERN will contribute to raising awareness in European higher education institutions on the strong need to invest in people, to support potential leaders, and to encourage management training at all levels (junior and senior, academic and administrative staff), with as background the aim to ensure their competitiveness to respond to external challenges.

Under the leadership of ESMU, the European Centre for Strategic Management of Universities, MODERN is a consortium of 10 core and 28 associate partners joining forces through a Structural Network under the EU Lifelong Learning Programme (ERASMUS). All project partners are institutions and associations active in the field of higher education management.

During the three years of the project (2008-2011), MODERN will map the supply of management development programmes and its adequacy to the demand, leading to the creation of a European portfolio of the provision of short and long term training programmes in higher education institutions and European associations.

The present report is the second in a series of five thematic reports which will be published on key issues related to current priorities in higher education management: governance, funding, internationalisation and quality assurance, regional innovation, and knowledge transfer. All five reports will be produced for each MODERN conference on the respective theme. This second report provides an overview of the state-of-the-art of funding reforms in European higher education. The report was written by Ben Jongbloed, CHEPS, Center for Higher Education Policies, University of Twente, MODERN project partner.

The MODERN project will further respond to the need for training in higher education by conducting a series of peer learning activities. These will serve as pilot initiatives to develop new offers for both higher education institutions and their individual leaders.

I would like to thank all our partners in the MODERN project for their valuable contributions in developing our European platform. It is with their strong support and significant expertise that we will together, during the three years of the project, build a powerful tool to support the modernisation agenda and the further professionalisation of higher education in Europe.

Frans van Vught
ESMU President
MODERN project leader
14 january 2010

1. INTRODUCTION

As the European nation states collectively pursue policies to integrate their economies, political systems and social structures under a broader, more powerful European Union, it is becoming increasingly clear that higher education is a critical component to fully realising Europe's potential. This very idea has given rise to a series of ambitious goals and objectives designed to ensure long term European pre-eminence as both a knowledge producer and transmitter. Since the late-1990s the rate of change in European higher education has accelerated to unprecedented levels, largely on the shoulders of three key developments: the Sorbonne and Bologna Declarations (1998, 1999), whose objectives are to make study programmes more compatible across European systems, and the Lisbon Strategy (2000), which seeks to reform the continent's still fragmented systems into a more powerful and more integrated, knowledge-based economy.

The Lisbon strategy was renewed in the shape of the New Lisbon Partnership for Growth and Jobs (European Commission, 2005), where 'knowledge and innovation for growth' have been determined as one of the three main areas for action. The contributions that universities are expected to make to the realization of Europe's goals were spelled out in several EC Communications, such as *The Role of the Universities in the Europe of Knowledge* (EC, 2003) and *Mobilising the Brainpower of Europe* (EC, 2005). The role for higher education was reaffirmed in the Commission's *Modernisation Agenda for Europe's universities* (EC, 2006). These communications highlight that education, research, innovation and the modernisation of higher education institutions are the main pillars of the Lisbon Strategy.

However, aggregate public investment in both education and research still lags behind that in the United States and it seems that EU member states' abilities to make further investments are limited. The investments differ significantly across countries and even more so across subnational regions (Dill and Van Vught 2010). Although state investments in research have grown, industry contributions grew only marginally. The political Lisbon summit goals are proving very difficult to reach, partly due to weak economic growth in the larger member states and due to the fact that the design and the implementation of the policy actions rely on the member states and industry. There is a gap between the political rhetoric about the knowledge society and the realities of political financial priorities (Dill and Van Vught, 2010). In short, there is a mismatch between aspirations and funding.

While there is a common belief that universities play key roles in the knowledge-driven economy, there is at the same time some disappointment with the performance of Europe's higher education institutions. Here, reference is frequently made to global university rankings that show a clear domination of American universities over European universities. Media attention for higher education performance increased dramatically with the release of two international university rankings: the *Academic Ranking of World Universities* by Shanghai's Jiao Tong University and the *World University Ranking* by the *Times Higher Education Supplement* (THES). Although the Shanghai and THES rankings were not designed to be aggregated into rankings of national HE systems, that is exactly what is done in some policy papers and research reports. In the *Progress towards the Lisbon Objectives* report of the European Commission (EC, 2008) the Shanghai scores are presented as the summary information on the global position of European universities. Some governments have implemented policies to improve the position of their national universities in the rankings. Some analysts and policy-makers have used the rankings to call for revisions in Europe's higher education funding and its governance regimes. In the report *Higher aspirations, an agenda for reforming European universities* (Aghion et al, 2008), the authors state that Europe is lagging behind the US and suggest it should increase the budgetary autonomy of its universities and increase higher education spending. Similar messages were expressed by other observers and policy-makers.

The Bologna Declaration, Lisbon Strategy and Modernisation Agenda have not been the only drivers of reforms in European higher education. In many countries a series of reforms were already underway in the 1980s and many current reform initiatives have their origin in this period. The changing role of the state vis-à-vis higher education institutions (i.e. in the form of enhancing institutional autonomy and stressing quality assurance and accountability) are well-known themes in the last two decades (Neave, 1988; OECD, 2003; Eurydice, 2000; 2008). The marketisation of higher education (Williams, 1995) – the application of the economic theory of the market to the provision of higher education – is a recurring theme in many of the governance reforms carried out over recent decades (Brown, 2010).

It is against this backdrop that we wish to look at higher education funding in Europe and the reforms that were implemented. Some of the topics we will address are performance based funding, performance contracts, targeted funding and project-based funding. Another topic is tuition fees. All across Europe, government still is the main funding source for higher education institutions. At the same time it is widely recognised that securing alternative, private revenue sources will be necessary in the years ahead.

With more than 30 countries, around 4,000 higher education institutions and 17 million students, the reality of higher education in Europe is necessarily diverse. Therefore we will only illustrate funding policies and funding trends by looking at a few European countries only.

This report is structured as follows:

- › The next section will look at funding from the perspective of governance and steering: funding as one of the instruments to make the higher education system achieve the goals of access, efficiency and quality in higher education. The section will also present some information on the degree of autonomy that higher education institutions have in financial matters.
- › The third section will present a discussion and some information related to one of the fundamental funding questions, that is: how much funding? In particular: how much public resources are made available and how much derives from private funding, such as tuition fees? The section also presents some comparative data for European countries.
- › The fourth section presents a classification of funding methodologies for the public funding of higher education institutions. Here the issues of marketisation and performance-based funding are discussed.
- › Having set the stage, the fifth section then takes a closer look at some of higher education funding mechanisms in use across (Western) Europe. It also touches on some of the funding reforms that have taken place and identifies some common trends across Europe.
- › Some data on the relative sizes of the revenue categories are presented in the sixth section for a set of European higher education systems. The funding environment and revenue composition of the European university has changed substantially over the recent decades and this has had an effect on the strategies of higher education institutions.
- › The seventh and final section returns to the debate on university reform that is currently going on in Europe. As indicated already, the European Commission plays a large role in the reform debate. This section presents some conclusions that are based on our observations of the trends in funding streams and funding methods.

2. FUNDING, GOVERNANCE AND AUTONOMY

Funding (or financing) is more than merely a mechanism to allocate financial resources to universities and students. It is part of the set of tools and other governance instruments that enforce common goals set for higher education (e.g. access, efficiency), set incentives for certain behaviour (e.g. competitive research grants), and attempt to maximize the desired output with limited resources. Funding of higher education is not an end in itself. Rather, it is a means to an end; it is an instrument used by public authorities to affect the behaviour of an agent or an organisation – say a ‘spending unit’. The funder (or ‘budget holder’) is expecting the spending unit to work on achieving particular outcomes. Funding is often the foundation of other governance instruments that enforce common goals set for higher education (e.g. access, efficiency). Funding sets incentives for certain behaviour, for instance through competitive research grants. The funding method as well as the size and composition of resources often will be geared to maximizing the desired output with limited resources.

Governance issues and funding systems are therefore often two sides of the same coin. How much autonomy and monitoring universities and other higher education institutions (HEIs) need in order to meet societal expectations is an important funding issue when it comes to autonomy in internal resource allocation, but it is a larger governance issue in terms of the balance of responsibilities of the HEIs and state. Funding is therefore not an isolated topic but a set of instruments to achieve the goals of higher education. As a steering instrument, the funding mechanism is part of the government’s toolkit. This toolkit contains four ‘tools’ (Jongbloed, 2004):

1. regulation (rules, laws);
2. funding (subsidies, grants, taxes);
3. public production (provision of goods by government-owned providers);
4. communication (information, persuasion).

Funding is one of the key intervention instruments – for government (ministries, funding councils) as well as university decision-makers (Executive Boards, deans, department heads). In higher education, regulation is related to topics such as standards for the quality of degrees (accreditation), the number of students admitted to public institutions and the freedom of higher education institutions to charge tuition fees and engage in various kinds of other income generating activities.

Having mentioned the possibility of governments to step into the market and to issue regulation immediately leads to the topic of deregulation. It is impossible for governments to monitor and centrally steer the activities of the managers and students in higher education institutions. It is no wonder then that many calls are heard to reduce the extent of government intervention and regulation. The growing complexity of our society strengthens the case for relying on markets to make the decisions (Jongbloed, 2004). Indeed the notion of ‘less government and more governance’ is strong and supported by several factors (De Boer et al., 2006).

