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Progress in higher education reform across Europe

Governance Reform

Volume 1: Executive Summary main report

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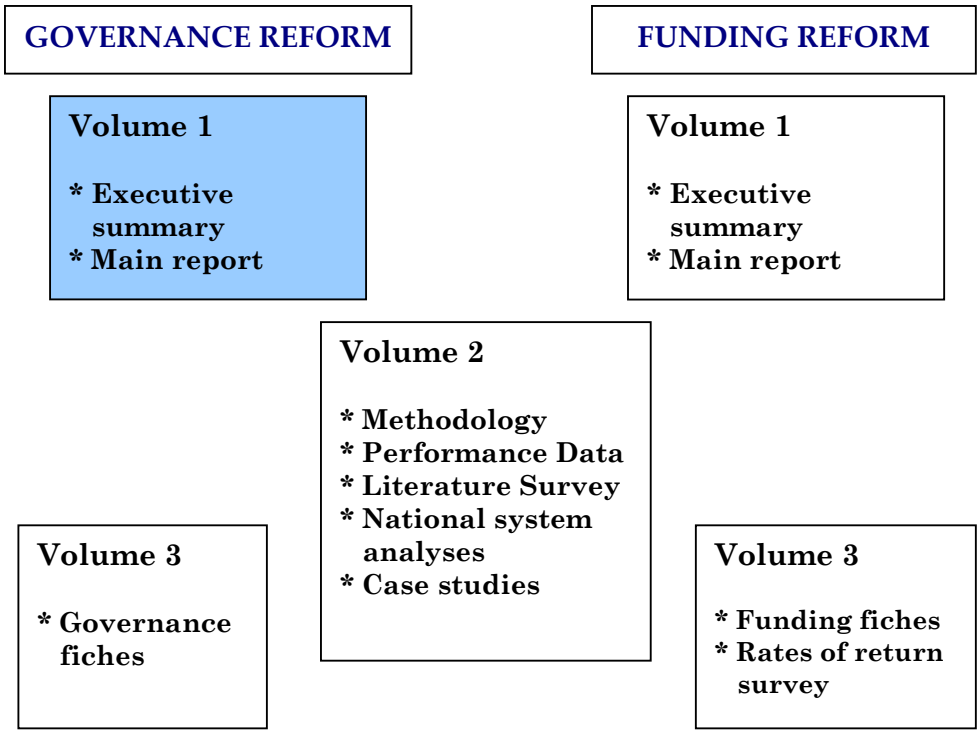
Progress in higher education reform across Europe

Governance and Funding Reform

Structure of the final reports

Two CHEPS-led consortia were commissioned to undertake parallel studies on higher education governance and funding reforms across Europe and their relation to system performance. With the agreement of DG EAC the literature review, performance overviews, national system analyses and case study components of the two projects were integrated which allowed a broader selection of case studies than originally envisaged. All of these "joint products" can be found in Volume 2 which is a common volume in both project reports. The current volume is shaded for ease of reference.



Research Group: Governance Reform Project

Project leaders

Prof. Jürgen Enders	CHEPS
Jon File	CHEPS

Core Research Team

Dr. Harry de Boer	CHEPS (Research coordinator)*
Akiiki Babyesiza	INCHER Kassel
Frans Kaiser	CHEPS
Prof. Barbara Kehm	INCHER Kassel
Prof. Christine Musselin	Centre de Sociologie des Organisations
Dr. Sigrun Nickel	Centre for Higher Education Development
Robert Odera	INCHER Kassel
Dr. Taran Thune	NIFU STEP
Dr. Bjorn Stensaker	NIFU STEP

Senior Advisers

Prof. Frans van Vught	CHEPS
Prof. Marek Kwiek	University of Poznan

* With the support of Dr. Liudvika Leisyte and Dr. Adrie Dassen (CHEPS)

Principal authors of the final report

Harry de Boer, Ben Jongbloed, Jürgen Enders and Jon File (CHEPS)

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Higher education reforms reflect the growing recognition of the importance of higher education for economic, social and cultural prosperity and for increasing competitiveness. While it is well established that governance reforms have taken place at various levels and in various policy areas of higher education, what is less clear is how successful they have been in terms of increasing the performance of higher education systems as a whole. This study aims to answer the following questions:

1. *What have been the policy changes in the governance of European higher education systems between 1995 and 2008? And what have been the policy changes in national higher education systems as regards governance reforms?*

2. *To what extent does the current state of governance in European higher education reflect Europe's modernisation agenda for higher education?*

3. *What are the possible links between governance reforms and the performance of higher education systems?*

4. *What lessons can be learned and what might be the key governance policy themes in the further development of European higher education?*

In answering these questions a mixture of research methodologies has been used to collect and analyse data. The primary data sources to study governance reforms and their effects in thirty-three countries were a comprehensive country questionnaire completed by national experts, interviews with key stakeholders in each of the countries and two institutional case studies in fifteen countries (including interviews with key institutional decision makers). The secondary data sources included the literature on European governance reforms, previous comparative studies on governance reforms and EU and national policy reports.

Based on the terms of reference for this study eight performance dimensions were selected: access, educational attainment, mature learners, employability, mobility, research output, capacity to attract funds and cost effectiveness. With respect to these performance dimensions this study relied on readily available secondary (statistical) data from a number of international databases (OECD, EUROSTAT and UNESCO). To explore the relationships between governance reforms and system performance we used the outcomes of the questionnaires, the interviews with key stakeholders in each country and existing literature.

Governance reforms in Europe

There have been significant changes in governance since 1995 in almost all countries. Many new national higher education acts have been passed. Quality assurance and accreditation systems have been one of the major reform themes – partly inspired by the Bologna process. A series of reforms have had the key objective of enhancing the autonomy of higher education institutions; in some countries this has entailed changing the legal status of the institutions. As part of the reshuffling of authority new policy instruments to steer higher education systems have been developed. Contracts and multi-year agreements between the state and universities are examples of such new instruments. In many countries funding mechanisms have been altered; line item budgeting systems have been replaced by lump sum systems for public funding; and historically-based allocation schemes are loosing ground to funding mechanisms with more of an emphasis on outputs.

As a result of the continuing expansion of higher education, new higher education sectors have been established or have matured – the universities of applied sciences. Simultaneously binary divides between universities and universities of applied sciences are under pressure in other countries. To expand supply further private higher education has gained ground in some countries; there are discussions on blurring the boundaries between the public and private provision of higher education services. The higher education landscape has been restructured in several countries through mergers of institutions within and across higher education sectors. And we see many initiatives to encourage research collaboration between higher education institutions as well as between public universities and private companies (through networks, alliances and clusters).

One of the overarching trends in European higher education governance concerns the enhancement of institutional autonomy. In this study we distinguish between four dimensions of institutional autonomy: organizational, policy, interventional and financial autonomy. Across Europe, the **organisational autonomy** of public universities to decide on their own internal governance structures; on their internal authority, responsibility and accountability structures; as well as to select their institutional leadership is still restricted in many countries by national legislation, regulations and guidelines. Only a few countries have implemented reforms that have seriously transferred to the universities the power to decide on their internal governance structure.

A second major aspect concerns **policy autonomy**, the ability of universities to constitute themselves as academic communities in terms of student and staff selection and to determine their teaching and research programmes. In 2008, public universities in the vast majority of European countries have medium-high to high levels of policy autonomy in at least some aspects of staffing, student selection and academic affairs. Only a few countries have implemented reforms that granted universities fundamentally more autonomy in these matters.

Financial autonomy is generally perceived to be a very important characteristic of autonomous organisations; it includes the ability to decide on the internal allocation of public and private funds, to diversify sources of income (for example through tuition fees and other private contributions), to build up reserves, and to borrow funds on the capital market. Public universities in the vast majority of European countries have medium to high levels of financial autonomy. Many countries have implemented reforms that have significantly enhanced the autonomy of universities in financial matters, particularly through the introduction of lump sum budgeting.

Interventional autonomy refers to the extent to which organisations are free from accountability requirements. Public universities in the majority of European countries have medium levels of interventional autonomy as a result of increasing reporting and accountability requirements. In some countries this autonomy is low. Reforms have increasingly obliged public universities to demonstrate their performance and to account for their activities and spending. Only a few countries have not followed this trend.

While recognising that there are important differences between higher education systems, institutional autonomy has grown overall, creating opportunities for public universities to act as more integrated organisations and to determine their own profiles and strategies; this is not the case for all dimensions of autonomy; public universities in many countries face limitations on their managerial flexibility particularly in terms of internal governance arrangements, staff and student selection and formal accountability requirements.

Governance reforms and Europe's modernisation agenda for higher education

We see the modernisation agenda as a set of recommendations that offers countries and higher education institutions a variety of issues to consider and a range of options for reform that need to be tailored to national and institutional contexts and conditions. The picture that emerges from this study is a diverse one: the different governance aspects of the modernisation agenda have been addressed to varying degrees in different countries. Looking at the current position in thirty-three countries: in eleven countries universities have a high level of institutional autonomy in terms of selecting their academic staff; in fourteen countries universities have a high level of financial autonomy; in twenty countries universities have a high level of institutional autonomy in starting new teaching and research programmes; in sixteen countries universities have supervisory or governing boards with external stakeholder membership; the vast majority of European countries have internal and external evaluation systems in place for teaching and for research; and in five countries universities have a high level of institutional autonomy in determining their internal governance structures.

The timing and breadth of reforms differ across European higher education systems; there are early adopters as well as late reformers. In some parts of Europe radical political changes drastically changed the higher education landscape in a very short period of time in the early 1990s, whereas for other countries particular aspects of the modernisation agenda have been a reality for years.

Governance and system performance in higher education

The terms of reference of our study highlighted eight dimensions of performance. We used international data sources to measure the performance of European higher education systems in 2002 and 2006 across these eight dimensions. In terms of these performance dimensions, there is no doubt that in the vast majority of European countries system performance improved over this period.

Our findings suggest that under the right conditions, particularly sufficient funding and smart financial incentives, institutional autonomy does matter in terms of performance in the primary processes of universities. There appears to be a link between the output of the primary processes (numbers of graduates and articles published) and the level of institutional autonomy. This conclusion is supported by other research.

Therefore, we conclude that within the right conditions (such as sufficient levels of public expenditure, financial incentives and sufficient capacity to attract and retain productive staff and sufficient capacity to meet demand) autonomous universities can contribute to educational attainment and improved research productivity in their countries.

For the other performance dimensions the links are conditional, less visible or non-existent. Institutional autonomy as a means of increasing the private household contributions to higher education only comes into play when universities have the freedom to charge tuition fees and set tuition levels themselves.

We do not find a systematic link between business and industry contributions to higher education R&D and the level of institutional autonomy of public universities. There are indications, however, that institutional, and particularly financial autonomy is a facilitating factor for universities in responding to increasing business and industry demand for and investment in R&D.

For the other performance dimensions, which are not related or less directly related to the primary processes of universities, the findings of our study do not reveal clear links between governance and performance. In these dimensions performance is explained more by a combination of other factors such as societal developments, economic conditions and political cultures. This means that on dimensions other than educational attainment and research output links between governance and performance can exist in specific contexts. Our study shows many interesting country-specific examples of a positive interaction between governance reform and

performance, but more detailed insights are needed to draw firm conclusions. Future research should also include a focus on national policies on issues in addition to governance and funding (for example, on access, lifelong learning and internationalisation), country characteristics and actual university behaviour in relation to governance reforms and institutional and system performance.

Policy recommendations

Based on the outcomes of our analyses, we offer the following recommendations.

- **European universities should be granted more institutional autonomy overall** providing the space and thrust to develop their own strategies and structures. In particular, this concerns more leeway for determining their own internal governance structures; their budgets, financial priorities and human resource policies; and the profiles of their academic communities in terms of staff and student selection, and education and research programmes.

- **The balance between autonomy and accountability needs to be re-visited**. What seems to have been gained in terms of autonomy might too easily be lost to excessive accountability requirements. Traditional means of state regulation and state micro-management tend to be replaced by new methods of accountability and reporting to other authorities. It is timely to assess the means and ends of accountability in European higher education.

- Without **increasing investment into higher education and research** across Europe it is unlikely that universities will be enabled to completely fulfil the growing expectations of their role within the European knowledge society and their overall contribution to European competitiveness. Governance reforms in combination with sufficient levels of funding are likely to contribute to enhanced system performance. This requires the issue of the balance of public and private investment into higher education and research to be re-visited.

- Governance reforms are enablers for system level performance improvements within an overall regime of steering and funding. They are a means to multiple ends that are only partly under control of more autonomous universities and do not automatically lead to improvements at the system level. Institutional autonomy in combination with funding reforms is most likely to contribute to system performance in higher education's primary processes and products. We urge **more realism when it comes to expectations that governance reforms will result in multiple and rapid effects.** This realism should also apply in the assessment of the reforms.

- **A European monitoring system** should be established to address important aspects of reform and performance in higher education systems in constant flux. A European scoreboard for higher education could integrate and further develop important indicators for performance and for the characteristics of higher education systems and their reform. Such a monitoring system would also provide a valuable foundation for the analysis of national systems and the development of tailor-made recommendations for further reform.

1 The objectives, research questions and design of the study

1.1 Governance defined

Over the last three decades governance and related concepts such as steering and coordination have been given much attention in higher education, as well as in other parts of the public sector in Europe. For a number of reasons, 'new' or 'modern' concepts of 'the art of governing' have been introduced, described and analysed (e.g. de Boer et al. 2006). Despite, or perhaps as a result of, all this attention, there is no generally accepted definition of what governance precisely means.[1] It is a highly contested concept.

In this study we will follow Eurydice's (2008: 12) definition of governance: it refers to 'the formal and informal exercise of authority under laws, policies and rules that articulate the rights and responsibilities of various actors, including the rules by which they interact'. A plethora of comparative studies on higher education governance are based on similar definitions (Braun and Merrien, 1999: Clark, 1983: Currie, et al., 2003: de Boer, et al., 2006: Eurydice, 2008: Goedegebuure, et al., 1994: Kehm and Lanzendorf, 2006: Kogan and Hanney, 2000: Kohler and Huber, 2006: Leisyte, 2007: OECD, 2008). Governance concerns the interplay of actors, rules and regulations. It relates to the arrangements through which public as well as private actors seek to solve societal problems or create societal opportunities. It refers to the exercise of political, economic and administrative authority to steer higher education systems; a complex set of mechanisms, processes and institutions through which actors articulate their interests, use their resources and try to achieve their goals. It raises core questions about who decides when on what; it is about the rules of the game. These questions can be asked at various levels: for example, within universities (in higher education research usually referred to as internal governance) as well as on the macro- or system-level (referred to as external governance).

1.2 Research questions

Higher education reforms reflect the growing recognition of the importance of higher education for economic, social and cultural prosperity and for increasing competitiveness. Policymakers believe it is vital to remain among the global players in higher education and express concern that gaps with competing economies on key indicators such as participation rates, gross enrolment ratios, numbers of employed researchers and public and private investments in higher education are not closing and in some cases are even widening (e.g. Education at a Glance (OECD, 2007) and the European Innovation Scoreboard (Inno-metrix, 2007)). This study is timely when we look at the major policy developments and key challenges in higher education in

[1] For example, in their overview study, Kersbergen and van Waarden (2004) identify nine different meanings of governance.

Europe in general and higher education governance in particular. Amidst the rapidly changing European environment, individual higher education systems and institutions have sought new ways of adapting to the unique changes they face. In some situations, governments and institutions have adopted or modified policies or practices from other systems; while other countries or institutions have developed creative solutions to meet their own unique circumstances.

However, while it is well established that governance changes have taken place on various levels and in various policy areas of higher education, what is not very well known is the degree of implementation of such changes and how successful they have been in terms of increasing the performance of higher education institutions and national systems as a whole. There is remarkably little research seeking to address such issues in a comprehensive way at a European level (see the review of research literature in Volume 2). Therefore, this study aims to answer the following questions:

What kinds of higher education governance reforms have been initiated in the period 1995-2008 and why? What have been their (side) effects? What have they meant for the performance of higher education systems?

In analysing the progress of higher education governance reforms in 33 European countries and their relationship to higher education performance, the study seeks to identify what lessons could be learned about the relationship between higher education governance reforms and higher education system performance.

More precisely, the following research questions have guided this study:

1. *What have been the policy changes in the governance of European higher education systems between 1995 and 2008? And what have been the policy changes in national higher education systems as regards governance reforms?*

2. *To what extent does the current state of governance in European higher education reflect Europe's modernisation agenda for higher education?*

3. *What are the possible links between governance reforms and the performance of higher education systems?*

4. *What lessons can be learned and what might be the key governance policy themes in the further development of European higher education?*

1.3 The research methodology

In answering these questions a mixture of research methodologies to collect and analyse data have been used.[2] Both primary and secondary sources of data were used to address governance reforms and their effects. The primary sources included a comprehensive country questionnaire completed by national experts for each country

[2] A fuller description of our methodology can be found in a *Note on Methodology* in Volume 2 of this report.

and interviews with key stakeholders in each of the 33 countries. The primary sources also included two institutional case studies in fifteen countries (including interviews with key institutional decision makers). The secondary data sources included the literature on European governance reforms, previous comparative studies on governance reforms and EU and national policy reports.

The terms of reference for this study specified the system performance dimensions that should be used in this study. These dimensions are: access, educational attainment, graduation, employability, mobility, research output, capacity to attract funds and cost effectiveness.[3] With respect to these performance dimensions this study relied on readily available secondary (statistical) data from a number of international databases (e.g. OECD, EUROSTAT and UNESCO). To explore the relationships between governance reforms and system performances we used both the interviews with key stakeholders in each country at the national and the institutional level and existing literature.

Based on our research design a number of descriptive and analytic documents and working papers have been produced, which serve as the basis for the outcomes of this study:[4]

Literature review report; an overview of books, articles and reports on public sector management and higher education governance and funding matters. (See Volume 2)

National governance fiches: brief overviews per country on governance reforms in the period 1995-2008 and the current position. (See Volume 3)

System performance overviews: an overview of (changes in) higher education performances per country for each of the performance dimensions. (See Volume 2)

National system analyses: 33 country reports on governance reforms in the period 1995-2008, their effects and their possible links to performance dimensions.

Institutional case studies: in fifteen countries, two in-depth case studies were undertaken at the institutional level.

This report is structured as follows. First, in chapter 2 we provide an overview of the trends in higher education governance based on previous research and documentation. The position in terms of higher education governance prior to this study will be used to benchmark our observations, interpretations and conclusions throughout the report. Next, in chapter 3 the governance reforms in 33 countries in

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[3] In the terms of reference 'quality of education' was one of the system performance dimensions, but this was substituted by 'educational attainment' as there are no accepted and readily available indicators to measure the former across 33 countries.

[4] Another CHEPS-led consortium conducted a parallel study on higher education funding reforms across Europe and their relation to system performance. With the agreement of DGEAC the literature review, performance overviews, national system analyses and case study components of the two projects were integrated which allowed a broader selection of case studies than originally envisaged. All of these "joint products" can be found in Volume 2 which is a common volume in both project reports.

the period between 1995 and 2008 will be described, followed by an interpretation of these reforms in the light of the modernisation agenda of the European Union. Are the nationally initiated governance reforms moving in the direction advocated by the European Commission in its various communiqués? Chapter 4 deals with the question of system performance improvements in 33 countries across the different dimensions. In chapter 5 the relationships between the implementation of governance reforms and system performance are explored. Chapter 6 contains a summary of our findings, conclusions and policy recommendations.

We believe that this study has produced useful insights as well as valuable input for future research and for future policy discussions.

2 Higher education governance and performance: the study in context

2.1 The importance of governance reforms

It is becoming increasingly clear that higher education is a critical component in modern societies (e.g. Van der Ploeg and Veugelers, 2007). Countries pursue many policies designed to integrate their economies, political systems and social structures under a broader, more powerful European Union. The recognition that higher education is a major driver for economic competitiveness in an increasingly knowledge-driven global economy has made high-quality higher education more important than ever before (OECD 2008: 23). National governments as well as the European Union have become more concerned and interested in higher education. Policy agendas increasingly stress that universities and colleges are expected to make a key and growing contribution to the operation of pluralist democracies, to efficient economic processes, to social cohesion and to the development of a highly educated labour force (e.g. EC 2003, 2005a). These changing expectations of the contribution of higher education to a knowledge-based economy and society over the last decade have influenced the governance of higher education and its institutions (e.g. Estermann and Nokkala, 2009:6).

Stressing the importance of higher education for future society suggests a golden age for universities (e.g. Jacobs and Van der Ploeg, 2006). However, European higher education faces serious challenges[5] that require smart solutions and intelligent social engineering. Governance reforms are one important example of this. On 23 November 2007, the Council of the European Union adopted a new resolution on "Modernising universities for Europe's competitiveness in a global economy". The resolution reaffirms how modernising higher education and research is needed to increase European competitiveness. It underlines "the need for universities to have sufficient autonomy, better governance and accountability in their structures to face new societal needs and to enable them to increase and diversify their sources of public and private funding in order to reduce the funding gap with the European Union's main competitors" (Council of the European Resolution 16096/1/7 2007:2). There is, according to the Council, a need to accelerate the reform of universities to stimulate progress across the whole higher education system and to foster the emergence and strengthening of higher education institutions which can demonstrate their excellence internationally. This implies among other things that

[5] In several communications the European Commission addressed these challenges. Governments are finding it increasingly difficult to meet the rising costs of science and providing quality education and excellent research. Lack of competitiveness has been one of the major challenges for European universities. The major criticism lies in European universities failing to use their full potential to stimulate economic growth, social cohesion and improvement in the quality and quantity of jobs. The European Commission identifies the following problems: a tendency towards uniformity and egalitarianism in many national higher education systems; too much emphasis on mono-disciplinarity and traditional learning and learners; and too little world-class excellence (Dill and Van Vught, 2008).

higher education institutions should be granted significant autonomy and greater accountability "to enable them to improve their management practices, to develop their innovative capacity and to strengthen their capacity to modernise their curricula to meet labour market and learner needs more effectively" (ibid p.4).

In this chapter, based on an impressive body of existing literature on governance in higher education, we provide a general overview of trends in higher education governance and the potential effects of governance on system performance. This chapter provides the context for the findings of our study that will be reported on in chapter 3 to 5.

The many studies on governance reforms in Europe have at least one thing in common: governance structures, as well as reforms of these structures, have taken a variety of forms. While trends and similarities exist, national distinctive features are often observable. Diversity remains one of the most striking features of European higher education.

2.2 Drivers for changes in governance

Until recently the higher education governance policy has focused largely on the relationship between institutions and the state. However, since the 1990s shifts in system governance are evident. In terms of system coordination there is a growing recognition that relationships are not only more complex and dynamic but involve more actors from various levels. This overall shift has been termed 'from government to governance'. Authorities and powers have been redistributed across various policy levels. In many countries, coordination has changed from a classical form of regulation dominated by a single actor, the state, to forms in which various actors at various system levels coordinate the system ('multi-level multi-actor governance') (e.g. van Kersbergen and van Waarden 2001). Coordination increasingly takes place through interconnected policy levels with a substantial number of actors influencing agenda setting, policy development, policy determination, policy implementation and policy evaluation (de Boer et al. 2007).

While there is a growing consensus that, in general, 'steering from a distance' has become the dominant philosophy of national governments in steering their higher education systems, this 'steering from a distance' does not mean the absence of government. In fact, many argue that the impact of government on the system as a whole has increased. Through national agenda setting and the introduction of macro steering mechanisms, or changes to them, governments still play a strong and vital role in higher education systems (Goedegebuure et al. 1993). Many studies show a shift from state control to state supervision (van Vught 1989), but national governments "still retain a central role in the regulation of higher education systems, and in a large number of countries, still exert direct control" (Estermann and Nokkala 2009:6). Some see even 'a far stronger role for central authorities in the determination of university objectives and modes of working' (Bleiklie and Kogan 2007: 479). The 2006 CHEPS consortium study of higher education governance

reform across Europe (2006: 13) indicates that while institutional autonomy has been enhanced in general, "at the same time the many governmental reform efforts may imply even stronger state regulation than in the past, and not only a process of transmitting responsibility from the system to the institutional level". Thus, 'steering from a distance' does not necessarily imply a diminishing role for government but rather a changing one.

The changing role of the state in governing higher education has also been addressed with respect to the state delegating its powers to different levels. In particular, research shows that state power is being dissipated in three directions (Pierre and Peters 2000). One is an upward shift as policy agendas, strategic choices and rule structures are increasingly made at the supra-national level (e.g. the European Union – despite the principle of subsidiarity – or organisations like the World Bank).[6] A second is a downward shift as provinces, local governments and higher education institutions themselves are granted greater operating autonomy. The third shift has been outward: traditional tasks of the state are moved to the periphery, such as to NGOs, or even privatised.

Former state responsibilities have not only been transferred to institutions but to other organisations such as research councils, funding councils and quality/accreditation agencies. New actors at the national level (e.g. ministries of economic affairs) are entering the higher education scene, especially given their interest in the emerging knowledge society and technology transfer. In this respect the state's role, via ministries of education, has become one of a network manager ('steering through networks').

The notion of 'less government and more governance' is strong and has been promoted by several, frequently interrelated factors (e.g. de Boer at al. 2006; Krücken et al. 2007). The first factor is a financial one. Partly because of the budgetary consequences of the continuously increasing size of public higher education, higher education has become more politically salient (e.g. Bleiklie and Kogan, 2007; OECD, 2008). National governments have become more concerned about costs and more interested in higher education 'products'. High public expenditures for continuously expanding higher education systems demand new steering instruments.

Another factor is the ideological shift towards the market as a coordinating mechanism. Today in Europe it is evident that higher education increasingly functions in quasi-markets, where governments play an important guiding and facilitating role. In some countries one can speak of the state as steering the market (Texeira et al. 2004). The role of the state as a market engineer is central to the

[6] Higher education has historically been a national affair, particularly since the creation of the nation state in the nineteenth century. Consequently, there is much diversity in the governance of European higher education systems. The principle of subsidiarity preserves this, while at the same time, states and other stakeholders have not been ignorant of EU-level developments, views and initiatives. Thus, while each country has its own specific institutions and is responsible for organising its own higher education sector, it clearly draws on inspirations and successes from others.

notion of market governance. This concept refers to the use of the market mechanism of supply and demand in governance processes. In this governance mode, government interventions are focused on the shaping of a level playing field, which facilitates self-regulation (Jongbloed 2003; de Boer et al. 2008).

A third factor is globalisation, internationalisation and Europeanisation. These forces have all challenged the national boundaries of higher education systems and pose new questions to governments and higher education institutions ('a game without frontiers'). For example, the European Union's Framework programmes have proved to be an effective instrument for encouraging higher education institutions to engage in large scale partnerships across national boundaries, which have resulted in different networks and consortia and the emergence of supranational research agenda setting. The views and initiatives from the European Commission, expressed in several communiqués, and of course the Bologna process and the Lisbon agenda are other examples of the supranational impact on the at national and institutional levels in higher education. The OECD and the World Bank are also organisations whose recommendations and programmes shape national educational programmes and priorities (e.g. Krücken et al. 2007). Globalisation affects the world of higher education in several ways (e.g. Marginson and van der Wende, 2009). One good example is the spread of new public management which brings us to the fourth factor: the infusion of new public management ideologies and the implementation of new public management approaches. New public management organisational approaches, incorporating management practices from the private sector, have been influential in "modernising" public services. Some European countries increasingly treat their public sector organisations as corporate enterprises with the goal of increasing their efficiency and effectiveness by giving them more autonomy and at the same time asking for more accountability (Pollitt and Bouckaert 2000). Governance structures in many universities have changed in this respect. Across the board, the main trend has been the strengthening of higher education institutions *as organisations*, aiming for better integrated organisations rather than a loose grouping of faculties with weak central leadership (de Boer et al. 2007). In such integrated organisations working conditions are more standardised, leadership is strengthened, more powerful managerial structures are established and collegial structures are weakened and replaced by stakeholder boards and a stronger bureaucratic line organisation with a firmer top-down grip on internal organisational processes (e.g. Santiago et al. 2006; Teichler, 2003, 2006; Bleiklie and Kogan, 2007; Marginson and Considine, 2000). The trend towards universities becoming more business-like or entrepreneurial has advocates as well as opponents. Advocates, usually embracing new public management ideologies, stress the potential gains in terms of the three 'Es' (efficiency, effectiveness and economy), while proponents argue that such university models endanger the university as a cultural institution and point to the negative effects of 'academic capitalism'.

2.3 Recent studies on higher education governance

A number of large scale studies mapping higher education governance trends in Europe have been published recently: the OECD Thematic Review of Tertiary Education (2008), the Eurydice report on Higher Education Governance in Europe (2008), the CHEPS consortium study on The Extent and Impact of Higher Education Governance Reform across Europe (2006) and the EUA report on University Autonomy in Europe I (2009). In this subsection we briefly describe the conclusions of these four studies, which will be used to reflect upon our findings throughout this report.

The main trends identified in the *OECD Thematic Review of Tertiary Education* (2008), which analysed higher education polices in 24 countries (including twelve EU member states) are: the expansion of higher education systems; the diversification of provision (of institutions and programmes); the increased heterogeneity of student bodies; the introduction of new funding arrangements (diversification of funding base, more performance- and competition-based and expanding student support systems); an increasing focus on accountability and performance; new forms of institutional governance; and increased global networking, mobility and collaboration. In terms of steering higher education the study found a reduction of direct state control of higher education and a widening of institutional autonomy. In a number of tertiary systems, the most significant governance trend has been the widening of institutional autonomy, from more discretion over the use of financial and physical capital to greater authority over personnel matters. This has characterised most European countries in the last two decades with tertiary systems moving away from detailed State control to more institutional independence. (OECD 2008: 91). With respect to internal university governance the review identified the strengthening of the power of executive authorities within the higher education institutions, a concomitant loss of power and influence by existing collegial (representative) bodies and an increase in the participation of external stakeholders in the internal governance of higher education institutions (OECD, 2008).

The 2008 *Eurydice report on Higher Education Governance in Europe* reported on changing governance arrangements in terms of structures, funding and staff policies in the EU member states and the three EFTA/EEA countries: Iceland, Liechtenstein and Norway. The report argues that diversity in higher education governance remains the major "hallmark of European higher education". In terms of governance, it finds that universities have been granted wider autonomy in various areas (e.g. in funding and staff management) and that university governance structures are trying to balance autonomy and accountability – a balance that is 'rather hard to achieve'. Many countries have a tradition of higher education institutions being collegially managed by academics. As a result of institutions now assuming many of the governance responsibilities formerly held by ministries, these institutional governance structures have changed significantly. In terms of funding policies, increased of financial autonomy is an important trend in higher education

governance in Europe that has gone hand in hand with a variety of performance-based funding models and different forms of quality assurance mechanisms.

The CHEPS consortium study (2006) of governance reforms in thirty-two European countries commissioned by the Directorate-General for Education and Culture of the European Commission demonstrated that there has been significant change in higher education governance in many countries and that these changes in governance are highly heterogeneous. Higher education is largely a national/regional affair and thus the intensity, implementation and timing of reforms has differed greatly across the thirty-two countries. The report revealed the emergence of multi-level and multi-actor governance with an increased emphasis on competition, new funding arrangements and increased attention paid to quality assurance in all countries. Governance by means of the agreement of objectives and the evaluation of performance is developing across Europe. Such higher education governance trends have also been confirmed by a four country study (Austria, the UK, Germany and the Netherlands) funded by the German Research Foundation in 2003-2006 (de Boer et al. 2007; Kehm and Lanzendorf, 2006).

The CHEPS researchers observe a tendency to enhance institutional autonomy – although institutional autonomy has many aspects and that this autonomy has not been enhanced in all respects. While the role of national government is still clearly visible, many policy issues are decided at the institutional level and many powers are attributed to institutional top management. The main trend is the strengthening of higher education institutions as (corporate) organisations. In these institutions traditional notions of collegiality and consensus-based decision-making are under pressure. On the one hand, these 'new' internal governance structures enhance the institution's strategic capabilities, while on the other hand they bring the risk of too much micro management by institutional management, higher levels of internal accountability and more stringent and detailed institutional procedures for quality assurance.

In 2008, Estermann and Nokkala were commissioned by the *European University Association* to study university autonomy in Europe. Their exploratory study covered 34 higher education systems and aimed to provide the foundation for a Europe-wide comparable database of crucial aspects of autonomy. The study focused on four elements of autonomy: ability of universities to decide on organisational structures and institutional governance; financial issues; staffing matters; and academic matters. The report concludes that "although the study confirms the existence of a general trend towards an increase in university autonomy throughout Europe, there is still a large number of countries that do not grant their universities enough autonomy, thereby limiting their performances. There are equally cases where autonomy previously granted has been reduced. Quite often there is also a gap between formal autonomy and the real degree of a university's ability to act with certain independence. In a number of cases a significant increase in accountability measures has effectively curtailed university autonomy." (Estermann and Nokkala 2009: 42).

2.4 Themes and trends in higher education governance

It is persistently argued that the most significant governance trend in higher education has been the widening of institutional autonomy, both substantive and procedural, such as increased institutional discretion over the use of financial and physical capital or greater authority over personnel matters (e.g. Eurydice 2008; OECD 2008). Deregulation in the form of enhancing institutional autonomy has probably been the dominant governance trend in European higher education over the last two decades.[7] The prevailing policy belief is that universities in Europe should be freed from over-regulation and micro-management while accepting in return full institutional accountability to society at large for their results. Another policy belief is that more autonomy for higher education institutions will improve the performance of the institutions and higher education systems. The underlying rationale is that autonomous higher education institutions are better able to control and steer their outcomes and performance.

Generally speaking, in the areas of staff management and recruitment, and particularly with respect to student selection, further enhancement of autonomy seems possible, whereas in funding moving from line item to lump sum budgeting institutions now have more room to make their own decisions. This has opened new possibilities for higher education institutions: they are increasingly engaged in different kinds of partnerships at all levels. International arrangements have proliferated over the past decades in the form of associations, networks, alliances and consortia. Based on disciplinary, geographical, historical and institutional links and similarities higher education institutions have grouped together under the assumption that this will have a positive influence on their position in a competitive higher education environment. Similar groupings and arrangements can be seen also at the national and regional levels (Beerkens 2004). Higher education institutions have also entered into more public-private partnerships with organisations outside the field of higher education.

Enhanced institutional autonomy has meant higher levels of accountability as well as more stringent and detailed procedures for quality assurance at national and institutional levels ('the rise of the evaluative state'). Opponents of this trend speak of an audited society or of evaluation disease, hinting at an overkill of monitoring and reporting requirements (for institutions as well as within institutions). Greater accountability also means that higher education institutions have to redefine the ways in which they inform their stakeholders about their performance. Additional demands are placed on academic leadership, who in turn require new modes of communication with and assistance from the decentralised units (faculties, schools, institutes, departments). Oversight of the higher education institution's primary

[7] Looking at the increasing degree of autonomy of higher education institutions in European higher education two remarks must be made. First, there are countries where autonomy has been granted primarily to the individual faculties instead of the institutions thus giving autonomy a different meaning and having different consequences for institutional management. Second, in some countries the state traditionally played a less visible role in steering higher education institutions. In these cases, with England as the obvious example, institutional autonomy has traditionally been higher than in Continental European countries.

activities has been increasingly centralised within the institutions, with new lines of reporting and new rules and procedures for academics to ensure the quality of teaching and research. In many cases this has led to a further rationalisation of decision-making structures and new 'hierarchies' with institutional leadership in a central role. Good examples are the considerable increase in the number of mid-level management positions in European higher education institutions in the past two decades and the establishment of internal quality assurance mechanisms and systems (Kehm and Lanzendorf 2006). Generally speaking, the devolution of authority from the state level has been accompanied by centralisation within higher education institutions when it comes to accountability measures such as quality assurance (e.g. Henkel and Little 1999). In many respects deregulation has meant re-regulation at another level within the higher education system. State de-regulation does not mean a reduction of rules and regulations, but rather the contrary (Wedlin and Hedmo 2008). It has opened the door for rules to emerge at a different level.

New modes of governance have changed the art of governing inside higher education institutions. One of the consequences of reshuffling authorities and responsibilities between the various levels within the higher education system is that many powers are now located at the top level of institutions. This has often meant a strengthening of institutional leadership, particularly in those higher education systems where traditionally the institutional top level was relatively weak. Another trend in this respect is that institutional leaders are in many cases being selected (appointed) instead of elected, often making it possible for leaders to be appointed from outside the institution, and in some cases the sector.

In many countries, the position of the executive head (rector, president or vice-chancellor) has itself changed significantly as a consequence of granting more autonomy to the institutions. This is particularly true in terms of formal powers. University leaders who used to act as *primus inter pares* are now more often in the position of chief executive officers running a corporate institution with a stronger focus on strategic planning, management by objectives and results (Bleiklie and Kogan 2007). However, in reality executive heads do not always have the possibilities to fully exploit their enhanced powers. As Weber (2006) argues "even if the formal decision structures and processes may give a different impression, most university leaders (rectors, presidents) are hardly in the position to make repeated important decisions". Nevertheless there is a clear general trend of formally strengthening the position of the executive head across Europe.

There are various methods used to select executive heads. In some countries rectors are elected by internal stakeholders. In other countries the executive head is appointed by the governing board or council. In some countries the executive head is appointed by the ministry or the institution's proposed candidate needs ministerial approval. In some cases different mechanisms are used within a country. Across Europe different mechanisms are used to select executive heads and different stakeholders are involved: there is no general picture or clear trend.

The strengthening of institutional leadership has also had an impact on leadership styles within the institutions. Traditional notions of collegiality and consensus-based decision-making have increasingly come under pressure, making room for 'business-like' management and the 'professionalisation' of administrative structures. Borrowing instruments from the private sector, institutions have tried to streamline their organisations in order to cope with an increasingly complex environment. Developing institution-wide polices – always problematic because of higher education institutions' fragmented character – strategic planning, and 'identity-building' are now regarded as essential survival strategies. Higher education institutions are increasingly seen as 'corporate actors' that act strategically not only within their own organisations but also with their external environment.

Another consequence of recalibrating university governance concerns the positions and roles of governing bodies of universities and the role and extent of external stakeholder representation within them (Bleiklie and Kogan 2007; de Boer et al. 2010; Estermann and Nokkala 2009). Many existing university governing bodies have been changed, and some new governing bodies have been established. One of the bodies that has been instituted recently is the 'supervisory board' (e.g. de Boer et al. 2010). The composition and role of these 'top-level bodies' differ across Europe. In some countries the role of this supervisory body is clearly separated from the executive's role, while in other countries the supervisory board has clear decision-making powers. In some countries institutions are obliged to have such boards, while in others this is not the case. The composition of these bodies ranges from external members only to a mix of internal and external members. While there are many differences across Europe, Estermann and Nokkala (2009) report that external stakeholders are increasingly involved in university governance structures and that they sometimes have a consultative role and sometimes a 'full role in the decision making process'.

A final general tendency associated with the strengthening of executive positions in the institutions (executive heads at the central level and deans at the middle level) and a more important governance role for external stakeholders is that this has happened at the expense of academics and students and their representative bodies.

2.5 Governance and performance

Very few studies have investigated the relationship between governance and governance reforms and he performance of higher education systems and institutions. The few exceptions are the work of Knott and Payne (2004), of Aghion and colleagues (2007, 2008 and 2009) and, to some extent, of Van der Ploeg and Veugelers (2008).

Knott and Payne have studied the impact of state governance structures on the management and performance of higher education institutions in the United States. They pose the question of whether governance structures actually make a difference in higher education. They distinguish three types of governance structures: highly

regulated systems (governing or coordinating boards with strong regulatory powers), moderately regulated systems and minimally regulated systems. They investigate how such a governance structure influences: 1) university revenues that are under the direct influence of the state (tuition revenue, state appropriations, in-state and out-of-state tuition rates) and: 2) indirect measures of university performance (market value of the university endowment, total research funding, articles published and citations per article published).

With respect to the direct performance measures, the researchers conclude that more regulation usually leads to lower tuition rates (because states want to encourage broad access) and, more surprisingly, lower state appropriations for flagship universities in highly regulated systems than in minimally regulated systems. To investigate the relationships between governance structures and the indirect performance measures (e.g. research output) only state flagship universities were taken into account. Their research shows that in highly regulated systems flagship institutions obtain less research funding and have fewer articles published but that there is no difference in citations per article published.

Knott and Payne's overall conclusion is that governance structures do matter (Knott and Payne 2004: 28). The system's governance structure influences important choices in terms of resource allocation and sources of revenue. Moreover, the governance structure may also have an indirect effect on how institutional management makes decisions. Responses to state-wide agendas depend on the governance structure: in highly regulated structures more attention is paid to politically prioritised issues such as lower tuition and a greater focus on students. Minimally regulated systems push managerial behaviour in the direction of a private university model. The researchers also note that the impact of governance structures should not be exaggerated because the "strengths and weaknesses of different higher education governance structures are mediated by historical and geographical factors" and differences in political cultures and economic conditions "can play a more important role in determining the features of university performance than governance structures" (p. 27).

Aghion and colleagues have conducted a number of studies on the relationship between governance and performance.[8] In their studies university performance is based on the positions on the Shanghai rankings and is, therefore, basically *research* performance. Governance is mainly defined in terms of public status and budget, building, hiring and wage setting autonomy. The data on governance are derived from a questionnaire that was sent to all European universities in the 2006 top 500 of the Shanghai ranking, resulting in a sample of 66 European universities. Their outcomes suggest that university research performance is positively correlated with

[8] E.g. Aghion, P., M. Dewatripont, C. Hoxby, A. Mas-Colell and A. Sapir (2007), *Why reform Europe's universities?* Bruegel policy brief, Issue 4; Aghion, P., M. Dewatripont, C. Hoxby, A. Mas-Colell and A. Sapir (2008), *Higher aspiration: An agenda for reforming European universities*, Bruegel Bleuprint 5; Aghion, P., M. Dewatripont, C. Hoxby, A. Mas-Colell and A. Sapir (2009), *The governance and performance of research universities: Evidence from Europe and the U.S.*, NBER Working Paper Series 14851, Cambridge, MA: National Bureau of Economic Research.

university autonomy and the level of funding. Moreover, size ('big is beautiful') as well as age (reputation effect) matters for research performance (i.e. position on the Shanghai ranking). They also detect an interaction effect: higher levels of funding (i.e. higher budgets per student) have more impact when combined with budget autonomy. Their findings suggest a positive relationship between competition (for research grants) and university output (i.e. position on the Shanghai ranking). To test the causality of these relations, data for the U.S. were used and research performance was defined as the number of patents. From these American data, the researchers "would (…) like to suggest" a causal relationship between public university autonomy and competition on the one hand and research output in terms of patents on the other hand (Aghion et al. 2009: 24).

Other interesting observations are that "a striking fact is thus the high variance in university governance across European countries, even among those which are performing well in terms of research" … "there is more than one model of university system that appears to work" (Aghion et al. 2007: 5 and 7). Moreover, while they conclude that the research output of research universities can be improved by more autonomy and stronger competition, they also mention that "the results for states far from the technological frontier tell a cautionary tale. Giving autonomy to and introducing competition among institutions of higher education may be ineffective in countries far from the technological frontier" (Aghion 2009: 24).

Van der Ploeg and Veugelers (2008) also show an interest in the relationships between the governance, funding and performance of Europe's universities. Primarily based on secondary analyses (using data from the Global Competitive Index of the World Economic Forum, the Shanghai and THES rankings, OECD indicators and the Bruegel group), they conclude that the evidence shows a high variance in university governance across European countries. This makes governance in principle an interesting factor for explaining differences in performance, but "a bird's eye view already suggests that the link between governance and performance will be complex and bodes badly for the quest for a unique optimal governance model" (Van der Ploeg and Veugelers 2008:110). They do find some indications that a number of the better performing countries have high levels of autonomy while weak performing countries tend to be low on autonomy, although there is a large dispersion of governance characteristics. The most important conclusion "that can be drawn from the available evidence is that more research is needed to pin down the drivers of university performance" (Van der Ploeg and Veugelers 2008: 110).

2.6 Summary

In this chapter we have emphasised the growing recognition that higher education needs to play a pivotal role in securing Europe's competitive position in an increasingly knowledge-driven global economy. If higher education is to play this pivotal role major reforms are believed to be needed, including significant changes in the area of governance. Universities need greater autonomy, more accountability and

better management if they are to respond to new societal needs and develop their innovative capacities.

Since the 1990s there have been governance reforms in nearly all European countries. In general these changes have been characterised as 'less government and more governance' where national governments play a different yet still prominent role in steering their higher education systems using alternative modes of governance such as network or market-based governance rather than the traditional mechanisms of state planning and regulation. These changes mirror similar developments in other areas of the public sector and have been driven by the increasing costs of providing education and other social services; by an ideological shift towards the market as a coordinating mechanism; by the effects of globalisation; and by the growth of new public management approaches. As part of the reshuffling of authority within higher education to multiple actors operating at multiple levels, extensive research suggests that the autonomy of higher education institutions has been strengthened in most European countries. Many higher education institutions have become more integrated organisations and their leadership and management have been strengthened.

Despite this general trend towards greater autonomy, diversity within the governance of European higher education remains one of its essential characteristics. Different countries have reformed higher education governance arrangements in different ways, to different extents, at different times and speeds and with varying degrees of success. Notwithstanding all of these changes, European higher education is still seen to be underperforming in relation to its major competitors. Greater autonomy (linked to more accountability, an increase in resources, and diversified and more competitive forms of funding) is believed by policy makers to be an important contributor to enhanced performance.

In the final part of this chapter we have discussed three studies that explore the relationship between governance arrangements and the performance of higher education systems and institutions. The evidence for a (causal) relationship between governance and performance is not conclusive. The number of studies investigating the relationship is small and the studies that have been conducted suggest that a range of factors including institutional autonomy but also competition, budgetary flexibility and levels of funding are likely to positively influence performance. Nevertheless these interesting studies demonstrate the potential link between governance and performance and its complexity. Our study will explore this relationship further.

3 Governance reforms in Europe in the period between 1995 and 2008

3.1 Institutional autonomy defined

As governments, stakeholders and higher education observers started to realise that central state control was likely to be less effective in steering higher education systems in highly dynamic environments, models of state supervision and 'market-based' modes of governance combined with more autonomous HEIs became prevalent, as described in chapter 2. It is clear that in these new governance arrangements public authorities continue to play a central role in the steering of higher education systems and in some respects still exert direct control. Nevertheless one of the overarching reforms in European higher education concerns the enlargement of institutional autonomy by the devolution of responsibilities from the state to higher education institutions. There is a strong conviction and some empirical evidence, reported in the second part of chapter 2, that institutional autonomy is positively linked to performance (in terms of efficiency or effectiveness). Simply put, the general assumption is that higher education systems will benefit if higher education institutions are freed from state micro-management and have substantial discretion to take decisions independently.

Institutional autonomy is however a contested concept that has different meanings in different contexts and that consists of many different elements. It refers to the managerial flexibility of institutions to construct their own identity, to determine their own profile and to set their own goals and priorities without interference. Based on a literature review, Verhoest et al. (2004:104-106) identify two general kinds of institutional autonomy. First, institutional autonomy is about discretion or the extent to which an organisation can decide for itself about matters it finds important. This can be seen as the relative ability of a higher education institution to govern itself without outside control. Within this first type of autonomy a distinction can be made between managerial and policy autonomy. Managerial autonomy refers to decision-making on finance (e.g. lump sum budgeting offers more discretion than line item budgeting), human resources (e.g. selection of employees) or other factors such as logistics, organisation and buildings. Policy autonomy refers to the extent the institution can decide for itself on the processes, procedures and policy instruments it will use to deliver goods and services and on the quantity and quality of these services. Second, institutional autonomy refers to the level of independence of the organisation vis-à-vis the government in actually using delegated decision-making competencies. Structural, financial, legal and interventional autonomy are subdivisions of this second type. A maximum level of institutional autonomy within each of these subdivisions can be seen in the following examples (cf. Verhoest et al. 2004:107-108):

- the rector, president or vice-chancellor of a higher education institution is elected or appointed and evaluated by a body composed exclusively of members of the institution (structural autonomy);

- the higher education institution is financed exclusively through income from sources other than government (financial autonomy);

- the higher education institution has a legal personality under private law (legal autonomy);

- the higher education institution has no reporting requirements to central government, is not subject to evaluation or audits commissioned by the government and there is no threat of sanctions or intervention by government (interventional autonomy).[9]

Table 3.1: Aspects of institutional autonomy in three other studies

Study	Aspects of institutional autonomy
CHEPS consortium study 2006	• mission/strategy development • internal governance • introduction of new study programmes • quality of teaching and learning • internal financial policies • conditions for employment of staff • access and admission policies • development of public-private partnerships
OECD study 2008	• Institutional governance (legal status, ownership of buildings, commercialisation of activities, freedom to set up internal governance structure) • Staff (selection, career structure, working conditions) • Students (selection, number of students) • Finance (set and differentiate tuition fees, borrowing funds on the market, resource allocation, income-generating activities, and accumulating financial capital) • Education (programme supply, curriculum design, course content, quality assessment and modes of instruction and delivery) • Research (design research programmes, decide on research priorities)
EUA study 2009	• Academic (institutional strategy and profile; introduction, structure and content of programmes; quality assurance and student admissions) • Financial (procedural framework of public funding, universities' financial capacity) • Organisational (ability to establish own structures and governing bodies, define modalities of leadership models) • Staffing (staff recruitment, civil servant status, salary setting)

Recent studies on institutional autonomy in higher education (OECD, CHEPS consortium and EUA; see previous chapter) have also used different dimensions of institutional autonomy (see table 3.1).