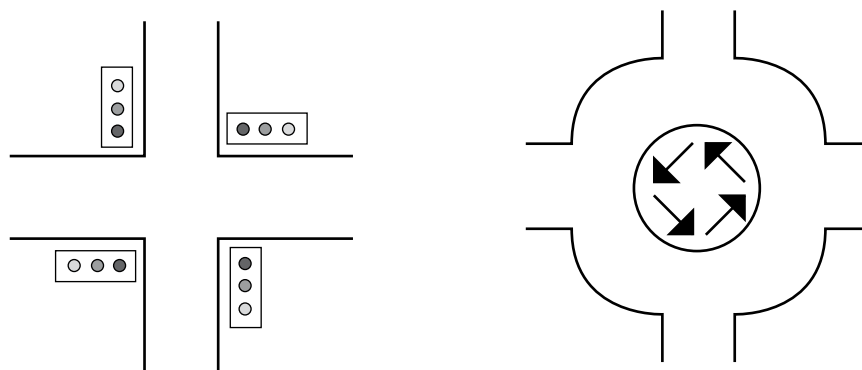
However, as illustrated by the recent breakdown of financial markets, free markets are also not a realistic option for most sectors of economic activity. In terms of the industrial organisation literature (Scherer & Ross, 1990) this means that only a ‘third best’ option is available. This option comes down to the leading principle of ‘Competition where possible, regulation where necessary’ (Kay & Vickers, 1988). Such an approach takes into account that market failures may occur and that national interests may be at stake, calling for government regulation. This principle comes down to a repositioning of government and striking a balance between competition and regulation. Such an approach may be interpreted as a step into the direction of a ‘state supervising’ system (Van Vught, 1989) where more room is established for market-type co-ordination. In a more market-type coordination system it is individual (i.e. decentralised) decision-making by providers and clients that is essential. The diagram below (Van Asseldonk et al. 1999; Jongbloed, 2004) pictures the difference between a state control and a state supervising system.

The left part of the diagram shows a traffic junction with traffic lights on all four corners regulating the flow of traffic. Creating acceptable queuing times requires substantial effort in terms of programming the traffic lights. One would have to first study the intensity of the traffic at that exact location, incorporate “real time” informa-

tion on traffic flows in response to the duration of red and green signals, install traffic lights for pedestrian crossings, and prevent the lights from turning green all at the same time. This is our analogy of the state control model.

The right side of the diagram pictures our analogy of the state supervision model: a roundabout. There are no traffic lights and only one simple rule regulating the traffic flows. That rule is: the traffic on the roundabout has priority. This system of co-ordinating traffic flows does not require an extensive information system. The flow of traffic is much smoother compared to the intersection / traffic lights system. But what's more important is that those participating in traffic feel more in control and interact directly with other participants. This provides a different set of incentives for behaviour.

Figure 1: Co-ordination systems: the crossing versus the roundabout



When it comes to the degree of freedom for individual higher education providers, the degree of institutional autonomy across Europe differs widely. However, one cannot speak of autonomy as such. The concept includes elements of financial, organisational, staffing and academic autonomy that need to be looked at separately. While one certainly can observe more market orientation, deregulation, and liberalization, a recent study by the EUA (Estermann & Nokkola, 2009) shows that there is a high degree of diversity in the framework conditions, regulations, and implementation processes governing the way in which Europe's universities operate. If we limit ourselves to the area of financial autonomy the following aspects need to be taken into account (Estermann & Nokkola, p. 18):

- > the extent to which universities can accumulate reserves and keep surplus on state funding
- > the ability of universities to set tuition fees
- > their ability to borrow money on the financial markets
- > their ability to invest in financial products
- > their ability to issue shares and bonds
- > their ability to own the land and buildings they occupy

Another aspect is

- > the type of public budget provided to the universities by the main funding authority.

The last item refers to the question whether this budget is a line-item budget or a block-grant (lump sum) budget. Block-grants (or lump sum funds) are financial grants which cover several categories of expenditure such as teaching, ongoing operational costs and/or research activities where universities themselves are mainly responsible for dividing and distributing such funding internally, according to their needs, across the various units and activities. By contrast, line-item budget means that universities receive their funding already pre-allocated to cost items and/or activities; therefore, they are not able to make allocation decisions, or only within strict limits.

The notion of autonomy also extends to the possibility for universities to generate external funds, from business and industry as well as from tuition fees collected from students participating in continuous professional education. Autonomous universities may generate resources through fund-raising or through measures to increase efficiency and will have the freedom to orient their strategy according to the available funds, for example focusing on specific research themes or shifting the balance between education and research. However, national systems can leave quite different degrees of freedom to individual higher education institutions in this respect; moreover, the composition of funds is likely to influence the internal governance of higher education institutions, since some instruments, like most grants and contracts, are attributed directly to individual units and thus tend to strengthen their autonomy and strategic capability in respect to higher education institutions' directions.

Table 1: Extent of autonomy experienced by universities

Type of budget	
Line-item budget	BG, CY, GR, LV, LT, RS, TR
Block-grant budget	AT, BE nl, BE fr, HR, CZ, DK, EE, FI, FR, HU, IS, IE, IT, LU, MT, NL, NO, PL, PT, RO, SK, SI, ES, SE, CH, UK
Ability to keep potential surplus from state funding	
Universities may keep surplus on state funding	AT, BE nl, BE fr, BG, HR, CZ, DK, EE, FI, FR, GR, HU, IS, IE, IT, LU, MT, NL, NO, PL, SK, SI, ES, SE, CH, UK
Universities may not keep surplus on state funding	CY, LV, LT, PT, RO, RS, TR
The setting of tuition fees	
No tuition fee	Austria, Czech Republic, Denmark, Finland, Iceland, Malta, Norway, Slovakia, Sweden, Cyprus*, Greece*, Scotland*, Slovenia*
Government sets fixed amount	Belgium / Wallonia, Bulgaria, France, Ireland, Netherlands, Slovenia, Spain, Switzerland, Turkey
Universities decide but ceiling set by public authorities	Italy, Portugal, UK: England*
University sets fees	Croatia, Estonia, Greece, Hungary, Latvia, Luxembourg, Poland, Romania, Serbia, UK
Fees set on basis of some form of Cooperation between university and public authorities	Cyprus, Belgium / Flanders, Lithuania
Ability to borrow money	
Universities are able to borrow money	AT, BE nl, BE fr, HR, CY, CZ, DK, EE, FR, IE, IT, LV, LU, NL, NO, PL, RO, RS, SK, ES, SE, UK
Universities are not able to borrow money	BG, FI, DE, GR, HU, IS, LT, MT, PT, SI, CH, TR
Ability to raise money on the financial markets	
Universities are not able to raise money on financial markets	BE nl, BG, CY, FI, FR, DE, IE, LT, MT, NL, NO, PL, PT, RO, RS, SI, SE, CH, TR
Universities are able to raise money on financial markets (to some degree)	AT, BE fr, CZ, DK, EE, HU, IT, LV, LU, ES, UK
Ownership of university buildings	
University	BE fr, HR, CY, CZ, EE, GR, IE, IT, LV, MT, NL, NO, PL, PT, RO, SI, ES, UK
Public authorities	BE nl, BG, DK, HU, LT, LU, RS, TR
Public real estate companies	AT, FI, DE, SE
Variations	FR, IS, SK, CH
Sale of university-owned real estate	
Universities may freely sell real estate they own	BE fr, CZ, EE, IT, NL, ES, CH, UK
Sale of real estate requires permission of public authorities	HR, CY, IS, IE, LV, MT, NO, PL, PT, RO, SK, SI
Universities may not sell real estate they own	GR

* indicates the situation for bachelor students

Source: Estermann & Nokkola (2009)

Some European countries increasingly treat their public service sector organizations as corporate enterprises with the goal to increase their efficiency and effectiveness by giving them more autonomy and at the same time asking for more accountability. There are a range of variations across sectors and countries and higher education is no exception (Pollitt & Bouckaert, 2000). Empirical evidence suggests that the rise of New Public Management (NPM), an organizational approach that supports the notion of public services being run as private businesses, has been influential in “modernizing” public services (de Boer et al., 2006). NPM is a generic tool for a set of instruments, rationales and changes that stress ‘value for money’, the introduction of (quasi) market conditions and, most importantly, the implementation of ‘management by objectives’ through the use of explicit contracts where organizational performance is linked to budgets. The enhanced institutional autonomy for universities and the stressing of performance has meant higher levels of accountability as well as more stringent and detailed procedures for quality assurance at the state as well as institutional levels. This may be described as ‘the rise of the evaluative state’ (Neave, 1988). NPM approaches therefore seek to emulate a market-like environment for publicly-funded institutions but they come along with a different type of accountability.

For the issue of higher education funding, the introduction of market or quasi market reforms meant that competition for funding was increased in order to enhance efficiency and quality. In light of this, many universities have started to concentrate their research activities, trying to build up a strategic profile and reap the benefits thereof. These changes have been widely documented (Geuna, 1999; Kaiser et al., 2001; Jongbloed and Vossensteyn, 2001; Benninghoff et al., 2005) and are all considered to be part of a changing paradigm towards a different governance model of higher education (Teixeira et al., 2004; CHEPS consortium, 2006). Universities have tried to enhance their competitive position and have sought to streamline their organization in order to cope with an increasingly complex environment. Developing institution-wide policies, strategic planning, and ‘identity-building’ are now regarded as survival strategies. Modern higher education institutions are increasingly behaving as ‘corporate actors’ that act strategically, not only within their own organizations, but also externally in the sense of seeking niches, distinctive profiles and engaging in dialogue with their external environment and stakeholders.

As indicated by Eurydice (2008), the discussion on the funding of higher education in Europe primarily focuses on the following broad items (p. 7):

- > increasing the public funding for higher education;
- > granting more autonomy to institutions for managing financial resources;
- > establishing direct links between results and the amount of public funding allocated;
- > encouraging the diversification of funding sources as well as the creation of partnerships with research institutes, businesses, and regional authorities.

Of the four topics listed here, the second was discussed in this section. The issue of the level of funding will be discussed in the following section, while the third and fourth topic will be treated later on in this report.