[9] We do not use autonomy in a normative way: the four situations outlined in this paragraph do not represent the ideal model of public university governance but a theoretical maximal level of autonomy. More institutional autonomy does not (automatically) mean better governance of a higher education system. Most informed discussion of this issue, including the Modernisation Agenda (see later in this chapter) recognises the need to find a balance between autonomy and accountability, accepting that the latter does impose some limits to autonomy in return for benefits in terms of system governance.

Based on the above, we distinguish between four dimensions of institutional autonomy in this study, each made up of a number of items (see table 3.2)

Table 3.2: The four dimensions of institutional autonomy used in this study

Autonomy dimension	Item
Organisational autonomy	Are public universities free to determine their own internal governance structure?
Policy autonomy	Are public universities free to appoint staff and can they determine staff salaries? Are they free to select their Bachelors students and to decide on the number of study places? Are they free to develop their own teaching and research programmes?
Interventional autonomy	Are public universities obliged to produce a strategic plan? Are they required to report upon their activities? Are they required to have evaluation systems for teaching and research?
Financial autonomy[10]	Are public universities free to decide on the internal allocation of public and private funds? Are they free to borrow funds on the capital market? Are they free to build up reserves and/or carry over unspent financial resources from one year to the next? Are they free to determine how they spend their public operational grant?

Data with respect to these four dimensions of institutional autonomy was gathered primarily through an extensive questionnaire completed by national experts from the 33 countries.[11] The national system analyses as well as the outcomes of the recent studies mentioned earlier were used to crosscheck the findings. The answers from the questionnaires were converted into scales that range from low to high institutional autonomy on a particular item.

In the next sections we present the findings of our study with respect to the four dimensions of institutional autonomy. The leading question in each of these sections is: what is the current state of institutional autonomy across Europe and what have been the changes in the period between 1995 and 2008?

3.2 Four dimensions of institutional autonomy across Europe

3.2.1 Organisational autonomy

Organisational autonomy refers to the capacity of public universities to decide for themselves on their internal authority, responsibility and accountability structures without any external interference. The situation in 2008 indicates that the organisational autonomy of public universities is rather low in many countries; there are only five countries in which public universities enjoy high or medium-high levels of organisational autonomy. In most countries the organisational autonomy of public universities is constrained by government regulations concerning internal

[10] For a more elaborate overview of funding reforms we refer to the parallel study "Progress in Funding Reforms across Europe".

[11] Appendix 1 to this volume contains a schedule of all of the governance and funding reforms that took place in the 33 countries over the period 1995 to 2008.

governance structures, although the level of detail of such regulations varies significantly across different countries.

Table 3.3: The organisational autonomy of public universities in Europe in 1995 and 2008 (N=32)

Level of autonomy	1995	2008
Low	Austria, Cyprus, Czech Republic, France, Hungary, Malta, Romania, Slovakia, Spain, Switzerland, Turkey	Bulgaria, Cyprus, Czech Republic, Luxembourg, Malta, Romania, Slovakia, Turkey
Low-medium	Denmark, Iceland, Latvia, Netherlands, Norway, Poland, Portugal, Slovenia, Sweden	Denmark, France, Iceland, Latvia, Poland, Portugal, Spain, Sweden, Switzerland
Medium	Belgium (Wallonia), Bulgaria, Estonia, Finland, Ireland, Lithuania, United Kingdom	Austria, Belgium (Wallonia), Estonia, Finland, Hungary, Ireland, Lithuania, Netherlands, United Kingdom
Medium-high	Germany, Greece, Italy	Germany, Greece, Italy, Norway
High	Croatia	Croatia

This conclusion requires further explanation because different higher education studies report many reforms in this area. Apparently however the overall effect of the reforms has not been that public universities enjoy higher levels of organisational autonomy. There have been reforms that have changed the level of detail in governance regulation without granting public universities significantly more leeway to determine their own internal governance structures (state regulations have been replaced by state guidelines, but these guidelines still have to be taken into account). In 2008, there are eight countries in which the government prescribes in detail the internal governance structure of public universities.

In a large number of countries we see structural changes in the organisation at the top-level of public universities. One of these changes is that there is more external representation on top-level governing boards, frequently in the form of recently installed supervisory boards (see also EUA 2009 and Eurydice 2008). In 2008, public universities in about half of European countries have governing boards with majority external membership.

3.2.2 Policy autonomy

Policy autonomy refers to the ability of public universities to constitute their own academic community in terms of student and staff selection and to determine their teaching and research programmes. Table 3.4 demonstrates that in 2008 public universities in the vast majority of European countries have medium-high or high levels of policy autonomy.

Table 3.4: The policy autonomy of European public universities in 1995 and 2008 (N=32)

Level of policy autonomy	1995	2008

Low-medium	Austria, France, Germany, Romania, Slovenia, Spain	France, Germany, Hungary, Spain
Medium-high	Belgium, Cyprus, Denmark, Finland, Greece, Hungary, Iceland, Italy, Lithuania, Netherlands, Norway, Portugal, Slovakia, Switzerland, Turkey	Austria, Belgium, Bulgaria, Cyprus, Denmark, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Portugal, Romania, Slovakia, Slovenia, Switzerland, Turkey
High	Bulgaria, Croatia, Czech Republic, Estonia, Ireland, Latvia, Malta, Poland, Sweden, United Kingdom	Croatia, Czech Republic, Estonia, Finland, Malta, Norway, Poland, Sweden, United Kingdom
Legend: categorisation based on the average scores on a multiple index based on seven items: staff appointments, salary setting, BA student selection, setting the number of study places, research programming, starting new programmes and determining the content of programmes		

When we take a more detailed look at the different aspects of policy autonomy, the following observations can be made. First, with respect to staff appointments and the determination of salaries, a scattered picture emerges. In 2008, in some countries public universities have significant flexibility in selecting their senior academics and in setting their salaries (particularly Bulgaria, the Czech Republic, Estonia, Sweden and the United Kingdom). In Austria, Finland, Norway, the Netherlands, Malta and Slovenia, public universities also have substantial discretion in appointing academic staff and/or determining their salary levels. Governance reforms, intending to give universities more leeway in staff appointments and setting salary levels, have taken place in Austria, Slovenia and Finland in the period between 1995 and 2008. In twenty countries no significant change occurred in the last decade.

Table 3.5: The autonomy of European public universities in terms of staffing matters in 2008 (N=30)

Level of autonomy	2008
Low	Cyprus, France, Greece, Hungary, Portugal, Romania and Turkey
Medium	Germany, Italy, Iceland, Romania, Latvia, Lithuania, Denmark, Ireland, Slovakia, Belgium, Poland, Luxembourg
High	Austria, Bulgaria, Czech Republic, Estonia, Finland, Malta, Netherlands, Norway, Slovenia, Sweden, United Kingdom
Legend: Low autonomy = public universities have no or hardly any possibilities to appoint staff themselves and to set their salaries; medium autonomy = public universities have some possibilities to appoint staff themselves or to set their salaries; high autonomy = public universities can appoint staff themselves and/or set their salaries	

The second aspect of policy autonomy concerns the opportunities for public universities to select their own students and to determine the number of study places for Bachelors programmes. This is a complicated issue as most countries have their own historically rooted policies and procedures in this regard. In 2008, public universities in ten countries have full or substantial freedom to select their own Bachelors students and to decide for themselves on the number of study places. In contrast, public universities in five countries have to accept all qualified students unconditionally and/or the number of study places is externally determined to some extent. A number of the thirteen countries in a middle position have open access policies – universities have to accept all qualified students, which limits their

freedom – but they have full freedom to decide on the number of study places themselves (e.g. Belgium).

The number of countries where reforms in this area have taken place in the period between 1995 and 2008 is limited: only three countries have initiated and implemented reforms that have had an observable impact on the autonomy of public universities in terms of student selection or the procedures for determining the number of study places. In Italy and Romania public universities were granted more freedom. In Hungary the reverse happened; here the role of the state increased in the last decade.

Table 3.6: The autonomy of European public universities to select Bachelors students and to decide on the number of study places in 2008 (N=29)

Level of autonomy	2008
Low	Austria, France, Hungary, Lithuania, the Netherlands
Medium	Belgium, Cyprus, Denmark, Greece, Iceland, Italy, Ireland, Luxembourg, Malta, Norway, Slovenia, Spain, Turkey
High	Bulgaria, Croatia, Czech Republic, Estonia, Finland, Poland, Romania, Slovakia, Sweden, United Kingdom
Legend: low autonomy = Higher education systems with very limited or low institutional autonomy in student selection and in deciding on the number of study places; medium autonomy = Higher education systems with limited institutional autonomy in student selection and in deciding on the number of study places; high autonomy = Higher education systems with full or significant institutional autonomy in student selection and in deciding on the number of study places	

The third aspect of policy autonomy relates to the extent to which public universities are able to decide for themselves 1) to start new Bachelors programmes, 2) to determine the contents and teaching methods of the Bachelors programmes they offer and 3) to establish their own research programmes and major research themes. In 2008, in twenty countries public universities have almost full autonomy in programming their teaching and research activities. In fourteen countries public universities face at least some restrictions in this regard. In most of these countries the restrictions concern the university's autonomy to decide on research programmes rather than on the programming of teaching activities. In no single country is the freedom to programme research completely restricted.

In the period between 1995 and 2008, reforms have taken place in ten countries that have had an impact on the ability of public universities to programme their teaching or research; in six of these countries the autonomy of public universities decreased, while in the other four countries autonomy increased.

Table 3.7: The autonomy of European public universities to decide for themselves on teaching and research programming (N=32)

Level of autonomy	1995	2008
Low- medium	Germany, Slovenia	Germany, Slovenia, Spain
High-medium	Austria, Denmark, Hungary, Portugal, Romania, Slovakia, Spain, Turkey	Belgium (Wallonia), Bulgaria, Denmark, Hungary, Latvia, Lithuania, Portugal, Romania, Slovakia,

		Slovenia, Turkey
High	Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Greece, Iceland, Ireland, Italy, Latvia, Malta, Netherlands, Norway, Poland, Sweden, Switzerland, United Kingdom	Austria, Belgium (Flanders), Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Poland, Sweden, Switzerland, United Kingdom
Legend: categorisation based on a multiple index with average scores per country based on three items (starting new Bachelors programmes, deciding on the contents of programmes and the determination of research programmes and research priorities).		

3.2.3 Interventional autonomy

Interventional autonomy is in general defined as the extent to which organisations are free from ex post accountability requirements (Verhoest et al. 2004). A high level of interventional autonomy refers to a lack of reporting and accountability requirements. Nevertheless, as reported in many higher education studies more institutional autonomy usually goes hand in hand with universities being required to account for the use of their enhanced ability to take decisions themselves.

In 2008, we see that public universities in seven countries have high levels of interventional autonomy; here accountability requirements are low (see table 3.8). In four countries public universities have low levels of interventional autonomy. Most countries fall somewhere in between having medium levels of interventional autonomy.

The situation in 2008 differs significantly from the situation in 1995. There have been many reforms since 1995 that have reduced interventional autonomy. In 1995, public universities in twenty-two countries enjoyed high levels of interventional autonomy with no country having low autonomy. We witness a clear trend, supported by many higher education studies, that for public universities the ex post accountability requirements have increased in nearly all European countries[12]. Public universities increasingly have reporting obligations to demonstrate their achievements and/or justify their activities (e.g. through annual reports, audited financial statements, documents demonstrating compliance with national polices, publishing the outcomes of teaching and research evaluations, providing data for national data bases (e.g. on staff, students or degrees)). There are some exceptions to this shift from high to lower levels of interventional autonomy: for Austrian, Cypriot, Italian, Maltese, Portuguese and Swiss public universities the formal ex post accountability requirements are relatively low.

Table 3.8: The interventional autonomy of European public universities (N=33)

Level of autonomy	1995	2008
Low	---	Bulgaria, Greece, Ireland, Romania

[12] This is also true for some countries that have not moved between categories in table 3.8. For example, Austria shows high levels of interventional autonomy in both 1995 and 2008, but accountability requirements increased (but not enough to shift the country to a different category).

Medium	Belgium, Denmark, Estonia, France, Hungary, Netherlands, Slovakia, Sweden, United Kingdom	Belgium, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, Turkey, United Kingdom
High	Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Finland, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, Norway, Poland, Portugal, Romania, Slovenia, Spain, Switzerland, Turkey	Austria, Cyprus, Italy, Malta, Portugal, Switzerland
Legend: categorisation based on a multiple index with average scores per country based on six items (obligation to develop strategic plans, reporting requirements, and the obligation to have internal and/or external evaluation schemes for teaching and/or research)		

Formal requirements to report on the quality of teaching and research account for much of the shift from high to significantly lower levels of interventional autonomy. In nearly all countries in Europe reforms have taken place with respect to quality assurance systems for teaching and/or research since 1995. In many countries public universities used to have the authority to decide for themselves if they would have *internal* quality evaluation systems for *teaching*, but in many countries it is now mandatory for public universities to establish such systems, although in most cases public universities can decide independently from the state on the method of doing this. This change is also visible for *external* quality assurance systems for *teaching*.

With respect to research we witness a comparable shift across Europe. Public universities in all European countries used to have high levels of autonomy in terms of *internal research* evaluation systems, but this is no longer the case everywhere. The number of countries that require their public universities to have *external* research evaluation systems has increased. Nevertheless in many countries it is not mandatory for public universities to have research evaluation systems, and where this is mandatory the universities can decide for themselves on the methods to be used.

3.2.4 Financial autonomy of public universities in Europe

Financial autonomy is generally perceived as being a very important characteristic of autonomous organisations (see chapter 2). Table 3.9 indicates that in 2008 public universities in 14 European countries have medium levels of financial autonomy; while in a further 14 countries universities have high levels of financial autonomy. In 2008, there were only four countries where financial autonomy was low. In 1995, in contrast, there were twelve countries where financial autonomy was low.

In the period since 1995, sixteen countries have implemented funding reforms almost all of them granting more financial freedom to public universities: particularly, Austrian, German, Norwegian and Swiss public universities have gained more freedom on financial matters over the last decade. Our conclusion is that although public universities in eighteen countries do not have high levels of financial

autonomy, the overall level of financial autonomy across Europe has been increased significantly over the last decade.

Table 3.9: The financial autonomy of European public universities (N=32)

Level of autonomy	1995	2008
Low	Austria, Cyprus, France, Germany, Greece, Hungary, Lithuania, Norway, Romania, Slovakia, Switzerland, Turkey	Cyprus, Greece, Lithuania, Turkey
Medium	Croatia, Denmark, Finland, Malta, Poland, Portugal, Slovenia, Sweden	Denmark, Finland, France, Germany, Hungary, Latvia, Luxembourg, Malta, Poland, Portugal, Romania, Slovakia, Sweden, Switzerland
High	Belgium, Bulgaria, Czech Republic, Estonia, Iceland, Ireland, Italy, Latvia, Netherlands, Spain, United Kingdom	Austria, Belgium, Bulgaria, Croatia, Czech Republic, Estonia, Iceland, Ireland, Italy, Netherlands, Norway, Slovenia, Spain, United Kingdom
Legend: categorisation based on a multiple index with average scores per country based on four items (internal allocation of funds, borrowing funds on the capital market, building up reserves and spending of the operational grant).		

When we look in greater detail at the financial autonomy of public universities, the following observations can be made:

- In 2008, public universities in twenty-one countries could freely decide on the internal allocation of both private and public funds; in 1995, this number was seventeen. Changes in the direction of more flexibility took place in Austria, Germany, Norway and Slovenia. In the other countries, the flexibility to internally allocate private or public funds is restricted by ministerial regulations.

- In 2008, public universities in eight countries were free to borrow funds on the capital market; in 1995, this was possible in six countries. In 2008, in thirteen countries this was not allowed.

- In 2008, in sixteen countries public universities were entitled to build up reserves and/or carry over unspent financial resources from one year to another; in 1995, the number of countries where this was possible was thirteen. In 2008, there were three countries where public universities were not allowed to build up reserves; in 1995, this was the case in eight countries.

- In 2008, in twenty-two countries lump sum funding was in place, allowing universities to decide themselves how to spent the public operational grant; in 1995, this was the case for public universities in fourteen countries (see table 3.10). It is particularly in this area that many reforms have taken place: line item budgeting existed in twelve countries in 1995 but this had reduced to six countries by 2008.

Table 3.10: The level of flexibility of European public universities in using their public operational grant (N=33)

Level of flexibility	1995	2008
Low	Austria, Croatia, Cyprus, Finland, France, Germany, Greece, Romania, Slovakia, Slovenia, Switzerland, Turkey	Bulgaria, Cyprus, France, Greece, Slovakia, Turkey
Medium	Bulgaria, Hungary, Lithuania, Norway, Poland, Sweden	Latvia, Lithuania, Poland, Slovenia, Sweden
High	Belgium (Flanders), Belgium (Wallonia), Czech Republic, Denmark, Estonia, Iceland, Ireland, Italy, Latvia, Malta, Netherlands, Portugal, Spain, United Kingdom	Austria, Belgium (Flanders), Belgium (Wallonia), Croatia, Czech Republic, Denmark, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Romania, Spain, Switzerland, United Kingdom
Legend: low flexibility = the public grant is allocated under expenditure headings (e.g. staff, operational expenses, infrastructure) that have to be strictly complied with; medium flexibility = the university is free to use the grant, but the grant distinguishes broad activity headings that need to be complied with; high flexibility = the university can use the grant flexibly to cover different categories of expenditure.		

3.2.5 Conclusion: the autonomy of public universities in Europe

Looking at the four dimensions of institutional autonomy that we distinguished earlier we would characterise the situation for 'Europe as a whole' in 2008 as follows:

- Levels of *financial autonomy* are in general high. Public universities in most European countries are able to manage their own financial affairs. There are examples of restrictions on the financial autonomy of public universities, but, as concluded in other higher education studies (e.g. Eurydice 2008, OECD 2008), it is clear that over the past 15 years the financial autonomy of public universities has increased significantly.

- Levels of *policy autonomy* are also high but less so than in the case of financial autonomy. In many countries public universities can take their own decisions on their size and profile (in terms of students, staff and programmes), but the picture is not a uniform one. For example, the autonomy of public universities on staffing matters differs across Europe as does the ability to determine the number of students and/or selection criteria for student admission. In terms of programming teaching and, particularly, research public universities in most countries have significant freedom. Across Europe policy autonomy is generally medium to high and this level has not changed materially since 1995. This does not mean that no reforms have taken place in terms of policy autonomy. On the contrary, a number of reforms have occurred (see Appendix 1), but the net effect for Europe as a whole is marginal. For example, the ability to select senior academics and bachelors students has increased in some countries but decreased in others.

- The level of *interventional autonomy* is medium; there are a significant number of accountability requirements, but the number of countries in which public universities have low interventional autonomy is small. However, it is clear that formal accountability requirements have increased significantly in

the period between 1995 and 2008. In many countries interventional autonomy changed from high to medium over the period. The formal requirements to report on the quality of teaching and research account for much of this shift. The OECD (2008: 14) finds that "the development of formal quality assurance systems is one of the most significant trends that affected tertiary education systems during the last few decades". However, in most countries public universities can decide independently on the internal evaluation methods to use.

- In the majority of countries the *organisational autonomy* of public universities is rather low. This conclusion is supported by the outcomes of the EUA study amongst others. With respect to "the universities' ability to establish their structure and governing bodies, and to define the modalities of its leadership model" the study concludes that "governance structures and leadership are often strongly shaped by national legislative frameworks" (EUA, 2009: 11). While our study reveals that organisational autonomy increased slightly between 1995 and 2008, this increase is less than what might be expected given the large number of reforms reported in the literature. One of the reasons for this is that some of the reforms go in different directions: on the one hand we witness less detailed regulations for universities' internal governance structure, but on the other hand we see new supervisory boards with external membership introduced through legislation. Moreover, while the nature of government regulation of internal university governance has been relaxed, in many countries guidelines still have to be taken into account.

Put succinctly, we reach the following conclusions for Europe as a whole. In the period between 1995 and 2008 many reforms have taken place. As the result of these reforms the financial autonomy of public universities has increased significantly, organisational autonomy has increased marginally, policy autonomy has remained at much the same level overall, and interventional autonomy has decreased significantly. Thus, while recognising that there are important differences between higher education systems, *overall institutional autonomy has grown, creating opportunities for public universities to act as more integrated organisations and to determine their own profiles and strategies, but this is not the case in all dimensions of autonomy; public universities in several countries face limitations on their managerial flexibility; particularly in terms of internal governance arrangements and formal accountability requirements.* This conclusion is broadly in line with the conclusions of other major comparative studies and reports (such as the CHEPS consortium, Eurydice, OECD and EUA studies).

3.3 Europe's modernisation agenda and governance reforms

In the first two sections of this chapter we have presented an overview of higher education governance in Europe over the last fifteen years with a particular focus on

understanding the changes that have occurred in terms of different dimensions of institutional autonomy. In this section we attempt to relate these reforms to the modernisation agenda of the European Commission which is the major European policy document concerned with higher education reform and the improvement of European higher education and research performance.[13] The European Commission sees the modernisation of Europe's universities as a core condition for European competitiveness in an increasingly global and knowledge-based economy as well as being "necessary in order to reinforce the societal roles of universities in a culturally and linguistically diverse Europe" (COM 2006, p.2). In the Commission's view, changes are needed as European universities are currently not realising their full potential. In table 3.11 the governance elements of the modernisation agenda are summarised.

Table 3.11: The governance aspects of Europe's modernisation agenda

- Develop or maintain trustworthy quality assurance systems.
- States should avoid over-regulation and micro-management of the HE system. They should guide universities through a framework of general rules.
- States should focus on the strategic orientation of the system as a whole.
- Institutional autonomy should be enhanced and universities should accept full institutional accountability to society at large for their results. Universities should be responsible and accountable for their programmes, staff and resources. Institutional autonomy is a pre-condition to adequately respond to changes.
- Universities should develop new internal governance structures. Empowering universities to take and implement decisions effectively requires top-level leadership and management with sufficient powers. There also should be effective external representation in university decision making.
- Universities should overcome internal fragmentation. Institutional strategy setting and the professionalisation of leadership and management are recommended.
- In state-university relationships multi-year agreements ('contracts') between state or regional governments and universities, setting out agreed strategic objectives, are suggested.
- States should encourage their universities to develop structured partnerships with the business community (to contribute to economic development, improve the career prospects of researchers, increase the relevance of education programmes, create more possibilities for patenting and licensing, and develop additional sources of funding).
- States should ensure a sufficient level of funding for higher education. States should examine their current mix of student fees and student support schemes in the light of actual efficiency and equity.
- University funding should be focused on relevant outputs rather than on inputs. Funding should be adapted to the diversity of institutional profiles.
- States should strike the right balance between core, competitive and outcome-based funding. Competitive funding should be based on institutional evaluation systems and on diversified performance indicators.
- In a world of increased competition, universities need to be in a position to attract the best academics and researchers, to recruit them by flexible, open and transparent procedures, to guarantee full research independence and to provide staff with attractive career prospects.

In the next table we relate the trends in governance reform outlined earlier to the different aspects of the modernisation agenda.

[13] As in the case of institutional autonomy we do not use the modernisation agenda as a normative benchmark. What we are interested in here is the extent to which higher education governance (and funding) arrangements across Europe match those advocated by the modernisation agenda.

Table 3.12: The modernisation agenda and governance reforms in European higher education

Aspect of the modernisation agenda	Governance reforms in Europe
Quality assurance systems	This has been a major reform area in European higher education, linked to the Bologna process. In nearly all countries public universities are today obliged to have internal and external quality assurance systems for teaching; in 1995, this was mandatory only for some 'early adaptors' in the field of quality assurance. As regards quality assurance systems for research, we see more institutional freedom. In many countries having external and particularly internal quality assurance systems for research is a matter for universities to decide.
Institutional autonomy in terms of students	In just over one-third of European countries public universities can decide for themselves on the criteria to select their students and on the number of study places. In the other countries – most of them advocating open access policies in the sense that universities have to take all qualified students unconditionally – the possibilities for universities to select their students are more limited. In some countries public universities can select their students after the number of state funded study places is full. Over the last 15 years there have been few reforms regarding student selection and the number of study places.
Institutional autonomy in terms of staff	In 11 countries public universities have considerable freedom to select their own academic staff and decide on academic salary levels. In other countries public universities can select their academic staff but salaries are set (or limited) by government. There are eight countries in which public universities have low levels of discretion in staffing matters. In three countries major reforms were implemented to give universities more leeway in staff appointments and setting salaries. In most countries no significant reforms in this area were introduced in the last 15 years.
New internal governance structures	In the vast majority of countries reforms took place that in one way or another are related to internal governance structures. In some countries the legal status of universities changed – for example from state entities to legally autonomous public organisations. In several countries internal governance structures have changed in such a way that the powers of executive leadership, frequently appointed rather than elected, have been increased, usually at the expense of the powers of internal stakeholder representative bodies. In a number of countries new governing bodies at the top level of the universities have been established ('board of trustees') – many of them having a majority of external members but with different powers and responsibilities in different countries. The internal governance of public universities is in many cases still state regulated, although in general these regulations are not as detailed as they used to be.
Institutional strategy development and multi-year agreements	In the period 1995-2008 strategy development at the institutional level has gained in importance. In 2008 public universities in about two-thirds of the countries are obliged to produce some sort of strategic plan; in 1995, this applied to one-third of the countries. In countries where this is not mandatory most institutions produce such plans of their own accord. In terms of state-university relationships there is a huge variety of 'contractual' relationships, ranging from purely financial contracts to more comprehensive contracts and multi-year agreements on goals and performance.
Accountability	The requirements for public universities to account for their activities have increased. Another indicator of accountability to society at large is the establishment of new top-level governing bodies with external membership. The most obvious change with respect to formal accountability requirements is the obligation in many countries to have evaluation systems for teaching, and, to a lesser degree, for research in place.
Partnerships with business	In the vast majority of countries public universities have significant opportunities to enter partnerships with other HEIs and/or with the public or private sectors. In some cases specific regulations must be taken into account, but in general public universities are able to establish such partnerships at their discretion.
Financial autonomy	In most countries public universities enjoy significant financial discretion; they can by and large freely decide how to allocate their financial resources. In many countries reforms took place between 1995 and 2008, usually shifting from line item to lump sum funding systems. In about three-quarters of countries public universities do not have the possibility to borrow money from the capital market or can do so only within ministerial regulations. In half of the countries public universities cannot build up financial reserves.

This analysis allows us to offer some *tentative reflections* on the modernisation agenda and a decade of reforms in European higher education. The European Commission urges that trustworthy quality assurance systems should be developed or maintained. In respect to teaching, many reforms have taken place in this area and where no reforms occurred such quality assurance systems were frequently already in place. This aspect of the modernisation agenda is thus increasingly becoming a reality in Europe. (The extent to which quality assurance systems are seen to be trustworthy by different actors is a matter that goes beyond the scope of this study.)

While state regulation is still visible in many countries, there are clear tendencies for states to withdraw from micro-management without giving up responsibility for system strategy and system performance. In some former communist countries we see a second wave of reform after the drastic changes in the early 1990s, where states have tried to reposition themselves to be better able to steer their higher education systems.

Empowered executive leadership and a stronger emphasis on the strategic profiling of institutions are likely to contribute positively to overcoming internal fragmentation within universities as the European Commission wishes. However, in many countries not all of the conditions necessary to facilitate the establishment of more integrated organisations are in place. For example, in some countries public universities cannot select their students and have to accept all qualified students; or cannot determine salary levels which would allow them to attract the best staff.

Significant financial discretion for public universities is another aspect of the modernisation agenda that seems to have been accomplished in many European higher education systems. Lump sum funding systems have replaced line item funding in many countries, which has substantially increased the institutional room for manoeuvre. However, in about three-quarters of the countries public universities can not borrow money from the capital market and in half of the countries it is not possible to build financial reserves.

3.4 Other observations on higher education reforms across Europe

In this chapter we have focused until now on governance reforms that relate to the different dimensions of institutional autonomy and to the different aspects of the modernisation agenda. To conclude our discussion on governance reform we highlight a number of other aspects of governance reform that emerged from our study.

3.4.1 The timing of reforms

While the drivers of governance reform (e.g. fiscal constraints related to mass higher education, internationalisation and globalisation, the appeal of new public management approaches; see chapter 2) have been the same in many countries, the timing of governance reforms has differed significantly across Europe. Some

countries such as the United Kingdom, the Netherlands and Sweden started to transform their higher education governance systems before the 1990s. Other countries such as France and Germany are relative late-comers. The former communist countries in Eastern Europe followed in general a different reform path; many changed their higher education governance systems fundamentally and rapidly in the early 1990s. Later new political realities (e.g. entry into the European Union) and the experience gained from the initial governance reforms led to a new wave of reforms.

3.4.2 Related reform areas

Governance reforms in European higher education do not take place in isolation. In many countries reforms in the areas of quality assurance and funding have been linked with governance reforms. Quality assurance and accreditation have been one of the main reform themes in Europe, particularly after Bologna and these reforms have had a significant impact on governance. For this reason, formal requirements for the evaluation of teaching and research were included in our assessment of the level of policy autonomy. Other examples of the direct relationship between governance and quality reforms are the introduction of new degree structures or new national agencies for quality assurance and accreditation. The indirect influence of quality reforms on governance are described in a number of the national system analyses (see Volume 2).

Funding reforms are in many cases also related to governance reforms. We indicated earlier that the financial autonomy of European public universities has increased over the past decade. Other general observations on funding reforms (which are presented in more detail in the report of the parallel study on Progress in Funding Reform) are a shift from line item budgeting to lump sum funding systems for public grants, a greater emphasis on competitive research funding, and more emphasis on output-based funding mechanisms. The question of private financial contributions to higher education remains a highly controversial issue. There is a high degree of divergence across states when it comes to increasing the private contributions to higher education by means of tuition fees. Some countries have no tuition fees; others have had them for years. Some countries have introduced tuition fees only to abolish them a few years later. Germany has tuition fees only in some regions. Other countries have them only for particular groups of students.

3.4.3 Mergers and partnerships

The institutional landscape of European higher education has seen many changes. In a number of countries there have been reforms aimed at the enlargement of the scale of institutions both within and across higher education sectors. These reforms include mergers, integration, structural collaboration and strategic alliances in Norway, Denmark, Finland, Flanders, Hungary and the Netherlands. Many of these processes have been initiated by the state. For example, in Denmark twenty-five universities and research institutions were reduced to eight universities and three

research institutions in 2007 as a consequence of the government's globalisation strategy *Progress, Innovation and Cohesion*. The main aim of the mergers is to strengthen Danish higher education and research, sharpen its profile, and improve the competitive edge of Danish universities.

In other countries many public universities have decided themselves to establish lasting partnership relations with other organisations (within and outside higher education). The outcomes of our study show that the vast majority of European countries have granted their public universities significant leeway to establish such relationships such as public-private partnerships for long term research projects or joint degrees. In 2008, public universities in sixteen countries could enter these kinds of partnerships without significant legal restrictions.

3.4.4 Changes beyond the public university sector

The primary focus of this comparative study of governance reform across Europe is the public university sector as this is the only sector that exists in all 33 countries (and is – with the exception of the Netherlands and Belgium - the dominant sector in terms of student enrolment).[14] Nevertheless important reforms have also taken place in a number of European countries that concern the introduction or growth of new higher education sectors – the universities of applied sciences – or the conditions under which private higher education providers are permitted to operate in different countries (see the overall analysis of governance and funding reforms by country in Appendix 1).

3.4.5 Private higher education: governance and funding developments in Europe over the past decade

This section provides an overview of the major trends in the governance and funding of private higher education sectors, in particular in the six countries in our study where enrolments in this sector exceed 20% of total higher education enrolments (Bulgaria, Estonia, Latvia, Poland, Portugal and Romania).

There is a large variety of private higher education institutions in Europe. The majority of them focus on disciplines in high student demand which are relatively inexpensive to provide such as law, business and languages. Some of the private providers are funded by religious donors, some are off-shore branches of universities in other countries and some are family run businesses. In terms of educational programmes, some emulate American liberal arts education, while others try to offer

[14] Our aim was that the governance and funding questionnaire(s) for each country should cover a set of institutions that between them enrol 80% of the higher education students in the country. This means that small specialised sectors with particular governance or funding arrangements were ignored (Military Colleges, Music Conservatoires, Fine Art Academies, Church-based institutions…). Also public or private university or non-university sectors were ignored if their enrolments were less than 20% of the total.

a variety of flexible programmes for adult learners including through distance education. The private sector has been the fastest growing higher education sector in Central and Eastern Europe for the last decade and is much more prominent there than in Western Europe.

In his influential book, Geiger (1986) describes three main roles of private higher education. The first role is to provide better services as part of the elite higher education. Such private higher education institutions exist in France, US, Japan. The second role of private providers is to provide different services, such as religious based education. The third type of private providers which is the most prominent in the recent growth in private provision, are institutions that absorb demand that is not met by public institutions. Governments lack the resources to fund a massive expansion of the public higher education sector and allow the private institutions as an alternative. This is the dominant role of private higher education in the six countries with the highest proportion of private students in Europe.

Altbach (2005) notes that private HE sector is seldom totally private. The state is usually an important actor in assuring the quality and accrediting private HE institutions and their programmes. In this way the state exerts certain standards and controls. Moreover, in most countries, public funds are available to the private sector through a variety of mechanisms such as competitive research funds, or state subsidised student loans or grants. Such developments are seen in Bulgaria, Poland, Romania, and Portugal, although some of these systems have only recently established student loan systems. However, the bulk of private providers' funds come from students, thus, private universities are highly dependent on student tuition for the major proportion of their income.

Given the wide variety of private higher education providers it is very difficult to generalise about governance arrangements. Rapid deregulation of the higher education sector occurred in five of the countries after the fall of communism. In the 1990s the five Central and Eastern European countries allowed private providers to enter the higher education sector (Portugal had done this in the mid-1980s) and to fill in the growing demand for higher education in the societies. This led to a substantial expansion of the higher education sectors. During the first years of their establishment in the 1990s private universities in the five countries functioned in more or less of a legislative vacuum and were in large part free to decide on their internal governance structures and modes of operation. In Bulgaria for example, the recognition of private universities and the requirements for their establishment were legislated in 1995. All five governments increased requirements for the accreditation and other quality assurance procedures both for public and private providers. In all countries national bodies for quality assurance and accreditation were established which play a major role in institutional and programme accreditation of private higher education institutions. Quality assurance has shifted in general from input control to more output control.

In all six countries the role of the Ministry responsible for higher education in relation to the establishment of new private institutions is to ensure that they meet

legal, financial, capacity and programme offering requirements. In Portugal, for example, once established, private higher education institutions are free to determine their own missions and strategies but subject to the important provision for private institutions that all new study programmes need approval from the Ministry.

In general, private institutions are free to determine their own internal governance structure, their own modalities of leadership and management, their own staffing and salary policies (although the number of professors – even if only part-time – is typically a key accreditation criterion), the numbers of students to admit and the selection criteria to employ, and the level of tuition fees. They also enjoy high levels of financial autonomy and (with the exception of quality assurance/accreditation) interventional autonomy. Research programming is not a significant issue for the teaching-orientated majority of private institutions.

The overall trend of the higher education reform geared towards financial autonomy from the state facilitated the access of private higher education institutions to public resources through competitive research funding as well as student loan schemes. The generosity of the public purse depends on the individual system. In Poland, students were incorporated into the state student financial support system in 2001, which includes merit based scholarships, means tested scholarships and student loans. The other countries have been less active in this respect and only recently have discussed the introduction of student loans which are also applicable for students studying in the private sectors. European governments have increasingly encouraged research consortia with public and private partnerships, which potentially benefits private higher education institutions. For example, in Romania public and private higher education institutions can enter local, regional, national and international partnerships with other public and/or private organisations when bidding for national research funds from Research Councils.

3.4.6 Universities of Applied Science: governance and funding developments in Europe over the past decade

This section provides an overview of the major trends in the governance and funding of the university of applied science sectors, in particular in the ten countries in our study where enrolments in this sector exceed 20% of total higher education enrolments (Belgium, Denmark, Estonia, Finland, Germany, Ireland, Lithuania, Netherlands, Portugal and Switzerland).[15]

[15] Estonia and Portugal both have significant private university of applied science sectors. This section focuses on the public sectors while the discussion in the previous section relates to the private sectors (including universities of applied science where applicable).

Looking at the European universities of applied sciences sector (UAS)[16], we can see many commonalities across the countries, but there are also some important differences and peculiarities.

In Europe the UAS are financed mainly by the state and primarily have a teaching mandate. The research function is not as prominent but is growing in importance in many countries usually with an applied focus and related to educational programmes. Traditionally, UAS were more regulated by the state than universities and had less autonomy in determining their internal governance structures and in financial and human resource matters. As a result of the professional nature of their teaching and applied research, UAS have tended to have strong links with local industry and business, which can be also seen as an important factor for the employability of students as well for external stakeholder participation in the steering of educational programmes and research.

The major differences in the UAS sector across the countries include history, the share of UAS in the overall higher education system, the varied size of the institutions, entrance requirements and the types of degrees offered. As noted by de Weert and Soo (2009), the history of UAS differs. Some institutions have a long history and originated from mergers of smaller institutions. In other countries the sector has only been recently established (Austria, Finland, Switzerland). The UAS differ in terms of the degrees they offer. In some systems, UAS offer only bachelor level education such as in Estonia and Lithuania. However, the majority of countries offer both first and second cycle degrees. For example, UAS in Germany, Portugal, Belgium, Austria, Switzerland, Finland, and the Netherlands also offer master's degree. However, the number of master's programmes is quite restricted and limited to particular subject fields. In most countries governments decide which master's programmes will be eligible for public funding, such as in health sciences (De Weert and Soo, 2009).

The governance of UAS has traditionally been dominated by municipal/regional/state control. The majority of governments via the ministries plan the activities of the UAS and determine their governance structures. Decentralisation of responsibilities from the state to the UAS and centralisation of authority within the UAS have been key features in the governance changes in this sector during the past decade (as they have in the university sector). In addition, external stakeholders have been introduced into UAS governing bodies in most of the binary systems in Europe. The role of institutional management has been strengthened in many systems while the more recently established sectors (Austria, Finland and, Switzerland) started on this basis as well as with fairly novel public-private-local legal forms.

Planning of UAS funding and development by the national/regional authorities is increasingly done on a contractual basis. UAS in some countries are under the authority of the Ministry responsible for higher education (Estonia, Portugal), in

[16] This is the preferred international name for the sector in the majority of European countries with binary higher education systems. (European Network for Universities of Applied Sciences)

other countries they are accountable to local authorities (Cantons in Switzerland, Länder in Germany), the Flemish or Walloon communities in Belgium, municipal authorities in Finland).

In parallel with the increase in flexibility and autonomy of the UAS, an important governance device is national quality assurance requirements. The UAS are expected to develop their internal quality management procedures and ensure the quality of the professional education and are obliged to accredit their teaching programmes.

The major change in funding of UAS over the past decade is a shift from input based to output based, performance-related funding. This development is coupled with the diversification of the institutional funding base, where UAS can charge tuition fees (in most of the countries with large UAS sectors except for Finland) and can receive funding from third parties. These multiple sources of funding have brought a degree of financial flexibility for UAS management. Tuition fees are accompanied by some form of student financial aid usually need-based. The common forms of student aid are student grants and loans, which are interest free or have low state regulated interest rates (e.g. the Netherlands, Portugal and Germany). Belgium (Flanders) has developed a new learning account system for student financial aid, where the emphasis is put on the student learning outcomes and aid is in a form of a grant rather than a loan.

It is fairly common for the Ministries to have contractual arrangements with the UAS determining the number of study places and funding them according to a formula, which is based not only on the number of students but also on a variety of output indicators. The countries vary substantially in terms of performance based funding. In Germany, a system with a large UAS sector, performance based funding from the Länder constitutes up to 20% of the public appropriation.

Differences also exist across countries in terms of financial autonomy, often mirroring differences between their public university sectors. For example, in Germany in 2008 UAS are permitted to build up reserves and carry them forward from one year to the next while in Estonia, the UAS do not have such flexibility.

Finally, as the role of UAS in some countries is perceived mainly as teaching, they are not eligible for research funding from the national research councils (e.g. Estonia). However, in those systems which see UAS as important actors in applied research, competitive research funds are made available, for example in Belgium (Flanders) and Switzerland.

4 Higher education system performance

4.1 Introduction

This chapter introduces the performances of the 33 higher education systems that are studied in our research projects on governance and funding reforms.[17] Performance is a multi-dimensional issue which cannot be reduced to a single number. Therefore, and following the suggestions from the European Commission, we describe the performance of higher education systems along the following eight dimensions:

- Access
- Mature learners
- Graduation
- Employability
- International student mobility
- Research output
- Capacity to attract funding
- Cost effectiveness

Although we are using eight dimensions, system performance can never be captured fully; it has many more qualitative and quantitative aspects. The eight dimensions do capture the key activities of higher education: teaching, research and knowledge transfer. Moreover, for each dimension, two or more indicators were identified to represent the dimension in more detail. For each indicator, data for the years 1998, 2002 and 2006 was retrieved from existing international databases to guarantee international comparability.

Detailed information on indicators, definitions and data sources can be found in a *Note on Methodology* in Volume 2 of this report. This chapter concentrates on the differences between higher education systems as far as their performance is concerned. In the following sections, we show where improvements in performance have taken place. This performance information will be used in the next chapter, where we explore the links between performance and reforms.

The use of performance indicators always requires some caveats.[18] The first is that performances and their links to policies have to be evaluated within countries'

[17] The same performance dimensions, performance indicators and contextual background factors were used in both the governance reform study and the funding reform study. This chapter is therefore common to both reports.

[18] See the Note on Methodology (in Volume 2) for detailed specific comments on the individual indicators.

specific national contexts. Therefore, we also present some contextual background variables including demography, economic climate and investments in R&D and higher education.

Before presenting the indicators on system performances and background variables, we provide an overview of other attempts at measuring system level performance (section 4.2). Section 4.3 presents the performances of the 33 European higher education systems with respect to the eight dimensions. Using performance quadrants, we visualise changing performance in the period 2002-06. In the final section, we present contextual, background information on the 33 countries.

4.2 Indicators, rankings and visualisations of performance

A clear shift towards more quantitative evidence-based policies and reforms in higher education systems is now evident (Gornitzka, 2006). With the introduction of the Lisbon Strategy and the Open Method of Co-ordination in Europe, the need for system level performance evidence to assess progress is evident. The European Council has set the objective of "making European education and training systems in Europe a world quality reference by 2010". It has specified several quantitative EU objectives relating to higher education:

- An increase in the number of mathematics, science and technology (MST) graduates by at least 15% by 2010 (compared with 2000) whilst simultaneously reducing the gender imbalance
- Investing 2% of GDP in higher education (currently 1.3%), from public and private sources combined
- 3 million Erasmus students by 2012
- Spending 3% of GDP on research and development by 2010 (the 'Barcelona' objective) has implications for higher education, since about 22% of R&D spending in Europe goes into university-based research
- The objective that 12.5% of the adult population should participate in lifelong learning also relates to higher education, since it incorporates all levels of education (i.e. including ISCED5 and ISCED6)

To monitor progress towards the Lisbon objectives in education and training, the European Commission releases an annual Progress Report, examining performance and progress using a system of core indicators (EC 2008). The most recent Progress report (EC, 2008) uses the following indicators directly related to higher education:

- Public expenditure on tertiary education as a percentage of GDP (including R&D spending)

- Private payments to tertiary education institutions
- Household payments to tertiary education institutions
- Number and growth of tertiary students
- Number and growth of tertiary graduates
- Number of MST students and MST graduates (including breakdown by gender)
- Higher education graduates (ISCED 5 & 6), also per 1000 population aged 20-29 and 25-34 and further distinguished into 5A first degree and 5A second degree
- Foreign students enrolled in tertiary education (ISCED 5 & 6) as a percentage of all students enrolled in the country of destination, by nationality (European country or other countries)
- Percentage of students (ISCED 5 & 6) from the country of origin enrolled abroad (in a European country or other countries)
- Inward mobility of Erasmus students (students sent)
- Outward mobility of Erasmus students (students received)

To assess the quality of higher education at the institutional level, the European Commission makes use of two well-known international university rankings in its Progress Report: the *Academic Ranking of World Universities* (ARWU) from Shanghai's Jiao Tong University[19] and the *World University Ranking* (WUR) from the Times Higher Education (THE).[20] To assess how well a nation's higher education system performs, the Progress Report and the Breughel group (Aghion et al. 2008) count the number of universities that a country has in the Shanghai Ranking's Top 50 (or Top 500), correcting for country size (in terms of its population or student enrolment) to produce a ranking of country performance.

ARWU and WUR rankings shortcomings are well-known: an overemphasis on Nobel laureates and natural sciences, and a neglect of the education and knowledge transfer activities of higher education institutions. Rankings thus mostly cover research-intensive universities or specialised institutions, neglecting universities of applied sciences. Rankings are also extremely sensitive to the way nations organise their national research effort, whether within universities or public research laboratories. Moreover, using university rankings to assess a country's research performance is also biased as it is highly sensitive to game-playing, where some

[19] Released for the first time in 2003. The most recent ranking covering all subject areas was released in November 2009. See: www.ARWU.org.

[20] First released in 2004. Latest ranking (the Times Higher Education-QS World University Rankings) was published in autumn 2009. See: http://www.timeshighereducation.co.uk.

countries have decided to concentrate their higher education and research resources into a few universities specifically to boost their ratings. Aggregating national institutional ranks from one country into a national performance rank therefore fails to recognise that intra-system differences may well be larger than inter-system differences (Halffman, 2009).

The European Innovation Scoreboard (EIS) and The World Economic Forum's Global Competitiveness Index (GCI) are two frequently used benchmarking tools for comparing national innovation performance (*cf.* WEF, 2008). Both the EIS and GCI regard quality higher education and human resources as crucial for economies that want to compete in today's globalising economy. The GCI regards higher education and innovation as 'pillars of competitiveness'[21] and ranks countries on the basis of indicators ('hard data') and survey outcomes ('opinions') that measure aspects such as tertiary enrolments, availability of scientists, and patenting. The EIS distinguishes seven dimensions in its scoreboard, including Human Resources. This dimension captures the availability of high-skilled and educated people using indicators such as the number of Science & Engineering and Social Science and Humanities graduates per 1000 population, tertiary attainment, public-private co-publications, and patenting. The difference between the EIS and the GCI is that the EIS is based primarily on hard data, obtained from Eurostat (mostly its *Community Innovation Survey*) and Thomson ISI (publications data), while the GCI also relies heavily on a survey of business executives in the various countries.