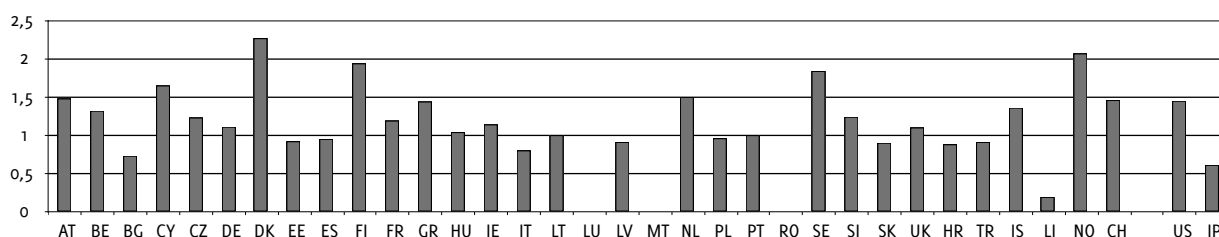
3. HOW MUCH FUNDING?

The question, ‘How much public and private funding should a country devote to higher education?’ is about the proportion of national wealth spent on higher education from the public and private purse respectively. This indicates what a country is prepared to invest in its higher education system. In the yearly Education at a Glance publications, the indicators B2.2 and B2.4 are devoted to ‘Expenditure on educational institutions as a percentage of GDP’, showing the resources from public and private sources allocated to Tertiary Education.’ Quoting from the most recent Education at a Glance 2009 publication:

This indicator provides a measure of the proportion of a nation’s wealth that is invested in educational institutions. Expenditure on educational institutions is an investment that can help foster economic growth, enhance productivity, contribute to personal and social development, and reduce social inequality. Relative to GDP, expenditure on educational institutions shows the priority a country gives to education in terms of its overall resource allocation. The proportion of total financial resources devoted to education in a country results from choices made by government, enterprises, and individual students and their families, and is partially driven by the size of the country’s school-age population and enrolment in education. Moreover, if the social and private returns to investment in education are sufficiently large, there is an incentive to expand enrolment and increase total investment. (OECD, 2009, p. 210)

Figure 2 shows the expenditure from public sources on higher education as a percentage of GDP for Europe’s economies as well as for the US and Japan. On average, the EU27 countries spend 1.13% of their GDP on higher education.

Figure 2: Public expenditure on Higher Education as % of GDP, year 2006



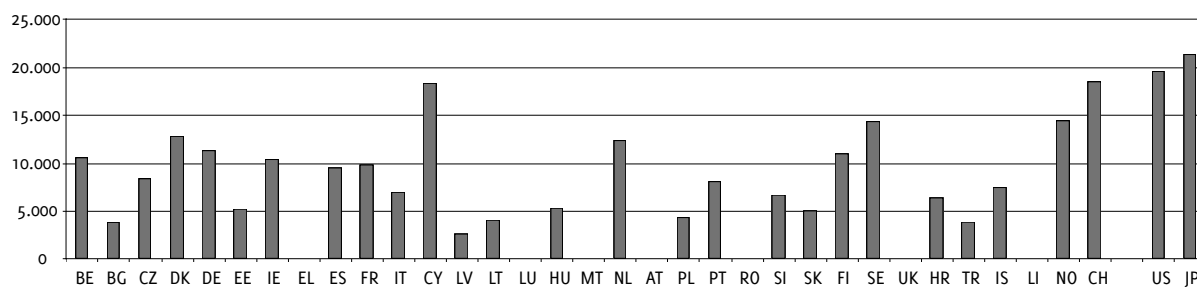
Source: Eurostat, Indicators on education expenditure – 2006, table 4.

The above graph and data do not include the private expenditure on higher education. From Education at a Glance data (OECD, 2009, p. 240) we know that in the year 2006 the EU19 countries² spend on average 1.3% of GDP on higher education, with 1.1% from public sources and 0.2% from private sources. If the private expenditure on higher education would be included in the above graph, the difference between the EU countries on the one hand and the US and Japan on the other would become apparent.

Figure 3 shows the public AND private expenditure on public higher education institutions expressed in Euros per student. Expenditure per student provides a measure of the unit costs of formal education. On average the EU27 countries spend 8,388 Euro per student in the year 2006 but there is quite some variation in spending per student. There is some evidence of a positive relationship between countries’ relative wealth (as measured by means of their GDP per capita) and expenditure per student.

¹ Please note: we will use the term Higher Education instead of Tertiary Education. International statistical conventions define tertiary education in terms of programme levels: those programmes at ISCED levels 5B, 5A and 6 are treated as tertiary education, and programmes below ISCED level 5B are not.
² These 19 countries are Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Ireland, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, Spain, Sweden and the United Kingdom.

Figure 3: Annual expenditure on public educational institutions per student in EUR PPS, at tertiary level of education (ISCED 5, ISCED 6), based on full-time equivalents; year 2006



Source: Eurostat, Indicators on education expenditure – 2006, table 2.

The proportion of total financial resources devoted to higher education in a country results from choices made by government, enterprises, and individual students and their families. This proportion is partially driven by the size of the country’s enrolment in higher education. The debate on the appropriate levels of spending is informed to some extent by information on the sizes of the social and private returns to investment in higher education. If these returns are sufficiently large, there is an incentive to expand enrolment and increase total investment.

Although a ranking of countries by annual expenditure on educational services per student such as the above is affected by differences in how countries define full-time, part-time and full-time equivalent enrolment,³ it is clear that there exists quite a substantial funding gap between Europe and the US and Japan. This funding gap is a major issue in the European Innovation Scoreboard 2007 (INNO-Metrics, 2007) and many of the EC Communications devoted to higher education and research. The gap almost naturally leads to discussion on the need for cost-sharing (Teixeira et al. 2006), meaning that students (or their parents) shoulder a higher part of the costs of their education.

OECD data shows that those countries that have been able to channel more than 2 per cent of GDP into tertiary education – the United States, Korea, Canada – all raise a substantial share of funding from private sources. Japan and Australia also have a high proportion of private expenditure. The average for the EU19 is 15%, with the UK, Portugal and Italy having the highest share (respectively 33%, 31% and 30%). The latter is due to the presence of tuition fees. As illustrated in Education at a Glance 2009 (OECD, 2009, p. 209), countries like Canada, Korea and the United States spend between 2.5% and 2.9% of their GDP on tertiary institutions. Korea, the United States, and Chile (1.7%) show the highest proportions of private expenditure at the tertiary level (between 1.4% and 1.9% of GDP). Relative to GDP, the United States spends over three times more on tertiary education than Italy and the Slovak Republic and nearly four times more than Turkey.

In continental Europe, students often pay only a modest fee or no tuition fees at all (see table 2). In six countries, fee levels are below € 500, while in eight other countries the average fees range around € 750 (Italy, Spain, Switzerland) or have reached quite substantial levels (above € 1,000 in the Netherlands, England, Latvia). In three of these countries the level of the fee is determined by the institutions themselves within bounds set by the government (Portugal, England, and Italy). Some EC communications and OECD policy documents hint at increased student contributions. For example, the Modernisation Agenda suggests that member states should “critically examine their current mix of student fees and support schemes in the light of their actual efficiency and equity”. Here, the communication is pointing to the positive rate of return as a justification to increase the investment level.

³ Some countries count every participant at the tertiary level as a full-time student while others determine a student’s intensity of participation by the credits which he or she obtains for successful completion of specific course units during a specified reference period.

Table 2: Tuition fees for BA-level students and their order of magnitude

No fees	AT, CY, HR, CZ, DK, EE, FI, EL, HU, IE, IS, LU, MT, NO, PL, RO, SK, SI, SE, UK-Sco
Low fees (below € 500)	BE, BG, FR, DE, LT, TR
Moderate to substantial fees (above € 500)	IT, PT, LI, ES, CH, NL, LV, UK-Eng

Source: Eurydice

In particular during times of financial crisis, most nations realize that their already overstretched public budgets can no longer fully meet the financial demands of continuously expanding higher education systems. Therefore, new financial steering instruments and a diversification of resources are required. Many countries are reviewing (or already have reviewed) their systems for funding higher education institutions with many having implemented reforms of one type or another. This report will not discuss funding reforms related to student finance (student support, cost sharing and tuition fee policies). We will restrict ourselves to funding reforms related to the funding mechanisms that affect HEIs. The remainder of this report is limited to reforms in the mechanisms for institutional funding.

4. MECHANISMS OF INSTITUTIONAL FUNDING

We now turn to the public funding of higher education providers and the mechanisms (the ‘funding models’) that are used by the public authorities for determining the budgets that are distributed to the universities and colleges in the higher education system. The mechanisms for public funding contain important incentives to achieve higher education’s three main goals, viz. quality, efficiency and equity. Funding modes and funding models not only serve to allocate resources for given ends, they are increasingly being used as governance or management tools.

We already pointed out that higher education institutions (HEIs) generally receive block grants (or lump sum funding), which means that they have a wide autonomy to decide on the spending of their public resources in their internal resource allocation. Over time, in more and more countries the way the size of this block grant is determined has changed, with most countries heavily relying on formula funding these days.