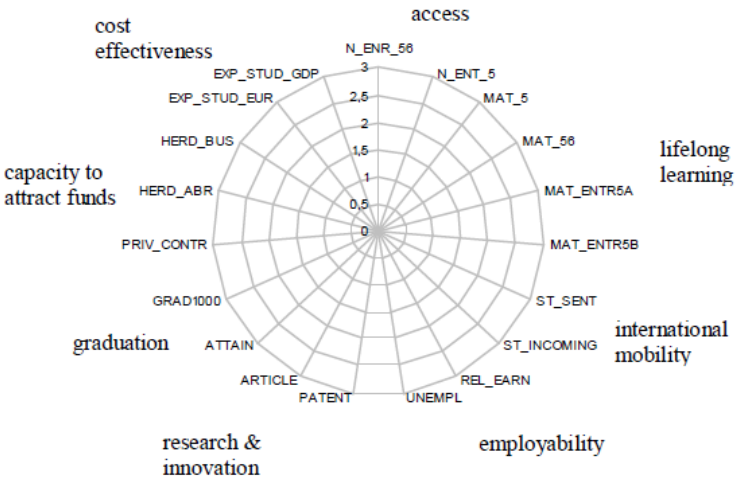
As illustrated in the following subsections, the higher education-related indicators used in the Commission's progress report, and the EIS and GCI indicators based on hard data do overlap with our selection of performance dimensions. Our performance indicators relate to aspects of the quantity and quality of education, lifelong learning, research and innovation. Quantity is measured through tertiary enrolment and the number of graduates in the population. Quality is difficult to capture by means of hard data, elements are approximated by considering graduate employment and earnings. In order to pay attention to HE's research and innovation functions, we incorporate publication and patenting data. Because the European Commission in its Modernisation Agenda has underlined the importance for HEIs of securing and diversifying their financial resource base, our dimension 'capacity to attract funds' reflects funds from households and third parties generated by higher education institutions. In addition, the 'cost effectiveness dimension' looks at measures that reflect the cost per student.

[21] The twelve pillars are: (1) institutions, (2) infrastructure, (3) macroeconomic stability, (4) health and primary education, (5) higher education and training, (6) goods market efficiency, (7) labor market efficiency, (8) financial market sophistication, (9) technological readiness, (10) market size, (11) business sophistication, (12) innovation.

For describing the performances of HE systems, each dimension will be represented by at least two indicators.[22] To visualise performance and progress, we make use of radar charts and performance quadrants.

For each of the 33 countries in our study, a *radar chart* presents the changes in all 19 indicators that underlie the 8 performance dimensions (see figure 4.1). The changes refer to the period 2002-2006. The radar charts show *index numbers*, taking the 2002 score as the base (=1). The 33 radar charts are included in the section on *National higher education performance data* in Volume 2 of this report together with tables showing the exact values. Radar charts allow a visual inspection of where performance changes are located for a given country. As far as performance change is concerned, we concentrate on changes in the recent period (2002-06) on the basis of the argument that reforms take time to sink in and have an effect.

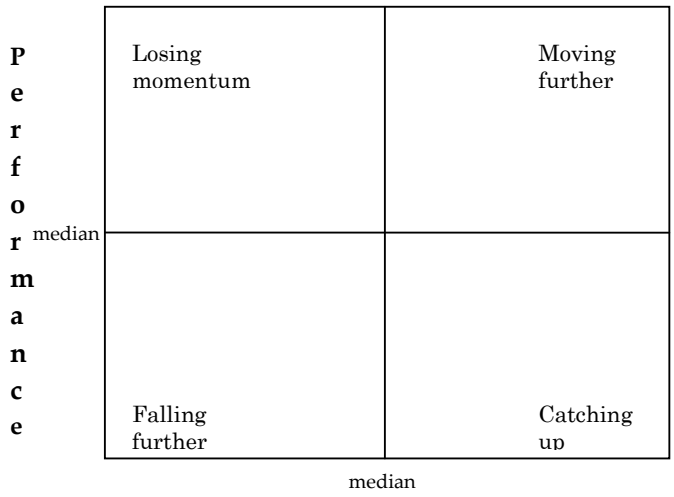
Figure 4.1: Outline of a radar chart



Having calculated national indicator scores on the 'current situation' (2006) and on the 'rate of change' over four years (2002-2006), we draw up *performance quadrants* that simultaneously present performance and progress across the 33 national higher education systems for each performance indicator. The 2006 performance is measured along the vertical axis. The change over the period 2002-2006 is shown along the horizontal axis. The performance quadrants categorize the countries into four groups, using the averages (the *median* values) of 2006 performance and the change over 2002-2006 as the cut-off points (see figure 4.2).

Figure 4.2: Outline of a performance quadrant

[22] We do not construct a composite index based on a weighting of indicators or dimensions, because it unduly reduces information and requires attaching arbitrary weights to the various dimensions.



On the basis of their values per particular performance indicator in 2002 and 2006, the quadrant categorises the countries' higher education systems into four groups:

1. Countries that are doing well in 2006 and that have further improved over the period 2002-2006 ('*moving further ahead*')

2. Countries that are still doing well in 2006 but that over the period 2002-2006 have improved less than the average for the 33 countries ('*losing momentum*')

3. Countries that in 2006 are performing below average, but that over the period 2002-2006 have improved more than other countries ('*catching up*')

4. Countries that in 2006 are performing below average and that over the period 2002-2006 have shown a change that is less than the average for the 33 countries ('*falling further behind*')

The performance quadrants form the basis of the analyses in the following chapter, where we investigate possible links between reforms and system performance across the 33 European higher education systems. The next section presents performance quadrants for the nine performance dimensions. Using the performance quadrants one can identify the *high performers* (that is: the countries having the highest absolute value for the given performance indicator) and the *high improvers* (the countries showing the largest change over the period 2002-2006). In the section on *National higher education performance data* (see Volume 2) we have included tables containing the detailed data on performance and progress for each indicator.

4.3 Performance in European higher education

To show performance in European higher education for our nine dimensions we have inspected 19 indicators that relate to the years 2002 and 2006. Since we cannot show the performance quadrants for all, we only look at a selection of indicators. The selected indicators and the performance area to which they belong are shown in the table below.

Table 4.1: Performance dimensions and selected indicators

Performance area	Indicators
Access	Net participation rate
Lifelong learning	Mature (> 30 years old) enrolment rate
Graduation	Share of population with tertiary degree
Employability	Relative graduate earnings
	Graduate employment
Research	Scientific articles
Capacity to attract funds	HE R&D income from business;
	Private (households') expenditure on HE
International mobility	Incoming EU+ students
	Outgoing EU+ students
Cost-effectiveness	Expenditure per student in Euro

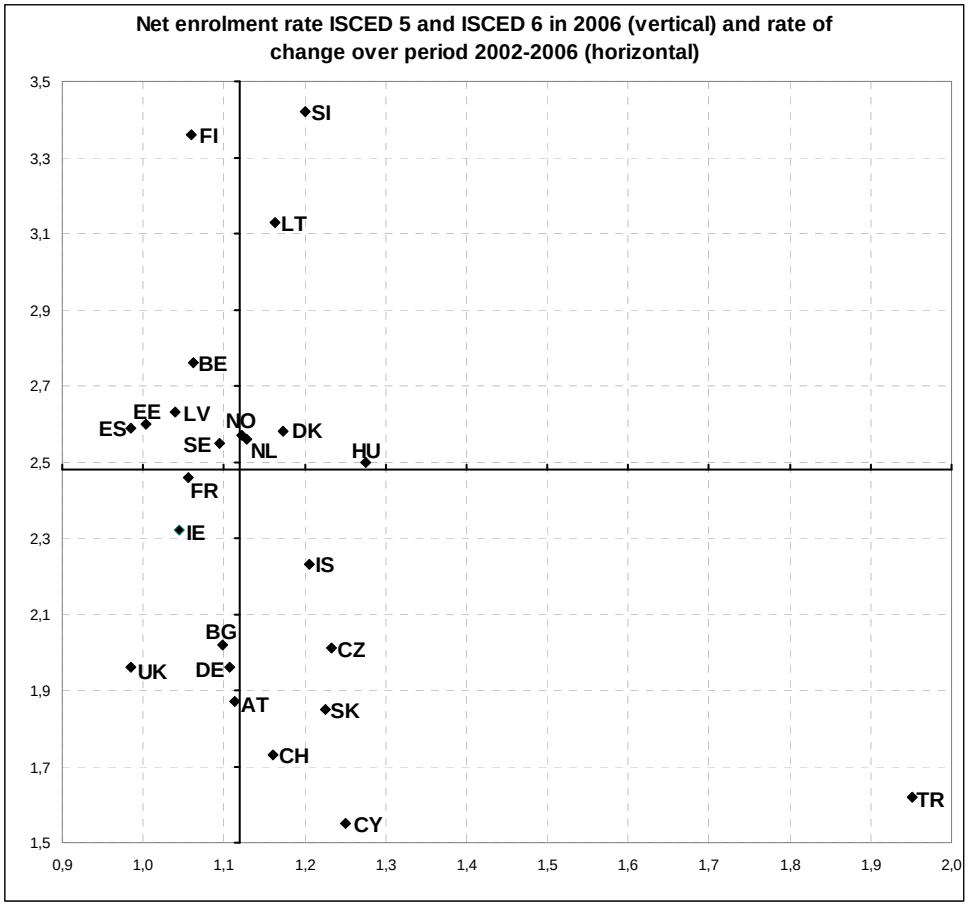
4.3.1 Access

To assess the countries' performance on the access dimension we make use of the following indicators:

- Entry rate of new entrants (17-29 year population cohorts)
- Net enrolment rate (17-29 year-olds), ISCED 5 & 6

In the performance quadrant (figure 4.3) we present data on the second indicator only.

Figure 4.3: Performance quadrant for the Access dimension



The access indicator measures the combined shares of the age cohorts enrolled in higher education. The graph illustrates that participation increased in almost all countries (in 22 out of the 24 we have data for). The median change over the period is 12%, with Turkey almost doubling the enrolment rate.

4.3.2 Lifelong learning

Europe's ambitions regarding the growth of higher education can be met only if more mature age students are enrolled. Our performance dimension Lifelong Learning looks at four indicators that measure the proportion of mature students (over 25, or over 30 years of age):

- The share of ≥30 year old students (ISCED 5, respectively ISCED 5 & 6) in total higher education enrolment
- The ratio of entry rates for 25-45 year old new entrants and 17-25 year old entrants (ISCED 5A, respectively ISCED 5B)

Figure 4.4: Performance quadrant for the Lifelong Learning dimension

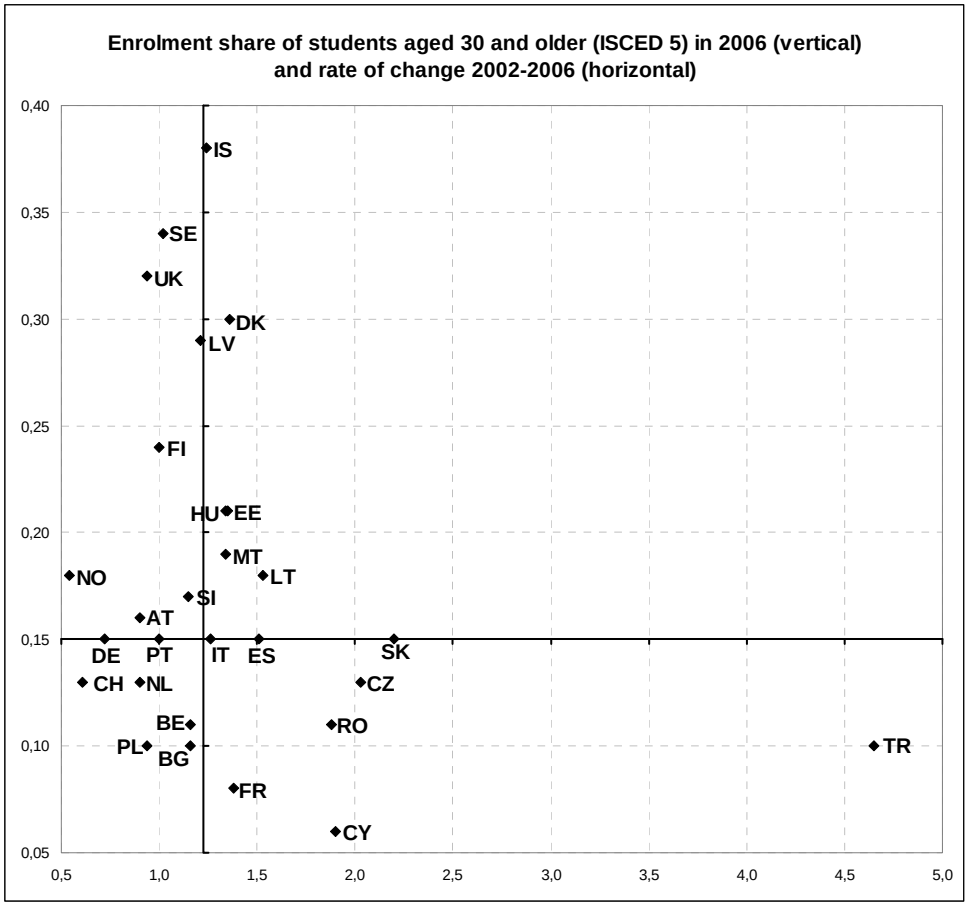


Figure 4.4 shows a performance quadrant based on the first indicator (for ISCED 5 students only). Out of the 28 countries for which we have data, there were 19 that increased their share of mature students (i.e. the index of change exceeds 1). The median change over 2002-2006 is 23% (as shown by the position of the vertical axis).

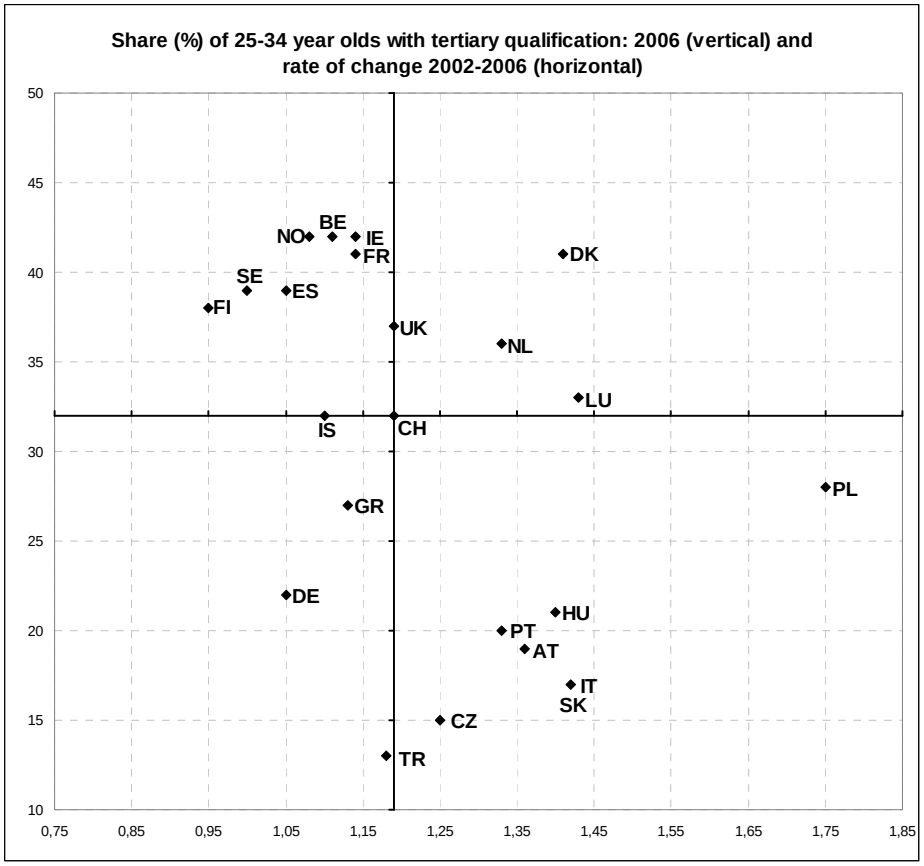
4.3.3 Graduation

The performance dimension graduation refers to educational attainment in terms of the following two indicators:

- Share of the population (25-34 year olds) with a higher education qualification
- Share of graduates (ISCED 5 & 6) in population aged 20-29

The performance quadrant (figure 4.5) relates to the first indicator. Out of the 23 countries in the quadrant, 21 have increased their educational attainment. The median change is 19% over the period 2002-2006.

Figure 4.5: Performance quadrant for the Graduation dimension



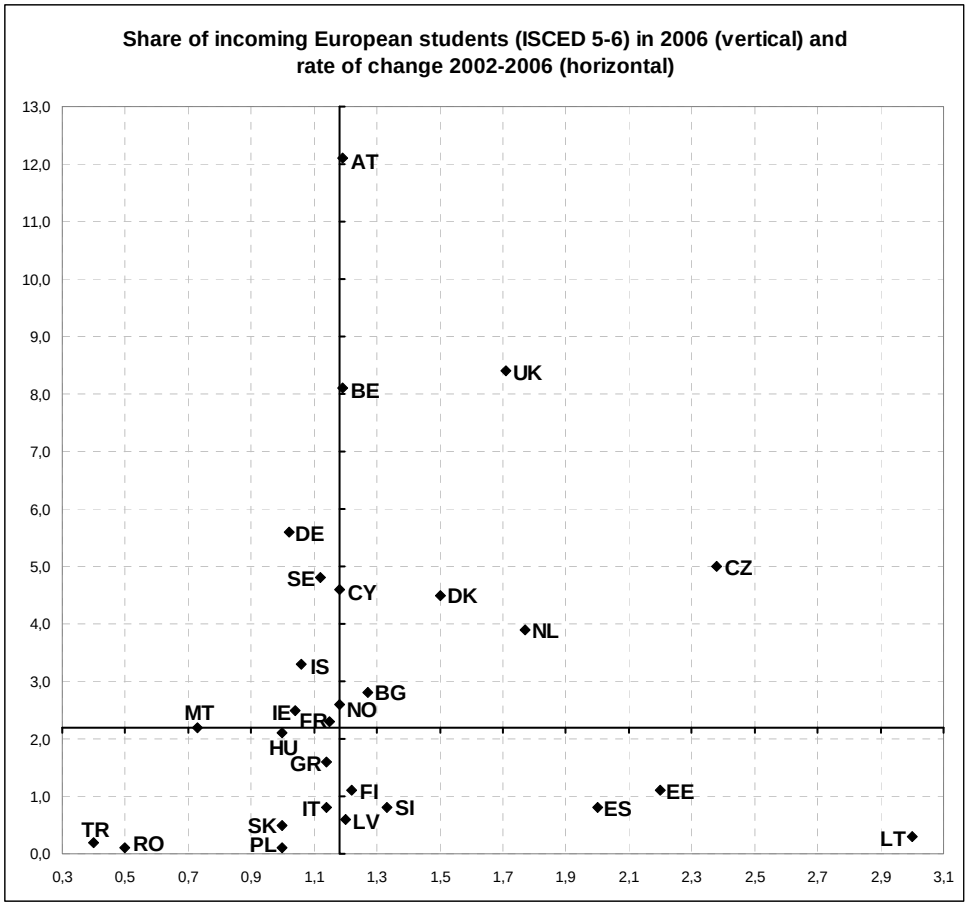
4.3.4 International mobility

High international student mobility is seen by policymakers as contributing strongly to the performance of the system. There are two types of international student mobility:

- Share of students incoming from other EU/EEA countries.
- Share of students sent out to other EU/EEA countries.

For both indicators we present performance quadrants (figures 4.6 and 4.7).

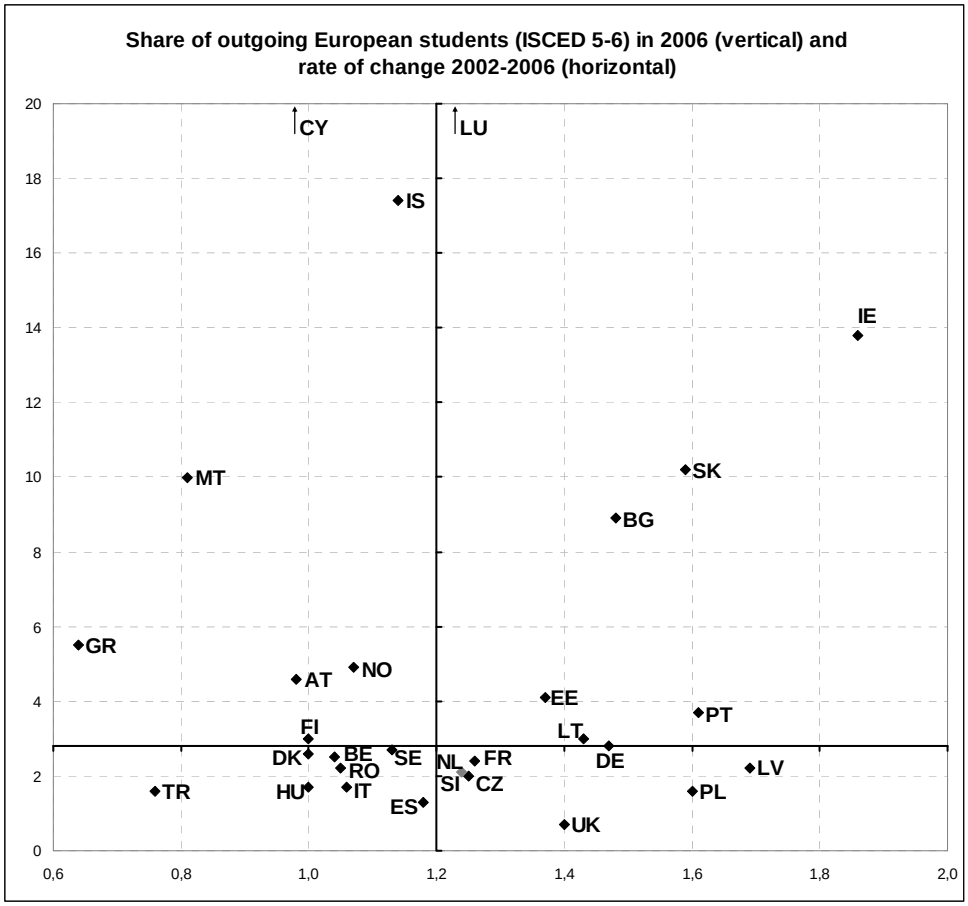
Figure 4.6: Performance quadrant for the International mobility dimension: incoming students



Out of the 28 countries in the quadrant for incoming mobility (figure 4.6), 22 have seen their international attraction towards others European countries grow. The median change is 18% over the period 2002-2006.

Out of the 30 countries in the quadrant for outgoing mobility (figure 4.7), 23 have seen a growth in the numbers of students going to other European countries. The median change is 20% over the period 2002-2006. Luxembourg (81%) and Cyprus (51%) have the highest shares of outward mobility.

Figure 4.7: Performance quadrant for the International mobility dimension: outgoing students



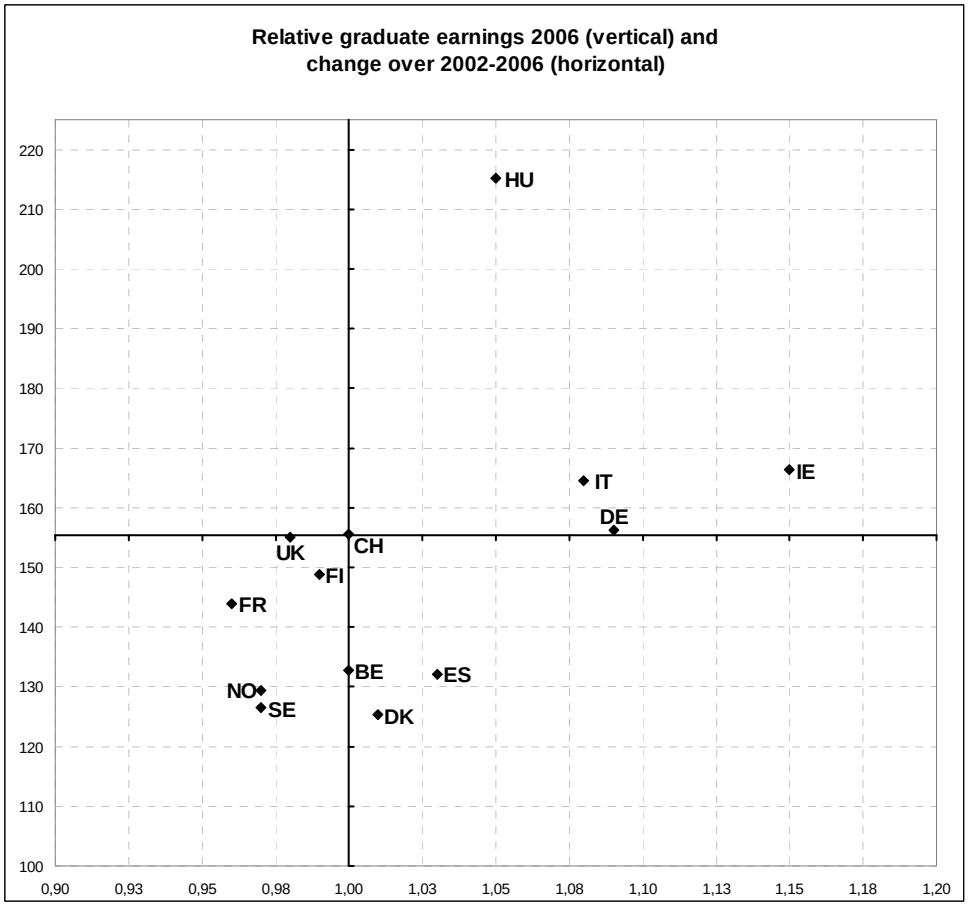
4.3.5 Employability

The Employability dimension captures the value of a higher education degree on the labour market. Indicators are:

- Relative earnings of tertiary education graduates (compared to upper secondary graduates)
- Relative unemployment of higher education degree holders (compared to upper secondary graduates)

For both indicators we show the performance quadrants (figures 4.8 and 4.9).

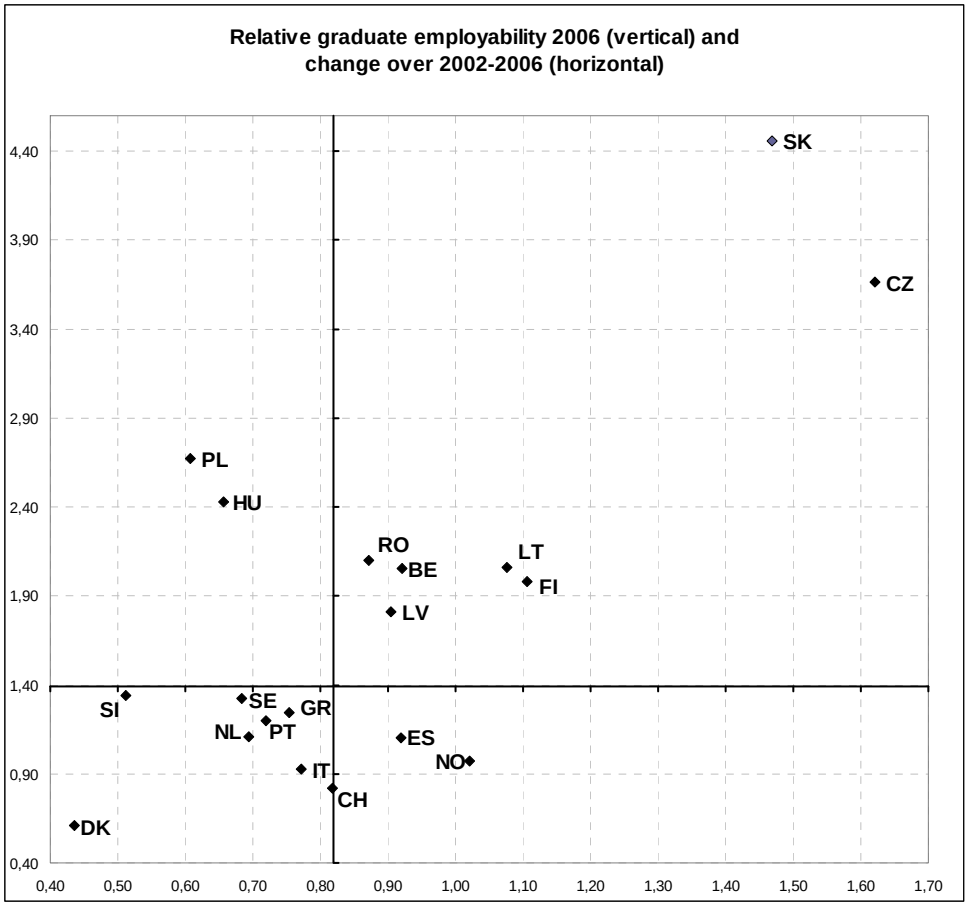
Figure 4.8: Performance quadrant for the Employability dimension: graduate earnings



In all of the 13 countries included in figure 4.8, graduates earn more in 2006 than those having an upper secondary degree (all values are above 100). Six countries have seen relative graduate earnings rise in the period 2002-2006; five experienced a decline; in two (Switzerland and Belgium) graduate earnings remained stable. The median growth is zero. Because data are derived from the OECD's Education at a Glance, many central and eastern European countries are not represented.

On average the unemployment rate of those holding an upper secondary degree is 40% higher than the unemployment rate for those having obtained a higher education degree (figure 4.9). In other words, employability is higher for graduates. The exceptions are Denmark, Switzerland and Italy, where the employability indicator lies below unity. In 5 out of the 19 countries that we have data for, graduate employability has increased over the period 2002-2006. As shown in the graph, in most countries graduate employability decreased. The median change is minus 18%.

Figure 4.9: Performance quadrant for the Employability dimension: graduate employability



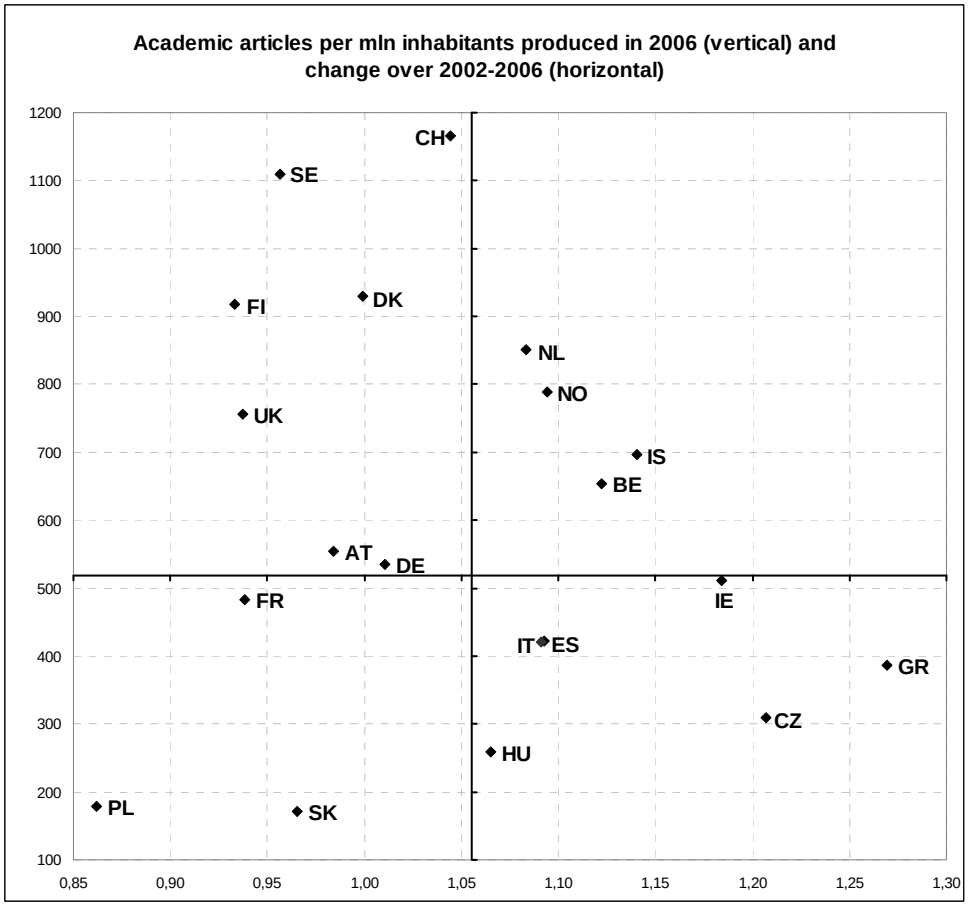
4.3.6 Research and innovation

The dimension 'Research and Innovation' captures research performance and some of the innovation activity in countries. Indicators are:

- Scientific articles per million inhabitants
- Patent applications to the European Patent Office (per million of inhabitants)

Figure 4.10 pictures the performance quadrant for the number of articles published in the countries that we have data for. In 12 out the 20 countries the scientific production increased over the period 2002-2006. The median change is slightly over 5%.

Figure 4.10: Performance quadrant for the Research & Innovation dimension: articles published



4.3.7 *Capacity to attract funds*

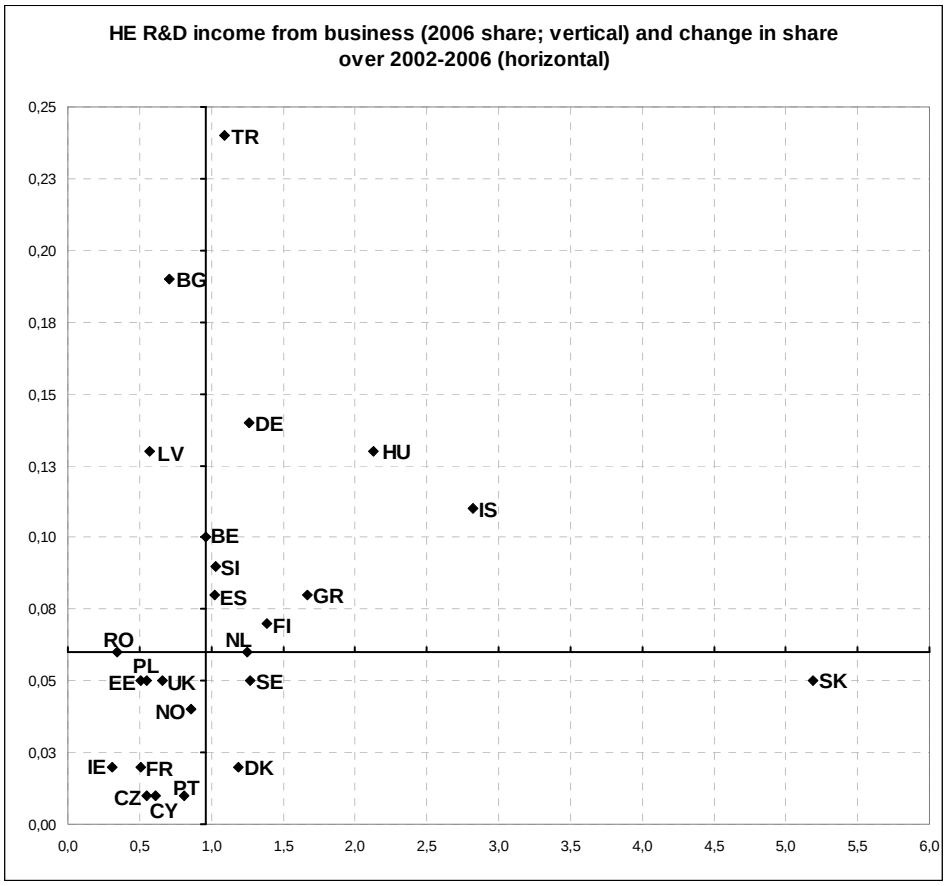
The dimension 'Capacity to attract funds' reflects the extent to which a country's higher education institutions receive revenues from non-government sources. Higher levels of external (third party, private) funding indicate a more financially robust position for higher education. Indicators are:

- Share of higher education institutions' R&D income from business and industry
- Share of higher education institutions' R&D income from international sources
- Share of private expenditure on HE institutions

We show the performance quadrants for the first and third indicator.

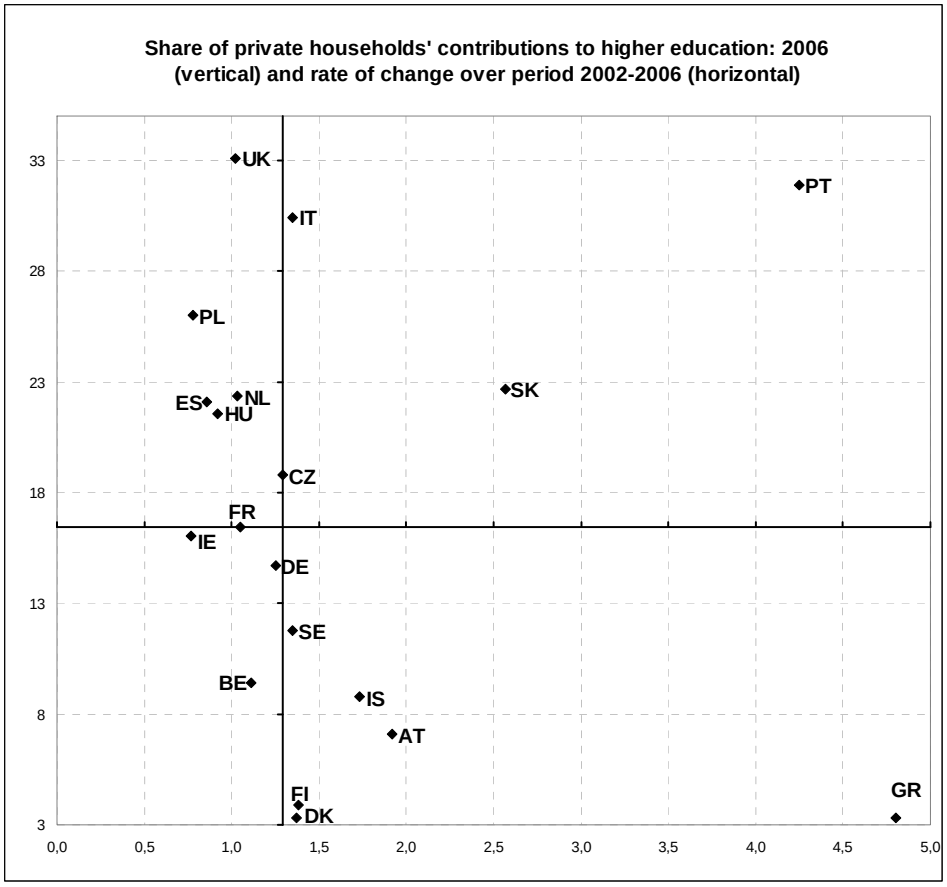
The graph for higher education R&D financed by industry (figure 4.11) contains data for 25 countries. In 12 of these countries, the industry's share increased. In 13, the share decreased. The median change over the period 2002-2006 is minus 4%.

Figure 4.11: Performance quadrant for Capacity to attract funds: % of HERD financed by industry



Private households' contributions to higher education largely consist of tuition fees. Figure 4.12 shows data for 20 countries. The bottom of the graph contains the countries where fees are absent (Nordic countries) or the share of private higher education is very small. In 15 countries, the households' share increased. The median change over the period 2002-2006 is 30%.

Figure 4.12: Performance quadrant for Capacity to attract funds: contributions from households



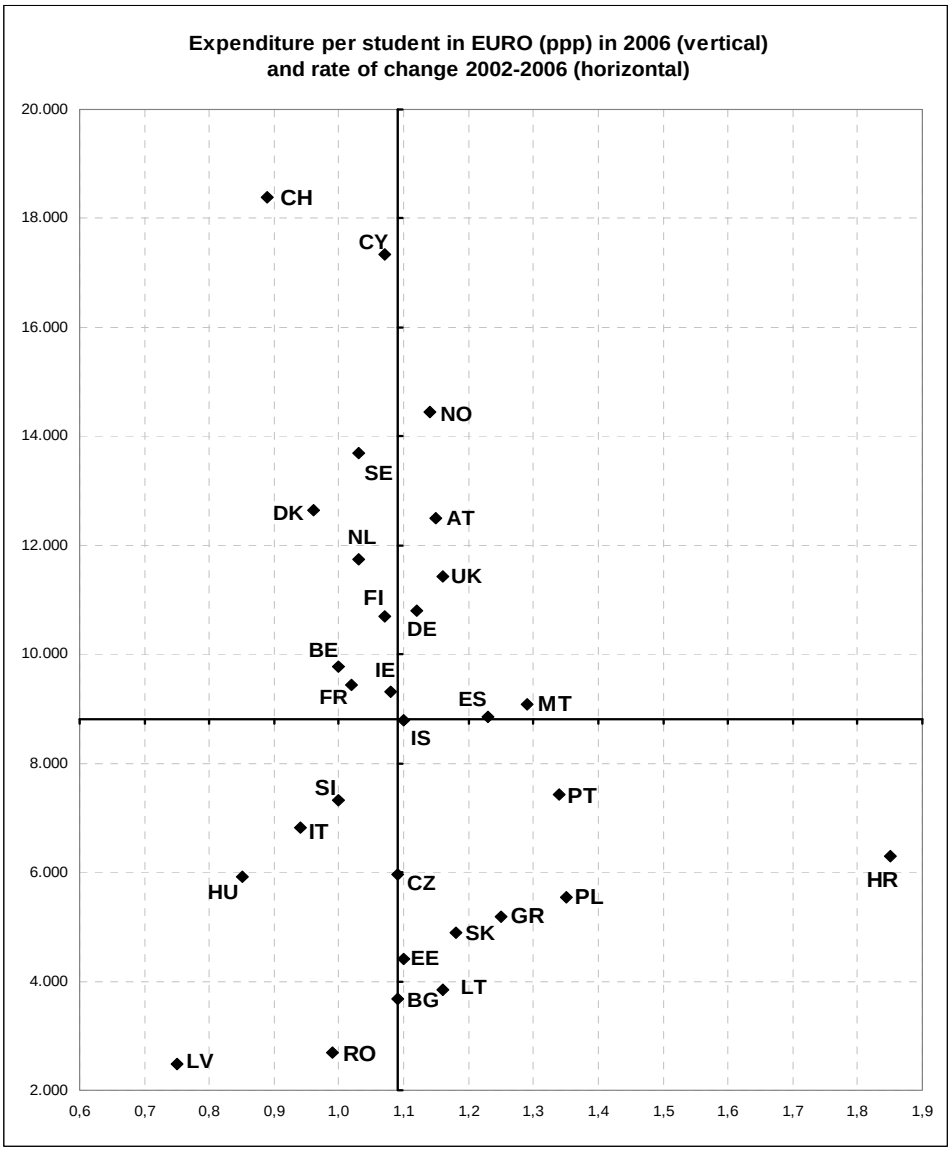
4.3.8 Cost effectiveness

Cost effectiveness is regarded here as a performance dimension since it reflects the expenditure allocated to higher education:

- Expenditure per fte HE student as a % of GDP per capita
- Expenditure in Euro (PPPs) per student in tertiary-level institutions

However, instead of a reflection of efficiency, one may also interpret these indicators as showing the importance a country attaches to higher education - thus relating national effort/investment to the student volume. Expenditure per student varies widely across the 29 countries covered in figure 4.13. It ranges from 2,500 Euro in Latvia to over 18,000 in Switzerland. On average, expenditure per student has increased 11% in the period 2002-2006.

Figure 4.13: Performance quadrant for Cost effectiveness dimension: expenditure per student



4.4 Background variables

When making cross-country comparisons based on the indicators presented in the previous section, differences in national contexts should be taken into account. To capture some of these context characteristics, we make use of a number of background variables. We have selected six context indicators:

- National unemployment rate
- Demographic structure

- An index of the competitiveness of the national economy (GCI)
- Public expenditure on higher education
- Expenditure on research and development activities
- Share of Science &Engineering students in the higher education system

The definitions and data sources of these background indicators, together with the country scores on them, may be found in the *National higher education performance data* section in Volume 2 of this report. Below we will give a short description only.

National differences in the general unemployment rates may have an impact on the performance of higher education systems. The impact on the employability dimension is an obvious one, but the labour market situation may also have an effect on performance dimensions such as Access and Graduation, as well as on the Capacity to attract funds. Unemployment rates can be seen as another indication for the general economic context.

The demographic context is taken into account by analysing the change in 18 year olds in the population. Strong fluctuations in the age group of 18 year olds (that constitute the traditional cohort of new entrants) may have a significant impact on the scores on indicators such as Access.

On a similar note, the Global Competitiveness Index (GCI) rank score of a country gives an overall indication of economic competitiveness. This also may have an impact on higher education performance. For instance, a higher GCI may coincide with a higher research output in terms of publications and patents. If competitiveness is high, university and industry may be more inclined to collaborate and this may be reflected in the business contributions to higher education R&D and the higher education system's capacity to attract revenues.

The overall expenditure on R&D (GERD; gross expenditure on R&D as a share of GDP) is an indication of the technology intensity and innovation orientation of a country. Higher levels of R&D are likely to boost higher education's research output.

A similar line of reasoning can be drawn for the context indicator 'public expenditure on higher education'. This indicator reflects the priority a nation places on higher education. The performance of the higher education sector at least partly reflects the level of national resources devoted to teaching and research.

A final context characteristic is the disciplinary mix in teaching and research activities. In countries that have a relatively high proportion of their higher education activities in science and engineering, the performance dimension 'cost effectiveness' may express a lower score. Also other dimensions, like access, employability and research output may be affected.

We are aware that there may be many other potential background indicators that capture aspects of the national context. Institutional frameworks, including a characterisation of the modes of regulation in the national innovation system, also may impact upon the functioning of higher education systems (Amable & Petit, 2001). However, a careful classification of 33 countries according to their modes of regulation would fall beyond the scope of our study.

Traditions, history and the stages of development achieved by a country also matter. Increasing enrolment rates is likely to represent an improvement of performance of higher education in countries that have yet to reach mass higher education, but this interpretation is not that straightforward in countries with already high levels of enrolments. Similarly, a good scientific performance for the most advanced countries is to maintain their share in the world's scientific publications or in the impact of their research, while for less advanced countries good performance would be to increase the total number of publications.

In other words, by taking some of these background aspects into account one may try to produce a more fair – 'controlled' – comparison of national higher education systems and their performances. However, all our performance indicators and background variables provide at best indications: we can offer no precise measures. This does not imply that the indicators we selected and described in the previous section are of no use in measuring performance. Rather, they allow comparisons to be made between countries, a powerful tool indeed when dealing with 33 countries. Yet, it must once more be stressed that much care has to be taken in interpreting data reflective of differing national contexts and priorities for higher education.

5 Possible links between governance and system performance

5.1 Introduction

In Chapter 3 we presented an overview of governance reforms across Europe. The number of reforms and in many cases their comprehensiveness and speed is impressive. Several aspects of the European Union's modernisation agenda have been met, although to differing degrees in different countries. The challenge of this chapter is to investigate the possible effects of governance on the performance of higher education systems on the different dimensions outlined in chapter 4. The key question to be answered is "does governance matter".

On the basis of the information presented in chapter 4 (and the underlying data in Volume 2) we identified for each of the 33 countries three or four dimensions where the performance improvement of the system was most striking. These dimensions were the focus of the interviews conducted at system level and (where applicable) the institutional case studies in the countries.[23] Interviewees were asked to indicate if they thought that improved system performances were linked to these reforms in governance and, if so, to explain the nature of this linkage. To summarise, for the analyses that follow we have used information and data from the Governance and Funding Questionnaire, the interviews at the system and institutional levels and quantitative data from international data sources.

In the sections that follow we look at each system performance dimension in turn[24], using the following approach. Other studies on governance and performance, as reported in chapter 2, suggest that institutional autonomy and funding are likely to be related to performance. In this chapter we categorise the 33 countries into four groups in terms of institutional autonomy and funding using five aspects of the modernisation agenda relating to institutional autonomy; the level of public investment in higher education; and the relative position of the country on the Global Competitive Index. We then analyse the outcomes of the national system analyses to see whether linkages can be found between system performance, governance reforms and the position of the country in terms of institutional autonomy and funding levels. Finally, since many studies argue that country specific contexts matter, a number of contextual variables were considered.

In the next section we present the categorisation of the countries in terms of institutional autonomy and funding levels.

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[23] The 33 national system analyses (including two institutional case studies in 15 countries) can be found in Volume 2 of this report.

[24] Please note that efficiency has not been included as a performance indicator as most respondents did not believe that this could be measured by cost per student data. For the dimension international student mobility we separated incoming and outgoing European students.

5.2 The categorisation of the 33 European countries

To categorise the countries on institutional autonomy based on the modernisation agenda we selected five items: the freedom of public universities to determine their internal governance structure; to start new bachelors programmes; to select their own staff and determine their salaries; to enter strategic partnerships; and their overall level of financial autonomy. We argue that these five items together are a good composite indicator of the level of institutional autonomy as advocated by the modernisation agenda.[25] Table 5.1 presents this information for 1995 and 2008.

[25] In chapter three we began by analysing institutional autonomy using dimensions used in the literature and then refined this analysis to focus on the various aspects of governance highlighted in the modernisation agenda. In the analysis of the relationship between institutional autonomy and performance in this chapter we have used an indicator based on five of these aspects. We have not included quality assurance, accountability and the development of strategic plans as the modernisation agenda argues that all three have a place in a modern system of governance. We have also omitted student selection given the mixture of "open access" and selective admissions policies across the 33 countries.