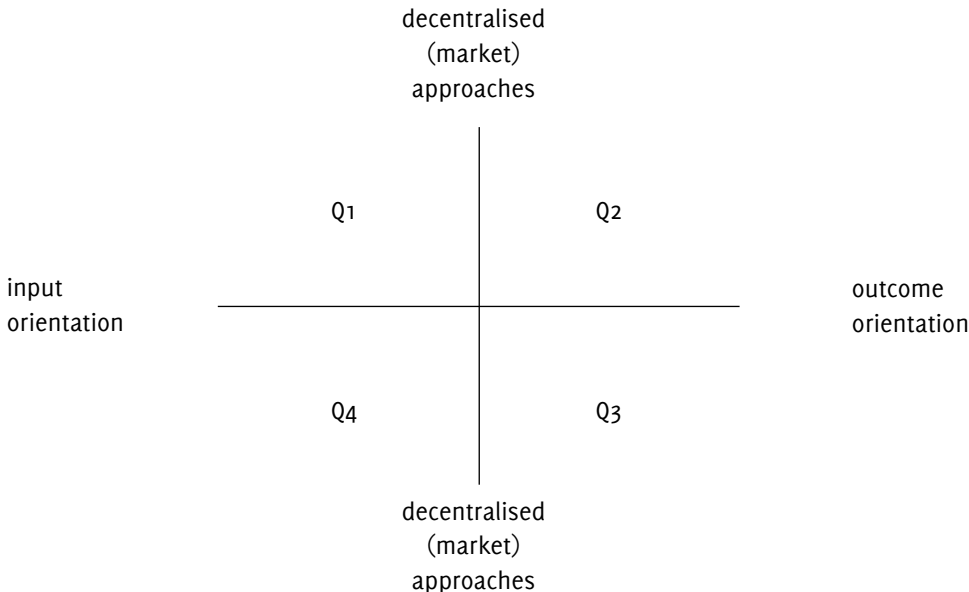
To provide a framework to discuss the reforms in the funding mechanisms in Europe, we present the graph below (Figure 4) that highlights two dimensions:

- (1) the degree of outcome (or performance) orientation, and
- (2) the degree of regulation.

The first dimension (shown by means of the horizontal axis) relates to the issue of whether institutional budgets are tied to specific teaching and research outcomes of the HEIs’ activities (performance-based funding). The second dimension (shown by means of the vertical axis) relates to the degree of competition implied by the funding mechanism. The question here is “Are funded student numbers or funded (research, degree) programs regulated (or planned) by central authorities, or are the funding flows driven by the decisions of the clients (students, private firms, research councils/foundations)?”

In Europe, we may see a gradual clockwise movement from the ‘north-eastern’ quadrant (Q1) towards the ‘south-eastern’ quadrant (Q3). This move coincides with the trend towards ‘steering from a distance’ (see section 2, above). The result of this movement is an increased reliance on market-type co-ordination mechanisms in the higher education sector - with decision-making left more to individual ‘agents’ (students, institutions) that choose on the basis of incentives instead of directives issued from above. Many central and Eastern European countries have rapidly reshaped their funding mechanisms and moved away from bureaucratic planning and negotiations-based approaches and today make use of more market-based approaches.

Figure 4: Classifying funding mechanisms



In higher education, traditionally governance and management resorted to a system where the funding of the providers of higher education and research was driven mostly by input measures like student enrolments or staff positions (Q1 in the above graph). In recent years, one may witness the introduction of competition, user fees, and the stressing of performance-based funding (see Jongbloed & Vossensteyn, 2001), where HEIs' government appropriations (their core funds) are increasingly based on measures of institutional performance (Q2 and Q3 in the above graph). For such a performance-based approach, two options, or a combination of the two, usually are in place:

1. budgets are based on actual results,
2. budgets are based on projected results.

An example of option 1 is where funding takes place according to a formula that is driven by the number of degrees or credits accumulated by students (quadrant Q2). An example that falls under the second option is the allocation of grants and contracts in a competitive process, such as through a research council that selectively awards project funds to proposals submitted by research groups (quadrant Q3).

Yet another example that also is part of option #2 is the allocation of public funding in accordance with a performance contract. This type of funding is shown as an option in the figure below. Performance contracts between individual universities and the relevant funding authority define institution-specific (or 'mission-based') objectives in line with national strategic priorities. Contracts with institutions as a whole can be either very broad, based on framework agreements, but can also be more detailed. In the latter case they may become more similar to the traditional approach to funding where specific budget lines are negotiated with the public authorities in a system of line item funding.

The 2008 OECD study on tertiary education states:

'one of the more pronounced trends in tertiary education around the world over the past decade or more: the shift to allocation mechanisms that are more performance-based. This shift can take several forms including setting aside a portion of funds to be paid on a performance basis; establishing performance contracts between government and institutions; creating competitive funds to stimulate greater innovation, higher quality, and improved management of institutions; and implementing processes in which institutions are paid on the basis of results, not inputs.' (Santiago et al., 2008, p. 197)

Table 3 shows some of the options for the public funding: formula-based approaches, contracts and project-based funding. This categorization was used by the German higher education research center HIS (Leszczensky & Orr, 2004). In the HIS report, the three types are broken down one level further:

- > Funding-formulas are divided into further into formulas with: 1) a fixed amount that increases incrementally, 2) formulas based on input indicators, and 3) formulas based on output indicators. Most funding formulae comprise a mix of these types.
- > Project based funding can be divided into projects awarded on a competitive base and projects awarded on a non-competitive base. In the latter case, funds are distributed equally across institutions or negotiated between the government and (a selected number of) HEIs if the proposals meet the project criteria. Project proposals of the competitive type are awarded (through a tendering or bidding process) to the institutions that meet the criteria best.
- > Contract based funding is divided into two types: contracts in which intentions are formulated (often laid down in framework agreements), and contracts in which agreed activities or performances are specified in detail.

Table 3: Overview of types of financial steering instruments

Formula			Project		Contract	
Fixed amount	Input	Outputs	Competitive	Non-competitive	Intentions	Agreed performance

Source: (Leszczensky, Orr et al. 2004)

In practice, one will often see countries using a mix of the funding options shown in table 3. Every country has its own mix, as a result of historical and political developments. In most, next to a formula-based component, project funds are awarded on a competitive basis as part of the total public funding. This is often the case for the funding of academic research, with research councils and national academies selecting the proposals that best meet the criteria in terms of quality, relevance and price. The project proposals are prepared by teams of researchers and often are of a bottom-up nature. Such competitive funds are different from targeted project funds, where the public authorities are more prescriptive about the activities to be carried out. Targeted funding exists if public money is awarded for a particular purpose. This is a common practice among countries, for instance, to encourage improving teaching quality, promoting innovation, fostering better management practices, modernising infrastructure, encouraging partnerships with the private sector, supporting particular fields, and improving quality assurance processes (Santiago et al., 2008, p. 197).

5. A CLOSER LOOK AT FUNDING MECHANISMS IN EUROPE

Have defined the general dimensions of funding mechanisms this section will present some more detailed information on the funding mechanisms in use in some of the national higher education systems in Europe.

Table 4 below is from a recent study by Eurydice (Eurydice, 2008). It shows for 30 European countries how the direct public funding of public higher education and the government-dependent private higher education takes place. The Appendix to this report shows the explanation of the abbreviations used for the countries.

Table 4: Main mechanisms for direct public funding of higher education in Europe, 2006

	BE fr	BE de	BE nl	BG	CZ	DK	DE	EE	IE	EL	ES	FR	IT	CY	LV	LT	LU
Budget negotiation with the funding body based on a budget estimate submitted by the institution		●		●					●	●				●			●
Budget established by the funding body based on past costs						●				●			●				
Funding formula	●	●	●	●	●	●	⊗	●	●	●	⊗	●	●		●	●	
Performance contracts based on strategic objectives			●		●	●				●		●					●
Contracts based on a predetermined number of graduates by field of study								●							●		
Funding for specific research projects, awarded in the framework of competitive bidding procedures	●	●	●	●	●	●		●	●	●		●	●		●		:
	HU	MT	NL	AT	PL	PT	RO	SI	SK	FI	SE	UK-ENG/ WLS/NIR	UK- SCT	IS	LI	NO	
Budget negotiation with the funding body based on a budget estimate submitted by the institution		●				●		●									
Budget established by the funding body based on past costs					●										●	●	
Funding formula	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Performance contracts based on strategic objectives				●		●	●		●	●				●			
Contracts based on a predetermined number of graduates by field of study																	
Funding for specific research projects, awarded in the framework of competitive bidding procedures	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

● Mechanism applied ⊗ Variable depending on the regional authority : Data not available

Source: Eurydice.

Belgium (BE de): As of 2009/10, a new system for awarding operational resources will be introduced based on a budget proposal from the existing higher education institution, including all revenue and expenditure from the previous year.

Belgium (BE nl): The means allocated in the past are considered in the funding formula to a certain extent.

Czech Republic: Performance contracts and related negotiations concern only public HEIs at ISCED level 5A. For public institutions at ISCED level 5B, funding formulas are established at regional level. For public and government-dependent private institutions at ISCED level 5B, it is possible to receive funding from the Ministry of Education to develop national objectives.

Denmark: In 2006/07, performance contracts concerned universities only. In 2008, the 22 non-university HEIs, which merged into 8 institutions, will also be governed by performance contracts.

Germany: Each Land defines the allocation method of direct public funding to HEIs.

Ireland: The funding formula concerns universities, whereas the institutes of technology operate on the basis of budget negotiations. Funds are also granted to universities on a competitive basis for activities related to strategic national priorities.

Greece: The introduction of performance contracts for universities was recently adopted by parliament but has not yet taken effect.

Spain: Each Autonomous Community determines its own method of awarding direct public funding to HEIs.

Luxembourg: Information not verified at national level.

Austria: Performance contracts do not concern Universities of Applied Science (Fachhochschulen).

Slovenia: Negotiations apply only to the investment part of the budget. Expenditure met by HEIs in the previous year is considered to a large extent in the funding formula.

United Kingdom (ENG): Although most of the teaching grant is allocated by formula, with performance-related input, it is also subject to a funding agreement (or contract) specifying the volume of teaching activity to be delivered. The volume of teaching activity is defined in broad terms, except for quota-controlled subjects such as medicine and teaching, and in the case of funding for additional student places. The funding agreement specifies a target number of students in these cases.

Iceland: Funding formula and performance contracts do not apply to the two HEIs under the auspices of the Ministry of Agriculture.

Liechtenstein: The information about research funding relates solely to the Hochschule Liechtenstein.

FORMULA FUNDING

Table 4 illustrates that the majority of countries in Europe make use of funding formulas to calculate the size of public grants for teaching and/or ongoing operational activity and, in certain cases, research. The funding drivers in the formula include input criteria (e.g. student enrolments, staff numbers) and/or performance indicators (e.g. credits, diplomas). Formula funding is popular for a number of reasons. Fairness and transparency are two important attributes of formulas. The administrative burden is another attractive feature of a formula, because, once established, the application of the formula is quite straightforward. One set of rules is applied to all HEIs and there is no need to negotiate with each HEI separately.

Table 5 contains some information on the funding criteria in the funding formulas for teaching in nine European higher education systems.

Table 5: Funding of teaching in some European higher education systems

	Public funding based on:
Sweden	Students; credits
(within agreed upon capacity limits)	
Denmark	Credits accumulated by students ('taximeter' principle)
Belgium-Flanders	New entrants; credits awarded; diplomas (BA, MA, PhD)
Germany	Previous year's budget; number of students (loosely based on number of chairs awarded by state to each individual institution)
England	Number of students (agreed upon with university)
Netherlands	New entrants; diplomas (BA, MA, PhD)
Finland	Number of diplomas (agreed upon with institution)
France	Input criteria (staff, floor surface, students)
Spain	Students and (in Valencia region) a contract-based part driven by selected indicators chosen by institution

PERFORMANCE-BASED FUNDING

When studying the funding formulas more in detail, it comes out clearly that input-related factors are still very important in all countries, despite all the attention (and sometimes rhetoric) about performance and 'value for money'. Although some countries have decreased the weight they give to student numbers in favour of the more performance-related factors, there is no single country that has a 100% performance-based system. One of the reasons for the moderate attention for performance elements is the difficulty of agreeing on indicators that can adequately capture performance, both quantitatively and qualitatively.

Compared to the 1990s, when there were only a few countries where output-related criteria played an important role (Denmark, Netherlands, Poland, Sweden and the UK), there are now almost twenty countries where elements of performance are driving the budget of a HEI. These are Austria, Belgium (Flanders), Denmark, Germany, Estonia, Finland, France, Greece, Iceland, Italy, Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden and the UK. Even the funding mechanisms for the higher education systems in many (Central and Eastern European) countries that earlier were driven by central planning have been reshaped rapidly. Their funding mechanisms were characterized by an extreme politicisation of funding decisions, but nowadays funding formulas are used instead of negotiations-based approaches.

When it comes to tendencies that point in the direction of performance-based funding, we observe the following:

- › For the Danish system, the teaching allocation (which on average makes up one third of the revenues of universities) is directly linked to the number of students who pass their exams.
- › In the Dutch funding system, the universities' teaching allocation is 50% based on numbers of degrees, and for its universities of applied sciences, graduation rates affect funding. In the research budget, performance elements such as Master's diplomas and PhD degrees are partly driving the funds per institution.
- › While the funding of teaching activities in the Czech Republic is mostly input oriented (number of students, etc), output criteria such as the number of graduates have recently been introduced.
- › In the German states, funding is a mixture of historical, input and output-oriented allocation mechanisms (Göbbels-Dreyling, 2003; Leszczensky & Orr, 2004).
- › Based historically on an input system (number of students), the Italian funding system nowadays is also partially based on output criteria related to research performance (through the introduction of a Research evaluation exercise).
- › The Norwegian funding system allocates funds according to a formula based on a combination of a fixed component (60%) and components driven by results in education (25% - based on students' credits and graduates) and research (15% - based on a mix of the following performance indicators: doctoral degrees, EU funding, research council funding and the number of publications).
- › In Sweden funding for teaching is a mix of input elements (full-time equivalent student load) and outputs (student achievements in terms of credits). In addition to input measures (e.g. staff positions), research funding is increasingly tied to performance (publications/citations, competitive research funding) and strategic considerations.
- › The universities in the UK receive a research budget that is based on quality evaluations established in periodic research assessment exercises (RAE). The budget for education is based on enrolments (weighted per discipline), updated each year for changes in student intake. Funds for research and teaching are combined in a lump sum.

Allocation mechanisms for block grant funding are evolving. In most countries block grant funding includes separate teaching and research components, calculated on the basis of different criteria (although universities are free on how they spend this money). Block grant funding for research is changing from a basic formula-based funding of universities to an output-based (quality-based) block funding.

PROJECT FUNDING

Turning to the line in table 4 dedicated to 'Funding for specific research projects, awarded in the framework of competitive bidding procedures', we note that all countries use instruments to allocate project funds to universities. Many countries have a research council that awards competitive project grants to academic research projects in universities – the 'dual mode' model. This means that, next to the core funding of academic research (the institutional or direct funds that are part of the lump sum), there is a second, competitive funding stream originating from a research council or intermediary organisation. The competitive research funds are awarded on the basis of research proposals prepared by research teams. In several countries an important part of funding is nowadays channelled through competitive research contracts and other contract research.

As far as the funding of research is concerned, we also observe a trend of attaching new (additional) research funds to specific priorities selected by the funding authorities. In other words, while competitive research council funds still may be for original, curiosity driven projects, many governments are tying specific conditions and goals to new competitive funds. An example of the latter is the emergence of new schemes and research programmes for carrying out strategic research, such as centres of excellence. As we will see later on in this report, the proportion of funds distributed through competitive grants schemes (e.g. research councils) is increasing relative to the funding allocated to formulas and other direct (core) funding schemes. While the block grant funding system still appears to be dominant within national systems, in all countries, an increase in the share of project funds for research is observed.

FUNDING THROUGH CONTRACTS⁴

Turning to the third type of funding (next to formula-based block grants and project funds) we will now present some developments taking place in the funding through contracts. Funding contracts, signed between funding authorities and individual HEIs, are located in quadrant Q3 (decentralised, output-oriented) in figure 4 shown above. This approach to funding may be seen as a way of the government 'buying' a particular performance from the university.

AUSTRIA

The Austrian higher education sector underwent some radical changes in recent years. In 2002, a new university law was initiated, changing institutional and financial autonomy and the funding mechanism for universities and Fachhochschulen. Funding of universities was traditionally a rather intransparent mechanism of bilateral negotiations between university and Ministry. According to the new law, part of the universities' public funds (90% of which are federal) are allocated (from 2007 onwards) as a lump sum, based on agreements reached in a Leistungsvereinbarung (performance agreement) drawn up between each university and the Ministry. A performance agreement is concluded for a period of three years. It is a contract in public law. 80% of the general funds (the lump sum) is negotiated between the university and the ministry. The remaining 20% is related to a formula that comprises some performance indicators. The budget related to the performance agreement is intended to cover both teaching and research activities. In addition to the performance agreements, universities may also receive funds for specific tasks. These funds are allocated on a competitive base, using peer review systems.

In contrast to the universities, Fachhochschulen are institutions under private law. For the whole sector, a development and funding plan is decided upon between the Austrian federation, states and the Fachhochschul Council. The negotiations are based on calculated student places. The public funding is limited to 90% of the full cost; the remaining part is to be covered by local authorities and business sponsors.

BELGIUM-FLANDERS

In the new funding mechanism for higher education, in place from 2008, next to the formula-based lump sum an amount of some 12% of available funding will be set aside for multi-annual agreements between the education minister and each higher education institution. Each institution commits itself to work on agreed objectives in return for funding. Some of the aims and characteristics are enhancing the institution's innovative capacity, increasing the participation of students from ethnic minorities and underrepresented social-economic groups, developing more flexible learning paths and opportunities for mature and employed students, improving the efficiency and the overall quality of the higher education system by pooling capacity and expertise (critical mass) and by developing joint study programmes between HEIs.

FINLAND

In return for the larger latitude in resource use, Finnish universities from 1998 onwards agree on target outcomes with the Ministry. These agreements (say performance contracts) are underlying the core formula-based funds (89% of institutional funding). The formula consist of a fixed amount and a part based on input (a target number of new students admitted) and output indicators (degrees conferred), and a part based on third mission (knowledge transfer, societal services) activities. Since 1998, a smaller part of university resources (about 7%) is made available through national programmes or based on performance criteria. These contracts stress strategic objectives and centres of excellence.

⁴ This text on Funding through Contract is based heavily on Kaiser & de Boer (2007).

FRANCE

The major part (almost 80%) of French universities' funding is through the San Remo model, with which the need for staff and recurrent expenditure is calculated. It comprises criteria like enrolment, floor surface and curriculum related indicators. In addition to the formula, some public resources are allocated based on four-year contracts. The concept of contracts between the state and individual HEIs was introduced in the 1984 law on higher education. The contractual policy was first limited to research but in 1989 all activities became in the realm of contractual policy. The contracts became known as contract unique or *contrat quadriennal* (CQ). In addition there are contracts between the state and the region that comprise a substantial amount of the research funding. The research part of the CQ therefore covers only a very limited part of overall research funding (around 5%).

The ministry has proposed to raise the part of the resources allocated through the contracts (up to 40%) in order to be able to meet the accountability requirements of the new (LOLF) budgeting legislation. The other part of the funding then should be based on student numbers. Although the CQs are also known as the unique contracts, there is a clear divide between the part in which research is addressed and the part that addresses teaching. The latter is far less detailed and only negotiated with the president of the HEI. The research part is more detailed and addresses issues for specific research units within the university.