Table 5.1: Institutional autonomy in European countries based on five aspects of the modernisation agenda

	INTERNAL ORGANISATION	START NEW PROGRAMMES	SELECTION STAFF	FINANCIAL AUTONOMY	ENTERING PARTNERSHIPS	INTERNAL ORGANISATION	START NEW PROGRAMMES	SELECTION STAFF	FINANCIAL AUTONOMY	ENTERING PARTNERSHIPS
	1995					2008				
AT	○	○	○	○	○	◖	●	●	●	●
BE	◖		◖	●	◖	◖	◖	◖	●	◖
BG	◖	●	●	●	●	○	○	●	●	●
CH	○	●	◖	○	◖	◖	●	◖	◖	◖
CY	○	○	○	○	●	○	○	○	○	●
CZ	○	◖	●	●	●	○	◖	●	●	●
DE	◖	◖	◖	○	●	◖	◖	◖	◖	●
DK	◖	○	◖	◖	●	◖	◖	◖	◖	●
EE	◖	◖	●	●	●	◖	◖	●	●	●
ES	○	○	○	●	◖	◖	○	○	●	●
FI	◖	○	◖	◖	●	◖	○	●	◖	●
FR	○	◖	○	○		◖	◖	○	○	
GR	●	○	○	○	○	●	○	○	○	○
HR	●	○		◖	●	●	◖		●	●
HU	○	○	○	○	●	◖	○	○	◖	●
IE	◖	●	◖	●	●	◖	●	◖	●	●
IS	◖	○	◖	●	●	◖	◖	◖	●	●
IT	●	●	◖	●	●	●	○	◖	●	●
LT	◖	◖	◖	○	◖	◖	◖	◖	○	◖
LU						○	●	◖	◖	●
LV	◖	●	◖	●	●	◖	◖	◖	◖	●
MT	○	●	●	◖	●	○	●	●	◖	●
NL	◖	◖	◖	●	●	◖	◖	●	●	●
NO	◖	○	●	○	●	●	●	●	●	●
PL	◖	◖	◖	◖	◖	◖	◖	◖	◖	◖
PT	◖	○	○	◖	◖	◖	○	○	◖	◖
RO	○	○	○	○	◖	○	○	○	◖	◖
SE	◖	●	●	◖	●	◖	●	●	◖	●
SI	◖	○	◖	◖	●	◖	○	●	●	●
SK	○	◖	◖	○	●	○	◖	◖	◖	●
TR	○	○	○	○	○	○	○	○	○	◖
UK	◖	●	●	●	●	◖	●	●	●	●

● = meeting the modernisation agenda
◖ = meeting the modernisation agenda to so some degree
○ = not meeting the modernisation agenda
Blank = (complete) information not available

Note: Compressing detailed information into symbols requires simplification. The situation behind the symbol is complex and varies across countries with the same symbol.

Internal organisation: *● = Completely up to the universities // ◖ = leeway for the universities but guidelines or regulations must be taken into account // ○ = prescribed in detail by the government*
Starting new bachelors programmes: *● = completely up to the university // ◖ = up to the university but subject to accreditation // ○ = limited through national system capacity planning*

Selection of staff: ● *= appointments of senior academic staff and salary setting by the universities //* ◖ *= some limitations on appointments and salary setting by the universities //* ○ *= universities require government approval of appointments and/or government sets (limits to) the salaries of senior academics*

Financial autonomy: *high (*●*), medium (*◖*) or low (*○*) autonomy based on a combination of four items – internal allocation of funds, borrowing money on the capital market, building up financial reserves and flexibility in spending the public operational grant*

Entering partnerships: ● *= no limitations on public universities in entering partnerships with other organisations (public or private, in- or outside higher education) //* ◖ *= some limitations on public universities in entering such partnerships //* ○ *= public universities are not allowed to enter such partnerships with other organisations*

The information presented in the table reflects the conclusions of chapter 3: in 2008, most public universities have the freedom to enter strategic partnerships; in many countries they have a significant degree of financial autonomy; but their freedom to determine their internal organisation, to select their staff and set salaries, and to start new bachelor programmes is more mixed. When comparing the situation in 1995 and 2008, autonomy across Europe as a whole has increased on all five indicators - as advocated by the modernisation agenda. In sixteen countries we observe more institutional autonomy, but four countries enjoy lower levels of autonomy on these five items than they did in 1995 (particularly Bulgaria and Latvia). In 11 countries the overall position is relatively unchanged.

To categorise the countries we developed a simple index score: the more aspects of the modernisation agenda a country meets, the higher its score.[26] Based on these scores we divided the countries into four groups: countries that meet these aspects of the modernisation agenda to a large extent (high autonomy), countries that meet some of these aspects (medium-high autonomy), countries that meet a limited number of these aspects (low-medium autonomy) and those that meet hardly any of the five aspects of the modernisation agenda (low autonomy).

Table 5.2: A categorisation of European countries in terms of institutional autonomy based on the extent to which five aspects of the modernisation agenda are met

(1995 N = 31, 2008 N = 32)

Institutional autonomy	1995	2008
Low	Austria, Cyprus, France, Greece, Hungary, Romania, Turkey (7 countries)	Cyprus, France, Greece, Romania, Turkey (5 countries)
Low - medium	Denmark, Finland, Germany, Lithuania, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Switzerland (11)	Hungary, Lithuania, Poland, Portugal, Slovakia, Spain (6)
Medium-high	Belgium, Croatia, Czech Republic, Iceland, Malta, Netherlands, (6)	Belgium, Bulgaria, Czech Republic, Denmark, Germany, Finland, Iceland, Italy, Latvia, Luxembourg, Malta, Slovenia, Switzerland (13)

[26] 2 points for a 'full moon' and 1 point for a 'half moon'- the total score of a country is divided by the number of aspects for which we have data.

High	Bulgaria, Estonia, Ireland, Italy, Latvia, Sweden, United Kingdom (7)	Austria, Croatia, Estonia, Ireland, Netherlands, Norway, Sweden, United Kingdom (8)

The next two tables depict the categorisation of the 33 countries based on total public expenditure on higher education and their position on the Global Competitive Index (for the underlying data see the section on national performance data in Volume 2).

Table 5.3: A categorisation of European countries based on total public expenditure on higher education as percentage of GDP in 2006 (N=32)

Level of total public expenditure2006	**Country**
Low (0.19-0.91%)	Lichtenstein, Bulgaria, Italy, Romania, Croatia, Slovakia, Latvia, Turkey (8)
Low – medium (0.92-1.10%)	Estonia, Spain, Poland, Lithuania, Portugal, Hungary, Malta, United Kingdom (8)
Medium – high (1.11-1.44%)	Germany, Ireland, France, Czech Republic, Slovenia, Belgium, Iceland, Greece (8)
High (1.46-2.27%)	Switzerland, Austria, Netherlands, Cyprus, Sweden, Finland, Norway, Denmark (8)

Table 5.4: A categorisation of European countries based on their relative position on the Global Competitive Index in 2008 (N=32)

Position	**Country**
Low	Bulgaria, Romania, Greece, Turkey, Hungary, Croatia, Latvia, Poland (8)
Low – medium	Malta, Italy, Slovakia, Lithuania, Portugal, Slovenia, Cyprus, Czech Republic (8)
Medium – high	Estonia, Spain, Luxembourg, Ireland, Iceland, Belgium, France, Norway (8)
High	Austria, United Kingdom, Netherlands, Germany, Finland, Sweden, Denmark, Switzerland (8)

5.3 Governance and educational attainment

The indicator used for educational attainment is the percentage of the population aged 25-34 with a tertiary education qualification. In the period 2002-2006 all twenty-three countries (the countries for which we have data) improved their performance (see chapter 4, figure 4.5). Two countries with already high levels of educational attainment succeeded in improving this substantially (Denmark and the Netherlands) while other high performers also improved but to a lesser extent.

The top ten countries in terms of educational attainment levels nearly all come from the north-western part of Europe. They include all of the Nordic countries, the

United Kingdom and Ireland as well as Belgium and the Netherlands. In most of these countries public universities have high or medium-high levels of autonomy (Belgium, Denmark, Finland, Ireland, Netherlands, Norway, Sweden and United Kingdom). The exceptions are Spain (low-medium autonomy) and France (low autonomy). The only country with highly autonomous universities that performs poorly in terms of educational attainment is Austria. However, Austria increased its educational attainment levels significantly between 2002 and 2006 (36%) and also introduced a major reform of higher education governance being the only country to move from low to high institutional autonomy between 1995 and 2008 (see table 5.2).

At the other end of the scale, five countries with low or low-medium levels of autonomy have low levels of educational attainment (Greece, Hungary, Poland, Portugal and Turkey). The exceptions here are the Czech Republic, Germany, Italy and Slovakia with medium-high levels of autonomy and low levels of educational attainment. The Czech Republic, Italy and Slovakia, however, improved their levels of educational attainment significantly in the period 2002-2006.

In terms of changes in levels of educational attainment in the period 2002-2006, six countries high or medium-high levels of autonomy show relatively high levels of improvement (Austria (36%), Czech Republic (25%), Denmark (41%), Italy (42%), Netherlands (33%) and Slovakia (42%)). Nine countries with high or medium-high levels of institutional autonomy increased their educational attainment levels at a rate below the group average; six of these nine countries already had high levels of educational attainment in 2002.

There is a link between a country's position on the GCI and its educational attainment level. With three exceptions (Austria, Germany and Switzerland), countries in the upper half of the GCI have high educational attainment levels. All the countries in the bottom half of the GCI have low educational attainment levels. The level of public expenditure on higher education is also linked to educational attainment levels: high investors have a high percentage of the population aged 25-34 with tertiary education qualifications (Denmark, Finland, Netherlands, Norway, Sweden, and to a lesser extent Belgium, France and Ireland). Here the exceptions are Austria and Switzerland.

Our understanding of the relationship between governance and educational attainment is enriched when explore specific reforms and their relationship to educational attainment levels. This was investigated in eighteen of the national system analyses. In three countries (the Czech Republic, Portugal and Poland) respondents identified a link to governance reforms that enabled private higher education providers to offer tertiary qualifications thus increasing the supply of higher education and the numbers of graduates. For example in Poland, which had a 75% increase in educational attainment between 2002 and 2006, students from lower socio-economic backgrounds benefited from increased private provision of higher education – they form the majority of students in private institutions. In three other countries (Denmark, Germany and Iceland) respondents pointed to a link with funding reforms introducing formula funding driven (in part) by student enrolments

and thus providing institutions with a financial incentive to grow. In one case (Sweden) higher enrolments and numbers of graduates were linked to funding reforms that improved the financial support available to students therefore making higher education a more attractive option. In Denmark, respondents pointed to funding reforms creating incentives for higher education providers to increase their (regional) educational offerings (reflecting a general policy goal to improve access). Finally, in Italy, respondents see improved educational attainment as being related to the changing behaviour of universities incentivised by reforms creating more outcome-based funding.

In two countries (Austria and Portugal) interviewees saw a link between educational attainment and reforms that changed the admission criteria to higher education; making more students eligible for enrolment which – given adequate numbers of places to accommodate additional students – resulted in increased numbers of students and eventually graduates. Interestingly, in terms of educational attainment levels there is no difference between countries that have open access systems (in which universities have to admit all qualified students) and countries in which universities can select their own students.

Respondents across the eighteen countries were also asked to identify factors other than governance and funding reforms that might explain the improved performance of their countries in terms of educational attainment. Respondents in eight countries attributed this to an overall growth in their higher education systems – increased supply of higher education – not linked to specific reforms. Respondents from three countries saw a link to increased student demand for higher education while respondents from four countries saw increased labour market demand for tertiary graduates as the primary factor. Respondents from four countries linked the higher number of graduates to the new Bachelor-Master degree structures and the opportunities this provides to graduate in a shorter period of time than in traditional long-cycle first degrees.

These responses suggest that the primary driver of increased numbers of graduates is not surprisingly an increase in the number of students (no interviewees identified improved success and throughput rates). This in turn is driven by a combination of increased student and labour market demand and an increase in the supply of higher education places. Funding reforms have contributed to an increased number of graduates in some countries by providing incentives for institutions to grow and better financial support to students, while governance reforms have contributed through paving the way for private higher education providers and by extending the number of potential students by changing (minimum) admission requirements.

Apart from these specific drivers our earlier analysis also indicates that high levels of public investment, a country's prosperity (GCI) and the level of institutional autonomy are linked to educational attainment. Given the right conditions (such as sufficient levels of public expenditure, financial incentives and sufficient capacity to meet demand) autonomous universities can contribute to an enhanced educational attainment level in the population.

5.4 Governance and access

The indictor used for access is the net enrolment rate (ISCED levels 5 and 6). In the period between 2002 and 2006 net enrolments across Europe have increased; twenty-one of the twenty-four countries for which we have data improved on this indicator (see chapter 4, figure 4.3). In some countries with already high enrolment rates the growth has been marginal (Belgium, Estonia, Finland, Latvia and Spain). Slovenia and Lithuania with already high enrolments rates increased these even further (by 20% and 16% respectively).

When enrolment rates are related to institutional autonomy a scattered picture emerges. The data do not demonstrate a link between (increased) enrolments and levels of institutional autonomy. Nine countries with high or medium-high levels of institutional autonomy have high enrolments levels (Belgium, Denmark, Estonia, Finland, Latvia, the Netherlands, Norway, Slovenia and Sweden). At the same time, there are ten countries with high or medium-high levels of autonomy that have relatively low enrolment rates (Austria, Bulgaria, the Czech Republic, Germany, Iceland, Luxembourg, Slovakia, Switzerland, the United Kingdom and to a lesser extent Ireland). Countries with low or low-medium autonomy exhibit both high (Greece, Lithuania and Spain) and low enrolment rates (Cyprus and Turkey, but with both countries showing a steep increase between 2002 and 2006). The same picture emerges in terms of levels of public expenditures and positions on the GCI; there is no pattern in terms of enrolment rates.

Therefore, the data do not suggest that there is a link between the level of institutional autonomy of public universities and enrolment rates. The level of public expenditure on higher education and a country's GCI rank do not explain why some countries have higher enrolment rates than others. Neither does this depend on whether the country has an open-access system or a selective system; in the ten countries with the highest enrolment rates there are two with open-access policies (where universities have to accept all qualified students), five where universities have to accept all students up to the numbers of study places available and four where universities select their students.

Possible links between enrolment rates and governance and funding reforms were investigated in ten national system analyses. In three countries (Austria, Lithuania and Switzerland) the growth in enrolments was attributed to governance reforms introducing a new institutional sector ("Universities of Applied Science"). In these countries the supply of higher education increased and programme offerings diversified. In one country (Lithuania) the introduction of tuition fees was seen as providing an incentive for institutions to admit more students, while in another country (Bulgaria) greater financial autonomy created a similar incentive. Governance reforms enabling the establishment of private higher education institutions increased the supply of places in one country (Cyprus). Improved student financial support was seen to be a contributing factor in another (Norway).

The countries that improved their access most between 2002 and 2006 (Cyprus, the Czech Republic, Hungary, Slovakia and Turkey) are all catching up; their absolute level of access was below the European average in 2002. Growth in enrolment has been driven by the overall expansion of the system, increased student and labour market demand and economic growth. In the Czech Republic universities have a financial incentive to expand enrolments while in Slovakia and Cyprus new regulations for the establishment of private higher education providers contributed to increased enrolments. In Turkey a enormous expansion of capacity occurred between 1996 and 2008 through increased provision of distance education and the establishment of 33 private and 41 public universities (although there is still substantial unmet demand).

The primary drivers of increasing net enrolment rates appear to be growth in the number of places and student and labour market demand - although there are links to governance reform (introduction of new sectors) and funding reforms (greater incentives for students to enrol and for institutions to grow). There is no evidence that the level of autonomy of public universities, public investment levels or position on the GCI are linked to (changes in) enrolment rates. Our analysis does not support the assumption that a combination of autonomous public universities and the existence of financial incentives for growth will lead to high net enrolments.

5.5 Governance and mature student enrolment

The indicator used for Lifelong learning is the number of mature enrolments (>30 years old) as a percentage of total enrolments. Nineteen of the twenty-eight countries for which we have data show an increase in the percentage of mature students (see chapter 4, figure 4.4). The Nordic and Baltic countries as a group are high performers on this indicator but otherwise there is no clear pattern. The Nordic countries are all high public investors and have high percentages of mature students, but three other high investors do not have high mature enrolments (Cyprus, the Netherlands and Switzerland). Six of the low investors in higher education show low levels of mature enrolments (Bulgaria, Croatia, Italy, Romania, Slovakia and Turkey). GCI position and the percentage of mature enrolments are not linked: ten countries from the bottom half of the GCI have low percentages of mature enrolments but five show high percentages of mature students. In the upper half of the GCI table eight countries have high percentages of mature enrolments and six do not.

A number of countries with high or medium-high levels of institutional autonomy have relatively high percentages of mature students (Austria, Denmark, Estonia, Iceland, Latvia, Norway, Sweden and United Kingdom) while others do not (Belgium, Bulgaria, Croatia, the Czech Republic, the Netherlands and Switzerland). Once again there is no clear link.

In the countries with the highest percentage of mature students (Denmark, Iceland, Latvia, Sweden and the United Kingdom) various governance and funding reforms have taken place: increased institutional autonomy, opening up the system to private

providers, the establishment of state-university contracts, the introduction of performance-based funding systems, new student support and tuition fee schemes, and mergers. The possible relationship of these kinds of reforms to the number of mature students is not obvious.

Countries with low and low-medium autonomy demonstrate a relatively high growth in mature students between 2002 and 2006 (Cyprus, France, Hungary, Lithuania, Spain, Romania and Turkey). In four of these countries this can partly be explained by a low number of mature students in 2002 which makes high percentage growth easier. Many countries with high autonomy have low or negative growth rates for mature students (Austria, the Netherlands, Norway, Sweden and the United Kingdom). While the UK and Sweden had relatively high percentages of mature students in 2002 (which makes high percentage growth more difficult), the Netherlands did not. If anything, this pattern suggests a possible inverse link between institutional autonomy and growth in mature students where in many countries autonomous universities have no incentive, for whatever reason, to recruit mature students, whereas universities in countries with lower levels of autonomy may feel government pressures to do so.

Possible links between improved system performance in lifelong learning and governance and funding reforms were investigated in twelve national system analyses. Reforms linked by interviewees to a higher enrolment of mature students include the introduction of private institutions (e.g. Cyprus and Turkey); and financial reforms – both formula funding and/or tuition fees – that encourage institutions to admit more students in general (Iceland and Turkey) and in some cases mature students in particular where tuition fees are permitted for part-time evening programmes but not for regular full-time students (the Czech Republic and Spain). Apart from the contributing factors identified in the sections on educational attainment and access above, respondents suggested that growing numbers of mature students were linked to the increased provision of distance education programmes (Cyprus, Romania, Spain and Turkey) and demographic changes – a decline in the traditional age cohort encouraging universities to recruit more mature students (Bulgaria).

The six countries with the greatest improvements in the area of mature students (Cyprus, the Czech Republic, Lithuania, Romania, Slovakia and Turkey) have all expanded their higher education systems either by the establishment or growth of the private sector, the establishment or growth of a non-university sector, the expansion of distance education, or an increase in the number of public universities. Funding reforms targeted at more financial autonomy allowed institutions to generate extra funding by increasing the number of students seem to have had an effect on competition for (mature) students and the diversity of educational programmes offered. In these countries there has been an increase in the variety of study modes offered, including part-time studies, evening studies and distance education. The demand side seems to be important as well. There has been increased interest from mature students to enter higher education as a result of higher demand

for higher education qualifications from the labour market. Mature students enter higher education to meet these increasing requirements, to secure their working positions and to advance professionally. In all five countries there is a catching up effect; despite having the highest rates of growth in mature students all remain below the European average.

Our analysis indicates that there is no link between the proportion of mature students in a country and governance (reforms), institutional autonomy, investment in higher education or the country's position on the GCI. There are governance reforms that have had a positive impact in several countries (such as system expansion), but the same reforms have not affected mature enrolments in other countries.

5.6 Governance and private contributions to higher education

The indicator used is the share of private household contributions to higher education. Private contributions to higher education come from various sources, one of the most important being cost-sharing in higher education through the private contributions of students and their families. In fifteen out of the nineteen countries for which we have data there was a growth in the contribution of private households between 2002 and 2006 (see chapter 4, figure 4.12).

There is a strong link between the level of public investment in higher education and the contribution of private households. High and medium-high public investors have relatively low levels of private household contributions (with the Netherlands and the Czech Republic as exceptions) while low and low-medium public investors have high levels of private household contributions. There is at best a soft link between a country's position on the GCI and private contributions to higher education. The countries in the lower half of the GCI ranking have relatively high levels of private contributions. Eight countries from the upper half of the GCI ranking have low private contributions, but there are four exceptions (Italy, the Netherlands, Spain and the United Kingdom).

In the countries having high contributions from private households there is no pattern in terms of levels of institutional autonomy. In the top ten countries in terms of private contributions there are two countries with high autonomy (the Netherlands and the United Kingdom), three with medium-high (the Czech Republic, Italy and Slovakia), four with low-medium (Hungary, Poland, Portugal and Spain) and one has low autonomy (France). A similar pattern appears for the top ten countries in terms of growth in private contributions: two have high autonomy (Austria and Sweden), five medium-high (the Czech Republic, Denmark, Finland, Iceland and Italy), two low-medium (Portugal and Slovakia) and one has low autonomy (Greece).

The level of private household contributions to higher education is first of all dependent on whether universities are free to charge tuition fees. Secondly, it

depends on who sets the level of tuition to be charged. If tuition fees are not permitted or the government sets tuition levels then the level of private contributions depends primarily on government policy, which means it is not related to institutional autonomy as defined in this chapter. If it is possible for universities to set tuition levels themselves then institutional policies primarily determine the contribution of private households to higher education.

This means that in some countries government policies on tuition fees explain the high level of private household contributions as in the United Kingdom and the Netherlands where the government allows the universities to charge relatively high tuition fees. In some other countries universities are permitted to charge tuition fees to parts of the student population ('dual systems' as in Hungary and the Czech Republic) which explains high levels of private contributions. A third important determinant of private household contributions is the existence of a substantial private higher education sector, for example in Poland and Portugal.

The potential link between governance and funding reforms and private household contributions reforms was investigated in nine national system analyses. Increased private contributions to higher education are not surprisingly linked mainly to governance reforms enabling the establishment of private higher education institutions and to subsequent growth in this sector (Iceland and Portugal) and to financial reforms introducing or increasing tuition fees (Austria, Germany, Iceland, Portugal and Sweden), including in some countries increasing tuition income from mature students. Finally, it is interesting to note that four of the countries that experienced an above average increase in private household contributions in recent years still fall below the European average (Austria, Finland, Greece and Iceland). In these cases increases have been substantial in percentage terms but have to be seen against the background of low levels of private contributions in the past.

This analysis indicates that the level of private household contributions to higher education strongly depends on government policy on tuition fees and on the role of private higher education providers in the system. It is also related to the level of public investments in higher education (low public investment-high private contributions). The levels of private household contributions to higher education have been increased by governance and funding reforms that have introduced or increased tuition fees (which remains one of the most controversial issues in European higher education) or which have opened up higher education systems to private providers. The institutional autonomy of public universities is relevant only when institutions have the freedom to charge tuition fees and set fee levels themselves.

5.7 Governance and the contribution to R&D from business and industry

The indicator used is the share of higher education institutions' expenditure on R&D (HERD) financed by business and industry. In twelve out of the twenty-five countries for which we have data the share of HERD funded from business and industry

increased between 2002 and 2006 (see chapter 4, figure 4.11). In Slovakia, Iceland and Hungary there has been particularly high growth in this respect.

There is no clear relationship between the contribution from business and industry to HERD and a country's position on the GCI or a country's level of public investment in higher education. One tendency worth mentioning is that many countries with low public investment in higher education and a low rank on the GCI have relatively high shares of HERD financed from business and industry (e.g. Bulgaria, Croatia, Hungary, Latvia and Turkey), while a number of high investors have low or modest contributions to HERD from business and industry (e.g. Austria, Cyprus, Denmark, the Netherlands, Norway and Sweden).