GERMANY - NORDRHEIN-WESTFALEN

In 2002, some states (Länder) governments agreed upon covenants with the HEIs (e.g. Hessen). The covenants (Hochschulpakt) implied agreement on targets and financial means to reach those targets for the mid-term future. However, covenants were not 100% guaranteed as the Parliament was allowed to step back from them. In addition to these more abstract arrangements, some Länder started with special instruments of contract management (Zielvereinbarungen – target agreements), e.g. Nordrhein-Westfalen (NRW). All universities and Fachhochschulen in these states defined projects to build up their profiles and fixed them in 3-year contracts with the ministry. In 2006, all Länder used Zielvereinbarungen (Jaeger & Leszczensky, 2006). We need to note though that there are no clear rules on what to do if one of the parties does not fulfil (part of) the contract. In January 2007, the Hochschulfreiheitsgesetz was effectuated. This Law completely revises the relationship between the state and the HEIs. The state withdraws from detailed interference and 'enforces' the autonomy and accountability of the HEIs. In this new setting, the new (third) generation performance contracts play a central role, linking the perspective of the individual HEI to the (policy) objectives of the state. The contracts comprise issues such as research priorities and the number of places for new entrants per department. HEIs commit themselves to show the position of their graduates on the labour market as an indicator for the 'quality' of the programs. The state guarantees funding for a multi-annual period. 80% of the government's budget that is allocated through the contract is based on a formula, whereas 20% is negotiated and agreed upon by the HEI and the Ministry.

SPAIN – VALENCIA

Each autonomous region in Spain has a different funding system. The bigger regions have developed more or less sophisticated funding systems. Although most of the public funding is based on inputs (number of students, costs of different programs, etc) a modest portion is related to outputs. In some regions, the "performance funding" is related to similar indicators for all the universities in the region. In other regions, each university reaches a specific agreement with the regional government (a contract-programme) in order to establish specific multi-annual goals for the institution in such a way that the achievement of these goals is awarded by extra funds.

In the case of Valencia the HEIs' allocations, apart from the core (enrolment/formula-driven) funds (87%) consist partly (up to 10%) of a goal-oriented specific funding allocation. For the latter the funding model includes fifteen objectives. Six of these are teaching-related, three are related to R&D, one is related to post-graduate studies, one to employment, one to innovation, one to management and two to cultural activities. These objectives are measured using thirty-one indicators. In the agreements between the university and the regional government, each university selects a specific set of indicators with the universities choosing the indicators closest to their profile. This approach resembles an à la carte contract funding system.

DENMARK

Funding of teaching and research are separated in Denmark. The HEIs receive core funding through the taximeter system, which links teaching funds directly to the number of students who pass their exams. There is a two-tier system for research funding, where the first tier is the basic grants allocated by the different ministries directly to the institutions and the second containing research allocations from the National Research Councils, strategic research programmes, foundations, ministries, and private firms.

Since 1999, university development contracts have been established a governance instrument. There is no straightforward link between the funding system and the institutional strategies. Referring to explicit institutional strategies, the universities sign development contracts with the Ministry of Science, Technology and Innovation. However, a university development contract is not a legally binding document. It is rather a 'letter of intent', stating the strategic areas that the university intends to focus on as well as the instruments the university intends to use in order to reach the set targets. Accordingly, there is no automatic relationship between reaching the set targets by the university and the grants awarded by the government. This may change soon because several stakeholders, including the Government, suggest that the development contracts in the future should be linked to funding.

Overlooking the higher education funding mechanisms across Europe, we observe a large variety. However, there are some clear tendencies:

- > An overwhelming majority of countries make use of formula funding
- > A growing importance of output measures in the funding formulas, next to the input measures (with the latter getting the highest weight)
- > An increase in the use of project funds to increase competition for (research) funding and to meet specific national goals (targeted funding)
- > An increase in the use of contracts agreed between ministries and individual HEIs, where part of the HEI's budget is tied to a performance agreement or performance contract.

In the various formulas there is as yet no uniformity in the choice of indicators. Use is made of the following performance indicators: number of (BA and MA) degrees, credits, graduation rates, success in winning competitive research grants, academic publications, and research evaluation outcomes. Little consensus seems to exist on the way to weigh the different measures. Maybe as a consequence of this, as well as to allow for some flexibility, we see an increased prominence of performance contracts and the allocation of project funds to encourage universities to work on particular types of performance. Just like the funding formulas, the design and the content of performance contracts vary to a high degree though.

6. THE COMPOSITION OF UNIVERSITY RESOURCES IN EUROPE

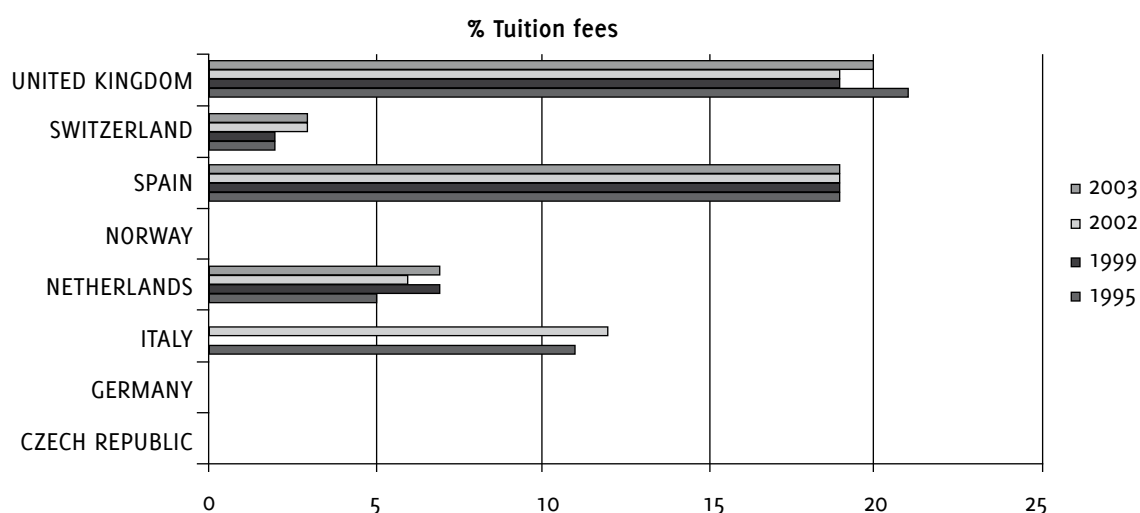
In this next to last section we look at the composition of the revenues of European universities where some interesting changes may be observed. First of all we make some general observations on the revenues of the universities for a small sample of 8 countries. The sample was studied in the context of a European Commission-funded research project, called CHINC (Changes in University Incomes and their Impact on university-based research and innovation). This project was unique in the sense that funding data was collected directly from a set of 89 research universities and universities of applied sciences (Slipersaeter et al., 2006; Salerno et al., 2006).

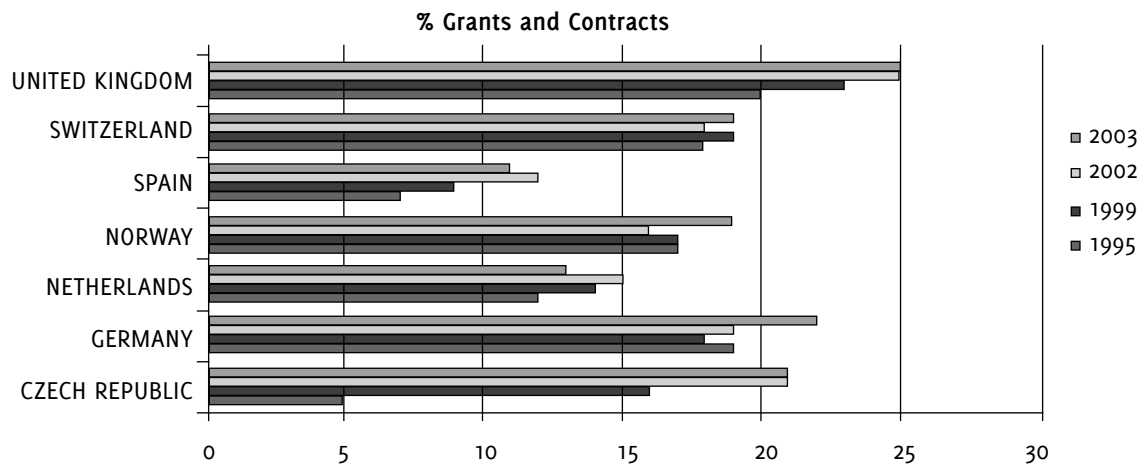
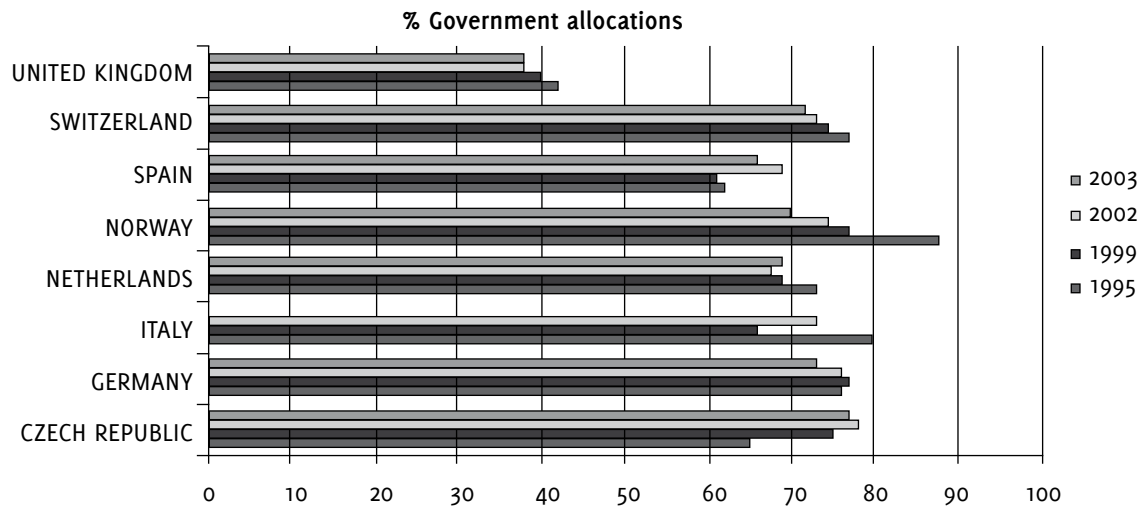
Building on institutional-level data from the CHINC project, some funding trends on the national level also become visible. These data must be considered with care, since the CHINC database covers only a sample of institutions, which in large countries – Germany, Italy, Spain, UK – is far from being representative. We focus on three revenue categories: government appropriations (say: core funding), tuition fees (student funding) and grants & contracts (competitive funding; project funding). Some of the trends are:

1. Government appropriations are still the dominant source of revenues in all countries except the UK. Their share exceeds two-thirds in all countries, except for the UK, that in 2002/03 displays a share of 37%.
2. Tuition fees are an important source of revenues in only three countries, i.e. Italy, Spain and the UK, while in the other countries fees account for a relatively small share of revenues.
3. The aggregate share of grants & contracts shows some variation between countries – the lowest value being 10% in Spain, the highest 25% in the UK – but most of the countries considered show a range of between 10 and 20%.
4. Over the period 1995-2003 we note a slight decrease in the share of government appropriations, no change at all in the share of tuition fees, and a general increase in the share of competitive grants & contracts.

The set of graphs in figure 5 illustrates these funding developments over the period 1995-2003 for our sample of 89 European higher education institutions.

Figure 5: Evolution of main revenue categories by country in four years





Note: National aggregates are based on the CHINC sample. Government allocations for Spain are overestimated since they contain also grants and contracts. For Italy no data on grants & contracts are available.
 Source: CHINC project (Lepori et al., 2005)

Table 6, taken from a study by the Bruegel think tank (Aghion et al., 2008), presents some slightly more recent revenue information. The data is based on information from 66 European universities that are in the Top 500 of the 2006 Shanghai ranking. This means that the sample is biased towards the more research intensive universities in Europe.

Table 6: Shares (%) of revenues for a sample of European universities, 2006

	UK	ES	DE	IT	NL	SE	DK	BE	IE	CH
Tuition and fees	23	16	1	12	7	0	0	5	32	3
Government core funding	35	62	73	63	68	60	70	65	38	72
Competitive research grants	21	10	22	12	15	34	19	21	18	18
Other sources	20	13	4	9	10	6	2	9	12	7
Total	100	100	100	100	100	100	100	100	100	100

Source: Bruegel survey (Aghion et al., 2008).

The table contains several interesting facts (see Aghion et al., p. 31). The facts are very much in line with the conclusions from the CHINC study:

- > All countries have a share of public core funding of 60 to 70 percent, except for the UK and Ireland (IE).
- > This fact is explained in particular by the high proportion of the budget coming from tuition fees in these latter two countries, even if southern European countries also have a sizeable proportion of their (relatively low) budgets coming from fees. In contrast, Nordic universities receive nothing from students, and student fees are symbolic for several other countries, including Germany (DE) and Switzerland (CH).
- > The share of the budget coming from competitive research grants is typically 15 to 22 percent, with outliers being Spain (ES; 10 percent) and Italy (IT; 12 percent), and Sweden (SE; 34 percent).

What is somewhat hidden in the data (because it is included in the ‘competitive research grants’ and ‘other sources’ lines in the above table) is the fact that business funding of public research is clearly increasing in Europe, giving rise to new relationships between funding sources and research performers.

An important issue is whether the changes in resourcing and resource composition have had an effect on the level of the individual university. What has come out clearly from studies like the above-mentioned CHINC project and studies in the OECD-IMHE programme (Strehl et al., 2007) is that developments in the national funding environment are mirrored by developments inside the universities (Salerno et al., 2005). From the CHINC study we highlight some of the strategies that were implemented in recent years by individual universities. Universities are:

- > creating “centers of excellence” on selected strategic areas, to achieve critical mass and to build a profile for their institution
- > making use of financial and budgetary instruments to reward performance
- > strengthening their university’s centre’s steering capacity
- > start to systematically collect information on research/teaching performance in order to have a better insight into their organisation
- > have support facilities in place to help researchers in generating competitive research revenues and engaging in research commercialisation
- > increasingly are devolving responsibilities for financial and personnel matters to the departments in their organisation
- > putting in place more modern human resources management systems, such as a tenure track system
- > engaging in linkages with the outside world (regional partners, local industry, small and medium sized enterprises).
- > building alliances with other universities (at home and abroad) to work on joint research and joint degree programmes.

These internal policies adopted in the sample of European universities studied in the CHINC project may be characterised as efforts of universities to behave as ‘strategic actors’ (Bonaccorsi et al., 2007). Universities are trying to more clearly position themselves in the European research landscape. Some have developed a strategy of improving research performance through more interventionist research management practices, performance-based funding and selecting priority areas for research. Others are creating large (often multidisciplinary) research units where the best researchers co-operate and produce high quality output that has the potential to reap economic rewards as well. This is particularly relevant in a situation where unconditional government funding is on its way down.

Introducing a performance-oriented internal resource allocation often will be complementary to income-generation strategies. Four types of institutional policies came out of the CHINC study:

- > Providing premiums or matching funds for departments that are successful in bringing in external funding/ competitive research contracts.
- > Allowing departments that generate research income to keep a substantial part of the earnings.
- > Introducing a form of performance-based funding that rewards units/ faculties/ departments on the basis of research outputs.
- > Giving greater visibility to institutes/individuals’ performance.

7. CONCLUDING REMARKS

The issue of higher education funding has multiple aspects: who pays for higher education (including the topics of cost-sharing in higher education and external funding to universities), how public funding is allocated to universities, what incentives the allocation mechanism creates, and how much autonomy universities have in decision-making over financial and human resources.

Several funding models were presented in this report. First they were considered abstractly and placed into a general categorisation, stressing the dimensions of performance orientation and individual (decentralised) decision-making. The higher education funding mechanism is an important ingredient in the wider spectrum of governance arrangements. Trends and practices in Europe increasingly point towards more market-based, or performance-oriented and decentralised types of funding mechanisms. European governments have shown a tendency to augment the direct funding of higher education institutions with competitive funding mechanisms and performance-based funding mechanisms such as contractual performance agreements. Alongside this, they have started to grant more autonomy to the institutions, allowing them to make their own decisions about the use of resources and the generation of new – often external – resources. The introduction or the increase of tuition fees has been one of the most widely debated issues in higher education funding (Teixeira et al. 2006), but reality shows that, with the exception of UK, undergraduate fees do not yet cover a substantial share of educational costs in European countries (Lepori et al. 2007).

Surveying the funding mechanisms in place across European higher education systems, we have shown that in most countries the allocation of direct appropriations occurs through a formula that uses a mix of input and – to a lesser extent – output criteria. Often student numbers are the most important criterion in the funding formula. Overall, we find that institutional budgets depend more on student choice and increasingly less on central planning, while for research budgets we observed that competitive funding has become a key allocation mechanism and accounts already for a substantial share of the universities' revenues. Some governments have, next to the above developments, started to work with performance contracts. In performance contracts, governments enter into regulatory agreements with institutions to set mutual performance-based objectives.

The extent to which such moves towards autonomy, performance contracts and performance-based funding have taken place varies enormously across countries. In the first part of this report we already mentioned the Modernisation Agenda of the European Commission, that calls for more autonomy, less fragmentation and stronger ties between universities and private partners. The Commission in one of its earlier communications on 'The role of the universities in the Europe of knowledge' has stated that:

“The European university world is not trouble-free, and the European universities are not at present globally competitive with those of our major partners, even though they produce high quality scientific publications.”

And:

“European universities have for long modelled themselves along the lines of some major models, particularly the ideal model of university envisaged nearly two centuries ago by Wilhelm von Humboldt in his reform of the German university, which sets research at the heart of university activity and indeed makes it the basis of teaching. Today the trend is away from these models, and towards greater differentiation. This results in the emergence of more specialised institutions concentrating on a core of specific competences when it comes to research and teaching and/or on certain dimensions of their activities.” (European Commission, 2003)

The problems identified by the European Commission are the tendency of uniformity and egalitarianism in many national higher education systems; too much emphasis on monodisciplinarity and traditional learning and learners; and too little world-class excellence (Dill and Van Vught, 2010). The Commission notes a number of areas where action is needed, and raises a series of questions such as:

- > how to achieve adequate and sustainable incomes for universities, and to ensure that funds are spent most efficiently;
- > how to ensure autonomy and professionalism in academic as well as managerial affairs;
- > how to concentrate enough resources on excellence, and create the conditions within which universities can attain and develop excellence;
- > how to make universities contribute better to local and regional needs and strategies;
- > how to establish closer co-operation between universities and enterprises to ensure better dissemination and exploitation of new knowledge in the economy and society at large
- > how to foster, through all of these areas, the coherent, compatible and competitive European higher education area called for by the Bologna Declaration, as well as the European research area set out as an objective for the Union by the Lisbon European Council, in March 2000.

A clear recommendation, also expressed in other EC communications, is the need for European governments to increase the autonomy of their national universities and revise their governance structures. However, this increased autonomy does not rule out a continuing important role for government. As always, this role lies in providing subsidies, promoting access, organising student support and ensuring quality assurance. On top of that, through introducing performance-based funding mechanisms and more competition the government will set different incentives that may help to achieve more differentiation in quality, funding and pricing in higher education. A mass higher education system requires a greater reliance on markets and their decentralised decision-making by individuals and institutions. Compared to many other fields in the economy, the sector of higher education and its students and universities can indeed be trusted to be capable of making good decisions. In the words of Nicholas Barr: “The days of central planning are gone!” (Barr, 2003). If we believe the European Commission to be right then competition and greater institutional autonomy will drive higher education institutions to become more sensitive to their varied consumers’ demands for relevance. It remains to be seen whether more countries in Europe will indeed take further steps along the marketisation route to modernise their universities.

REFERENCES

- Aghion, P., Dewatripont, M., Hoxby, C. Mas-Colell, A. and Sapir, A. (2008), *Higher aspirations: An agenda for reforming European universities*. Brussels: Bruegel Blueprint Series, Volume V.
- Asseldonk, A.G.M. van, Berger, L.J.W. and den Hartigh, E. (1999), *Naar een economie van heterogeniteit en onvoorspelbaarheid: kennisvragen voor de Nederlandse managementwetenschappen*, Den Haag: Adviesraad voor het Wetenschaps- en Technologiebeleid.
- Barr, N. (2003), *Financing higher education in the UK: The 2003 White Paper*. House of Commons Education and Skills Committee Post-16 student support, Session 2002-03.
- Boer, H. de, Enders, J., & Schimank, U. (2006). On the way towards new public management? The governance of university systems in England, the Netherlands, Austria, and Germany. In D. Jansen (Ed.), *New Forms of Governance in Research Organizations- Disciplinary Approaches, Interfaces and Integration*. Dordrecht: Springer.
- Benninghoff M., Perellon J.-F., Leresche J.-Ph. (2005), *L'efficacité des mesures de financement dans le domaine de la formation, de la recherche et de la technologie. Perspectives européennes comparées et leçons pour la Suisse*, Les cahiers de l'Observatoire, Lausanne.
- Bonaccorsi, A. & Daraio, C. (2007). *Universities and Strategic Knowledge Creation. Specialisation and performance in Europe*. Cheltenham: Edward Elgar.
- Brown, R. (ed.), (2010, to be published), *Taming the beast. Higher Education and the Market*. Taylor & Francis.
- CHEPS Consortium (2006), *The Extent and Impact of Higher Education Governance Reform across Europe. Part 1: Comparative Analysis and Executive Summary*" Enschede: Center for Higher Education Policy Studies. Available also from: http://ec.europa.eu/education/doc/reports/index_en.html.
- Dill, D. D. and F.A. van Vught (eds) (2010) *National Innovation Strategies and the Academic research enterprise*, Johns Hopkins University Press, Baltimore.
- Estermann, T. & Nokkola, T. (2009), *University autonomy in Europe I. Exploratory study*. Brussels: European University Association.
- European Commission EC (2002), *The European Research Area, An internal knowledge market*, Office for Official Publications of the European Communities, Luxembourg.
- European Commission EC (2002), *More research for Europe: Towards 3% of GDP*, Communication from the European Commission, Brussels: European Commission.
- European Commission EC (2003). *The Role of the Universities in the Europe of Knowledge* (No. COM (2003) 58). Brussels: European Commission.
- European Commission EC (2004). *Facing the Challenge. The Lisbon Strategy for Growth and Employment*, Report from the High Level Group, chaired by Wim Kok. Luxembourg: Office for Official Publications of the European Communities.
- European Commission EC (2005a). *Contribution to the Conference of European Higher Education Ministers in Bergen*. Brussels: European Commission.
- European Commission EC (2005b). *Mobilising the Brainpower of Europe: enabling universities to make their full contribution to the Lisbon Strategy*. Brussels: European Commission.
- European Commission EC (2005c). *Working Together for Growth and Jobs. A new start of the Lisbon strategy* (No. COM (2005) 24). Brussels: European Commission.
- European Commission EC (2006a). *Delivering on the Modernisation Agenda for Universities: education, research and innovation* (No. COM (2006) 502). Brussels: European Commission.
- European Commission EC (2006b). *Progress towards the Lisbon Objectives in Education and Training* (No. SEC (2006) 639). Brussels: European Commission.
- Eurydice (2000), *Two decades of reform in higher education in Europe: 1980 onwards*, European Commission (DG Education and Culture), <http://www.eurydice.org/>.
- Eurydice (2008), *Higher Education Governance in Europe. Policies, structures funding and academic staff*. Eurydice, Brussels
- Geuna, A. (1999), *The Economics of Knowledge Production: Funding and the Structure of University Research*, Cheltenham: Edward Elgar.

- Göbbels-Dreyling, B.** (2003). University Financing Alternatives: The German Example. *Higher Education in Europe*. Vol 28, No. 2, pp. 165-170.
- Jaeger, M. and M. Leszczensky** (2006), Leistungsbezogene Budgetierung an deutschen Universitäten im Spiegel der HIS-Hochschulforschung. Hannover: HIS GmbH.
- Jongbloed, B.** (2004). Regulation and competition in higher education. In: Teixeira, Jongbloed, Dill & Amaral (Eds.), *Markets in Higher Education. Rhetoric or Reality?* pp. 87-111. Dordrecht: Kluwer Academic Publishers.
- Jongbloed, B.W.A. & Vossensteyn, J. J.** (2001). Keeping up Performances: an international survey of performance based funding in higher education. *Journal of Higher Education Policy and Management*, Vol. 23, No. 2, pp. 127-145.
- Kaiser, F., & de Boer, H.** (2007), *Looking for the remote control in higher education systems. An international quest for instruments to steer higher education at a distance on systems performance*. Enschede: CHEPS.
- Kaiser, F., Vossensteyn, H. and Koelman, J.** (2001), *Public funding of higher education. A comparative study of funding Mechanisms in ten countries*, Zoetermeer, Ministerie van Onderwijs, Cultuur en Wetenschappen.
- Kay, J. & Vickers, J.** (1988), Regulatory reform in Britain. *Economic Policy*, Vol. 9, pp. 285-351.
- Lepori, B., M. Benninghoff, B. Jongbloed, C. Salerno and S. Slipsæter** (2007), Changing models and patterns of higher education funding: some empirical evidence, in: A. Bonaccorsi and C. Daraio, *Universities and strategic knowledge creation, Specialization and performance in Europe*, PRIME Series on Research and Innovation Policy in Europe, Cheltenham: Edward Elgar Publishing Limited.
- Leszczensky, M., D. Orr, et al.** (2004). Staatliche Hochschulsteuerung durch Budgetierung und Qualitätssicherung: Ausgewählte OECD-Länder im Vergleich. Hannover: HIS GmbH.
- Leszczensky M. & Orr D.** (2004). *Staatliche Hochschulfinanzierung durch Indikatorgestützte Mittelverteilung. Dokumentation und Analyse der Verfahren in 11 Bundesländern*. Hannover: HIS.
- Neave, G.** (1988). On the cultivation of quality, efficiency and enterprise: An overview of recent trends in higher education in Western Europe, 1986-1988. *European Journal of Education*, Vol. 23, No 1/2, pp. 7-23.
- OECD** (2008), *Education at a Glance*. Paris: OECD.
- OECD** (2009), *Education at a Glance*. Paris: OECD.
- Pollitt, C. & Bouckaert, G.** (2000), *Public Management Reform: A Comparative Analysis*. Oxford: Oxford University Press.
- Santiago, P. et al.** (2008), *Tertiary Education for the Knowledge Society: VOLUME 1: Special features: Governance, Funding, Quality. VOLUME 2: Special features: Equity, Innovation, Labour Market, Internationalisation* Paris: OECD.
- Scherer, F.M., and Ross, D.** (1990), *Industrial Market Structure and Economic Performance*. (3rd ed). Boston: Houghton Mifflin Company
- Salerno, C., Jongbloed, B., Slipsæter, S., Lepori, B.** (2006), *Changes in university incomes and their impact on university-based research and innovation*. Final report for the "Changes in University Incomes: Their Impact on University-Based Research and Innovation" (CHINC) project. IPTS Seville.
- Slipsæter, S., Jongbloed, B., Lepori, B. & Salerno, C.** (2006), *Changes in University Incomes and their Impact on University-Based Research and Innovation. Final Report*. Oslo: NIFU STEP.
- Strehl, F., Reisinger, S., and Kalatschan, M.** (2007), *Funding Systems and their Effects on Higher Education Systems - International Report*. OECD Education Working Papers No. 6. Paris: OECD.
- Teixeira, P., Jongbloed, B., Dill, D.D. & Amaral, A. (eds.)** (2004), *Markets in Higher Education. Rhetoric or Reality?* Dordrecht: Kluwer Academic Publishers.
- Teixeira P.N., D.B. Johnstone, M.J. Rosa and J.J. Vossensteyn** (2006), *Cost-sharing and accessibility in higher education: A fairer deal?*, Douro Series: Higher Education Dynamics, Dordrecht: Springer.
- Vught F.A. van** (1989), *Governmental Strategies and Innovation in Higher Education*, London: Jessica Kingsley.
- Williams, G.** (1995), The "Marketisation" of Higher Education: Reforms and Potential Reforms in Higher Education Finance. In *Emerging Patterns of Social Demand and University Reform: Through a Glass Darkly*, edited by David Dill, D. And B. Sporn (pp. 170-193). Oxford: Pergamon Press.

APPENDIX

COUNTRY CODES

EU-27	European Union
BE	Belgium
BE fr	Belgium - French Community
BE de	Belgium - German-speaking Community
BE nl	Belgium - Flemisch Community
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
EL	Greece
ES	Spain
FR	France
IE	Ireland
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HM	Hungary
MT	Malta

CH	Switzerland
TR	Turkey

NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom
UK-ENG	England
UK-WLS	Wales
UK-NIR	Northern Ireland
UK-SCT	Scotland
EFTA/EA countries	The three countries of the European Free Trade Association wth are members of the European Economic Area
IS	Iceland
LI	Liechtenstein
NOS	Norway



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