Business and industry contributions to HERD and the changes that have taken place between 2002 and 2006 are not clearly related to levels of institutional autonomy. Although most countries with high autonomy have relatively low shares of business funded HERD (Austria, Estonia, Ireland, Norway, Sweden and the United Kingdom), many countries with medium-high autonomy have high business HERD contributions (Belgium, Bulgaria, Finland, Germany, Iceland, Latvia and Slovenia).

In the national system analyses, however, respondents from countries with increased business contributions to HERD reported that governance reforms granting public universities greater financial autonomy were seen to have contributed to stronger interaction with business and industry (e.g. Finland and Germany). In Greece strengthened institutional leadership is believed to have had a similar effect. In three countries financial reforms introducing targeted funding for joint research projects with industry are seen to have stimulated growth in this area (Finland, the Netherlands and Sweden). In Iceland, government stimulated innovation policies, the creation of business and science parks and institutional incentives intended to stimulate academic staff to attract funding from private sources is seen as an explanation for the growth of the R&D contribution from business and industry.

Factors other than governance and funding reform that are believed to have contributed to increased HERD income from industry include economic growth (three countries), growing industry demand for such projects (five countries) and EU programmes that stimulate these activities (Greece).

Similar trends are also apparent in the countries where business contributions to HERD improved most (Finland, Greece, Hungary, Iceland and Slovakia). Governance and funding reforms in these countries have concerned increased autonomy for public universities in terms of lump sum budgeting, staffing issues, and internal governance structures. In terms of funding, a more performance-based funding system has been implemented to replace historically input-based funding. Yet a number of countries with high autonomy (Estonia, Ireland and the United Kingdom) fall below the European average for both business contributions to HERD, and for improvements in this from 2002 to 2006 so higher autonomy on its own seems an unlikely explanation for the improved performance of the five countries.

Four other countries that improved on this indicator to a lesser degree are Denmark, Sweden, Germany and the Netherlands, which have mature industries and have stimulated university-industry collaboration and related income for higher education via various means. EU structural funds programmes were seen as important in fostering business contributions to HERD in two of the other improving countries (Spain and Slovenia).

This analysis suggests that industry demand for joint industry-university projects is driven by economic growth and the needs of industry. Notwithstanding the fact that reforms increasing institutional autonomy and introducing targeted funding have not led to increasing business contributions to HERD in all countries studied, there are several indications that institutional autonomy and particularly financial autonomy is a necessary condition for universities to respond to this demand and that targeted funding at national and European levels to stimulate such joint projects is seen as an important contributing factor.

5.8 Governance and incoming student mobility

The indicator we use for incoming mobility is the number of incoming European (EU/EEA) students as a percentage of the total number of students in a country. Twenty-two of the twenty-eight countries for which we have data increased the number of incoming European students between 2002 and 2006; in three countries this number decreased (Malta, Romania and Turkey). (See chapter 4, figure 4.6)

There is a clear link between the level of public investment in higher education as well as a country's position on the GCI and the inflow of European students. The countries that are high investors in higher education also have a high inflow of European students (except Slovenia which has a low inflow). Low investing countries have a low inflow of students (except Bulgaria – slightly above average - and the United Kingdom which has a high inflow). The countries in the top half of the GCI ranking have a high inflow of European students (except Finland). Countries from the bottom half of the GCI ranking have a low inflow of students (except Bulgaria, Cyprus and the Czech Republic).

Nearly all of the countries with high autonomy have many incoming students (e.g. Austria, Netherlands and United Kingdom). The countries with medium-high autonomy are more divided: some have many incoming students (e.g. Belgium, the Czech Republic and Germany), while others have low levels of incoming students (e.g. Slovakia, Latvia and Slovenia). Countries that have low-medium or low levels of institutional autonomy have low percentages of incoming European students, with the exception of Cyprus and France.

Most of the countries with low or low-medium autonomy experienced declining or only marginal growth in incoming students between 2002 and 2006 (except Lithuania and Spain). Interesting cases of high or medium-high autonomy countries that have high numbers of incoming students and that have continued to grow are Austria,

Belgium, the Czech Republic, Denmark, the Netherlands and the United Kingdom. The data suggest that there is a link between the level of institutional autonomy and (growth in) the number of incoming European students. Student mobility is however complicated by the situation in neighbouring countries; capacity limits in German higher education explain part of the growth in Austria and the Netherlands, many Dutch students go to Flanders etc.

Enhanced inward European student mobility was explored in depth in twelve national system analyses. Our interviewees could see no significant links to governance or funding reform other than the provision of targeted funding for this purpose in two countries (Finland and Spain). In some countries there are financial incentives such as tuition fees and funding per student/graduate for public universities to use their autonomy to increase their enrolments including by operating in the European student market.

Respondents suggest that the major underlying factors for increases in inward mobility are EU accession (Bulgaria and the Czech Republic), the expansion of EU mobility programmes (seven countries), an increased number of programmes taught in English (four countries) and growing student interest in studying in their countries (Spain). Favourable student financial support arrangements are mentioned to be a factor in one country (Norway).

A further look at countries with an above average increase in the numbers of incoming students exemplifies the quite diverse factors that come into play in the area of European student mobility (the Czech Republic, Estonia, Lithuania, the Netherlands and Spain). The Czech Republic provides an example of a country where several of the factors already mentioned play a role (entrance into the EU, improved capacity of higher education institutions to offer courses in English) but the main (idiosyncratic) factor is the fact that Slovak students constituted 60% of all foreign students in 2007/2008.

Increasing the number of incoming European students is a policy objective of a number of regional governments in Spain and is included as an improvement variable in formula funding. This financial incentive would partly explain the rise of incoming European students. Institutions have made particular efforts to attract international and European students and to design internationalisation strategies. At the same time, attractiveness for European students was attributed to the quality of life, the Mediterranean climate, the attraction of learning Spanish, the “Barcelona Brand”, and other external factors.

The analysis suggest that while countries with high investments of public expenditure in higher education, a good position on the GCI ranking and with high or medium-high levels of autonomy tend have high levels of incoming European students, it is mainly other factors, often country specific, that explain the level of incoming European students.

5.9 Governance and outgoing student mobility

The indicator used for outgoing student mobility is the number of students studying in another European (EU/EEA) country as a percentage of the total number of students in a country. In twenty-three of the thirty European countries for which we have data the number of outgoing students increased between 2002 and 2006; in four countries there was a decline (Austria, Greece, Malta and Turkey); and there was no significant change in three countries (Hungary, Denmark and Finland). (See chapter 4, figure 4.7)

There is no relationship between institutional autonomy and the number of outgoing European students. Different countries in each category of institutional autonomy have high and low numbers of outgoing European students. The same applies if countries are grouped by their level of public expenditure on higher education or their position on the GCI; neither is related to the proportion of outgoing students.

The number of outgoing students seems to be inversely related to the size of the country and its higher education system. The ten countries with the highest numbers of outgoing students include Luxembourg, Cyprus, Iceland, Slovakia and Malta, whereas large countries such as France, Poland, Spain, Turkey and the United Kingdom all have small numbers of students studying elsewhere in Europe.

The relationship between governance and funding reforms and outgoing student mobility was explored in thirteen national system analyses. Respondents did not identify any links to governance reforms. Student support arrangements in general and particularly the portability of support to other European countries are believed to be the key factors (Germany, Ireland and Sweden). The other major drivers identified are very similar to those identified for incoming mobility although in one country labour market demand for graduates with international experience is seen to be important (France) while in another the new Bologna degree structures are believed to have encouraged more outward mobility (Romania).

Two countries with an above average increase in outgoing students exemplify the quite diverse patterns that come into play in this other side of European student mobility. Increased outgoing student mobility from Ireland was considered to be the result of more general social and economic factors, the ease and availability of travel, a culture of moving away - particularly to other English speaking countries, and the fact that the right to free tuition is portable to other EU countries. The Irish national qualification framework may also have contributed to increased mobility as it adheres closely to the Bologna framework.

The increase in Latvian students studying abroad was believed to be related to a lack of reform of the student support system and some specific characteristics of it. High tuition fees are another factor triggering students to travel to countries that provide free higher education. EU-membership was seen as another very important stimulus for students from Latvia to go abroad, and the removal of technical visa and other requirements has made mobility easier.

This analysis indicates that governance reforms have had no obvious effects on (changes in) the number of outgoing European students. Enhanced institutional autonomy does not seem to play a role. The most important factors are related to tuition fees and student support arrangements. Reforms in these areas can make a difference to outgoing student mobility.

5.10 Governance and research output

The indicator used for research output is the number of scientific articles published per million inhabitants of the country. In twelve of the twenty countries we have data for the number of published articles increased between 2002 and 2006 (see chapter four, figure 4.10).

There is a strong link between institutional autonomy and research output. The vast majority of countries with high or medium-high levels of autonomy are also very productive in terms of research output. The group of ten countries with the highest research output does not include any country with a low level of institutional autonomy, whereas five of the ten least productive countries have low or medium-low levels of institutional autonomy. This observation supports in general terms the finding of the research of Aghion et al. (see chapter 2) that there is a relationship between (financial) autonomy and research performance (in their case measured by the number of patents).

There also is a clear link between the research output and the position of countries on the GCI ranking. The countries with high GCI scores have a high research output; the top ten countries on the GCI are a close match to the top ten on research output. The countries with lower research output levels are all at the lower end of the GCI ranking. The same pattern is to be found in terms of the level of public investment in higher education: the top six countries in terms of research output are all high investors in higher education. An exception to this pattern is the United Kingdom which has medium-low investment in higher education and is ranked number seven in terms of research output. Greece and the Czech Republic are two other exceptions: both have medium-high levels of public investment but research output significantly below the European average.

Public universities in nearly all of the top ten countries in terms of research output have substantial autonomy in selecting their own staff and determining their salaries. This suggests that a university's freedom to appoint and reward staff is important in recruiting and retaining research-active staff.

The relationship between governance and funding reforms and improved research performance was investigated in ten national system analyses. The link most cited by our respondents is to financial reforms that give greater emphasis to performance-based research funding (Belgium, the Czech Republic, Hungary, Ireland, Italy, Norway, Portugal and Spain). Respondents also mention financial reforms introducing targeted research funding (Greece) and reforms that include a significant

increase in the resources made available for research (Belgium, the Czech Republic, Greece, Luxembourg and Spain). An increased emphasis on measuring the quality of research (research assessments) has also contributed to a growing awareness on the part of academics that research output is important in contemporary higher education. Increased research performance is also seen to be related to the growth in EU research programmes (five countries), while in two countries the increase in publications is linked to the overall growth of the higher education system.

A greater emphasis on performance-based research funding and the introduction of targeted research funding have not, however, been successful in stimulating increased research output everywhere. In a number of countries research output decreased between 2002 and 2006 (Austria, Denmark, Finland, France, Poland, Slovakia, Sweden and the United Kingdom). Financial incentives do not by definition lead to better research performance. Nevertheless, five of these eight countries are in the top ten countries as ranked by the number of publications per million of population; they already had a high research output in 2002 and there may be limits to continued growth in productivity. Taking this into account our analysis suggests that financial incentives are very likely to increase research output.

In the countries that have significantly increased their research output (Belgium, the Czech Republic, Greece, Iceland and Ireland), we see indeed that financial incentives have contributed to more scientific output. Two of these countries are catching up and are still in the lower half of research performing countries in Europe (the Czech Republic and Greece).

The most productive countries are the Scandinavian countries, the Netherlands and Switzerland. All six of these countries are small to mid-sized countries with strongly competitive economies that have had well-developed science systems in place for years. Three of these countries further increased their research output between 2002 and 2006 (the Netherlands, Norway and Switzerland); the other three countries could not improve their performance despite (long standing or more recent) reforms incentivising increased publication output.

Governance reforms were not mentioned by our respondents as a stimulating factor to increase research output. Public universities in the seven most productive research countries have (medium-) high levels of institutional autonomy, including particularly high autonomy on staffing matters and, to a somewhat lesser degree, financial autonomy. Enhanced institutional autonomy in combination with a growing awareness of the importance of research for a country's competitiveness and reputation (via global rankings) is likely to contribute to a stronger focus on research output. Institutional reputation and prestige (largely driven by demonstrable research-intensiveness), in combination with financial incentives, seems to lead to a stronger research focus.

5.11 Governance and employability

For employability two indicators were used: the relative earnings of higher education graduates and the relative unemployment rate of higher education degree holders. In six of the thirteen countries for which we have data on earnings the relative earnings of graduates improved between 2002 and 2006 (improvement ranged from 1% in Denmark to 15% in Ireland). In five countries the relative earnings of graduates dropped (the decline ranged from -1% in Finland to -4% in France). In five of the nineteen countries for which we have unemployment data the relative employment position of graduates improved from 2002 to 2006; in other countries the relative labour market position of graduates worsened. (See chapter 4, figures 4.8 and 4.9).

Our analysis did not find any patterns in these two indicators (one has a very limited data set) in relation to the level of public investment in higher education, a country's position on the GCI, or the level of institutional autonomy of public universities. Only one of the national system analyses focused on employability and it found no indications of links between governance reforms and employability.

Theoretically we can think of three governance issues that could affect the position of graduates on the labour market. First, higher education systems having universities with external membership from other public sectors or business and industry may be keener to position their graduates well on the labour market. Second, if graduates from the universities of applied sciences sector are better positioned for the labour market than university graduates, given the professional orientation of their programmes, the establishment or expansion of this sector could improve graduate employability rates. Finally, if national accountability requirements include graduate surveys or "first destination data" it is likely that universities will pay greater attention to this issue.

The (limited) employability data used in this study does not allow us to establish whether these theoretical relationships or other links between higher education governance and employability exist. Other factors that are likely to play a role are labour market conditions (demand in general as well as for higher education graduates in particular) and increases in the proportion of higher education graduates in the labour force (more graduates may increase the likelihood of unemployment or reduce relative earnings). For more information on issues related to employability please see the survey on the rates of return to investment in higher education in Volume 3 of parallel study *Progress in higher education funding reform*.

The analysis in this chapter has focused on each of the performance dimensions in turn and has explored the possible relationships between governance reforms, institutional autonomy, levels of public investment in higher education and a country's relative position on the GCI and these particular areas of performance improvement. In the following chapter we present the overall findings and conclusions of the study.

6 Conclusions and recommendations

6.1 Governance reforms in Europe

In this concluding chapter of the report we return to the main research questions that guided this study, we summarise the main findings of the study and outline a number of recommendations related to these findings. In summarising the main findings we highlight general trends and patterns across European higher education thus neglecting some of the diversity that reigns across these systems; for every trend there is at least one outlier.

The first research question concerns governance reforms:

> *What have been the policy changes in the governance of European higher education systems between 1995 and 2008? And what have been the policy changes in national higher education systems as regards governance reforms?*

There have been significant changes in governance since 1995 in almost all countries. Many new national higher education acts have been passed. Quality assurance and accreditation systems have been one of the major reform themes – partly inspired by the Bologna process. A series of reforms have had the key objective of enhancing the autonomy of higher education institutions; in some countries this has entailed changing the legal status of the institutions. As part of the reshuffling of authority new policy instruments to steer higher education systems have been developed. Contracts and multi□year agreements between the state and universities are examples of such new instruments. In many countries funding mechanisms have been altered; line item budgeting systems have been replaced by lump sum systems for public funding; and historically□based allocation schemes are loosing ground to funding mechanisms with more of an emphasis on outputs.[27] As a result of the continuing expansion of higher education, new higher education sectors have been established or have matured – the universities of applied sciences. Simultaneously binary divides between universities and universities of applied sciences are under pressure in other countries. To expand supply further private higher education has gained ground in some countries; there are discussions on blurring the boundaries between the public and private provision of higher education services. The higher education landscape has been restructured in several countries through mergers of institutions within and across higher education sectors. And we see many initiatives to encourage research collaboration between higher education institutions as well as between public universities and private companies (through networks, alliances and clusters).

[27] For a detailed analysis of funding reforms please see the parallel study *Progress in funding reforms across Europe.*

One of the overarching trends in European higher education concerns the enlargement of institutional autonomy. The general assumption is that higher education systems will benefit if institutions are freed from detailed state regulation and control and have substantial discretion to take decisions independently and strategically.

The **organisational autonomy** of universities to decide on their own internal governance structures; on their internal authority, responsibility and accountability structures; as well as to select their institutional leadership is one of the major aspects of greater institutional autonomy.

> *The organisational autonomy of European public universities is still restricted in many countries by national legislation, regulations and guidelines. Only a few countries have implemented reforms that have seriously transferred to the universities the power to decide on their internal governance structure.*

There have been reforms that have changed the level of detail of regulation or that have replaced state regulation with guidelines but organisational autonomy remains restricted in many countries. Where changes have taken place we see the extension of the powers of executive leadership within institutions in an attempt to create more professionally□led and managed organisations with greater managerial flexibility within the existing space for manoeuvre. Within this context, it is apparent that representative bodies have lost some of their authority. New top□level governing bodies, frequently with majority external representation, are another trend which has also altered the responsibility and accountability mechanisms in the institutions. Their role is controversial as while external stakeholders might serve the purposes of accountability and external networking some see increasing external influence in internal governance as a reduction of organisational autonomy.

A second major aspect of institutional autonomy is **policy autonomy**, the ability of universities to constitute themselves as academic communities in terms of student and staff selection and to determine their teaching and research programmes.

> *In 2008, public universities in the vast majority of European countries have medium-high to high levels of policy autonomy in at least some aspects of staffing, student selection and academic affairs. Only a few countries have implemented reforms that granted universities fundamentally more autonomy in these matters.*

Across Europe, a scattered picture emerges with respect to staff appointments and the determination of salaries. In 2008, public universities in some countries have significant flexibility in selecting their academic staff and in setting their salaries. In many countries flexibility in setting salaries is restricted by government regulations or national agreements. There are also countries where staffing matters (the number of posts, appointments, salaries) are not at all under the control of the universities. In the majority of countries no major changes have occurred in the last decade.

In 2008, universities in one third of European countries have substantial freedom to select their own Bachelors students and to decide on the number of study places. In six countries this institutional freedom is severely limited, universities have to accept all qualified students unconditionally and/or the number of study places is determined by external authorities. In twelve higher education systems public universities have some room to take their own decisions as regards Bachelor student selection and the number of study places. Some of these countries have open access policies; universities have to accept all qualified students but they have the freedom to decide on the number of study places.

In eleven countries universities have almost full autonomy in programming their teaching and research activities while universities face serious restrictions in four countries. Overall, formal autonomy in research programming is less restricted than autonomy in programming teaching. In some countries traditional modes of governmental approval persist while accreditation procedures have created new interdependencies in the programming of teaching.

Financial autonomy is generally perceived to be a very important characteristic of autonomous organisations; it includes the ability to decide on the internal allocation of public and private funds, to diversify sources of income (for example through tuition fees and other private contributions), to build up reserves, and to borrow funds on the capital market.

> *Public universities in the vast majority of European countries have medium to high levels of financial autonomy. Many countries have implemented reforms that have significantly enhanced the autonomy of universities in financial matters, particularly through the introduction of lump sum budgeting.*

The financial autonomy of universities has increased across European higher education in general since 1995. Lump sum funding systems have replaced earmarked funding in many countries, which has substantially increased the institutions' room to maneuver. However, in about three□quarters of European countries universities can not decide for themselves to borrow money from the capital market.

It is usually argued that more institutional autonomy should go hand in hand with more accountability requirements. There is no doubt that universities need to account for the use of their enhanced abilities to take decisions themselves. At the same time, growing accountability measures are a major tool for external (usually governmental) control and intervention into university matters. In speaking about **interventional autonomy** we refer to the extent to which organisations are free from accountability requirements.

> *Public universities in the majority of European countries have medium levels of interventional autonomy as a result of increasing reporting and accountability requirements. In some countries this autonomy is*

low. Reforms have increasingly obliged public universities to demonstrate their performance and to account for their activities and spending. Only a few countries have not followed this trend.

Accountability requirements oblige universities to submit various documents to external authorities. These may include strategic plans, annual reports, audited financial statements, documents demonstrating compliance with national polices, the outcomes of teaching and research evaluations, and the provision of information for national data bases. In 1995, in about two-thirds of European countries these requirements were low. In some countries it was completely up to the university to decide how to account for its activities or whether to produce strategic plans. In other countries, accountability requirements were in place, but in retrospect these requirements were far less extensive than they are today. Today there are only a small number of countries where formal accountability requirements are low.

Universities do need to be accountable to the public and their stakeholders. However, a significant increase in accountability requirements may also curtail institutional autonomy and flexibility. In some cases increased accountability requirements have not been the hand in hand accompaniment of increased institutional autonomy but have been introduced without granting universities substantial institutional autonomy.

In the period between 1995 and 2008, for 'Europe as a whole' institutional autonomy has increased although this varies across the different dimensions of autonomy and there are still countries where universities face serious constraints on their decision-making freedom.

While recognising that there are important differences between higher education systems, institutional autonomy has grown overall, creating opportunities for public universities to act as more integrated organisations and to determine their own profiles and strategies; this is not the case for all dimensions of autonomy; public universities in many countries face limitations on their managerial flexibility particularly in terms of internal governance arrangements, staff and student selection and formal accountability requirements.

6.2 Governance reforms and Europe's modernisation agenda for higher education

The second and related research question deals with governance reform in relation to the European Commission's modernisation agenda for higher education:

To what extent does the current state of governance in European higher education reflect Europe's modernisation agenda for higher education?

We see the modernisation agenda as a set of recommendations that offers countries and higher education institutions a variety of issues to consider and a range of options for reform that need to be tailored to national and institutional contexts and

conditions. The following aspects of the modernisation agenda relate to issues of governance: the introduction of quality assurance systems, less state micro□management and enhanced institutional autonomy, new internal governance structures, more emphasis on institutional strategy development and multi-year agreements with government, clear accountability relationships, strengthened partnerships with business and industry, sufficient levels of funding and increased financial autonomy for higher education institutions.

The picture that emerges from this study is a diverse one: the different governance aspects of the modernisation agenda have been addressed to varying degrees in different countries. Looking at the current position in thirty-three countries:

- in eleven countries universities have a high level of institutional autonomy in terms of selecting their academic staff;
- in fourteen countries universities have a high level of financial autonomy;
- in twenty countries universities have a high level of institutional autonomy in starting new teaching and research programmes;
- in sixteen countries universities have supervisory or governing boards with external stakeholder membership;
- the vast majority of European countries have internal and external evaluation systems in place for teaching and for research;
- in five countries universities have a high level of institutional autonomy in determining their internal governance structures.

The timing and breadth of reforms differ across European higher education systems; there are early adopters as well as late reformers. In some parts of Europe radical political changes drastically changed the higher education landscape in a very short period of time in the early 1990s, whereas for other countries particular aspects of the modernisation agenda have been a reality for years.

If the different governance related aspects of the modernisation agenda are considered as a whole, nine countries can be characterised as having moved in the direction of many aspects of the modernisation agenda, eight countries have addressed some aspects, nine countries have tackled a few aspects, and seven countries have hardly addressed any aspects of the modernisation agenda.

We do not adopt a normative position here; there is not a single recipe for successfully modernising European higher education. The proof of the pudding is in the eating; the value of governance reforms overall as well as of those addressing the modernisation agenda must be demonstrated by the positive effects they have on the core functions of higher education.

6.3 Governance and system performance in higher education

The third research question of this study concerns the relationship between the governance reforms and the performance of higher education systems:

> *What are the possible links between governance reforms and the performance of higher education systems?*

The terms of reference of our study highlighted eight dimensions of performance. We used international data sources to measure the performance of European higher education systems in 2002 and 2006 across these eight dimensions. In terms of these performance dimensions, there is no doubt that in the vast majority of European countries system performance improved over this period.[28]

- In nearly all twenty-three countries (for which data was available[29]), there was an increase in educational attainment (percentage of the population aged 25-34 with a tertiary education qualification).
- In twenty-two of twenty-four countries net enrolments in higher education (ISCED levels 5 and 6) increased.
- Nineteen of twenty-eight countries increased their enrolment of mature students (as a percentage of total enrolments).
- Private household contributions to higher education (most importantly tuition fees) increased in fifteen of twenty countries.
- In twelve of twenty-five countries expenditure on R&D from business and industry (as a percentage of total R&D expenditure) increased.
- Twenty-two of twenty-eight countries increased the proportion of incoming European students (as a percentage of the total number of students).
- Twenty-three of thirty countries increased the proportion of outgoing European students.
- The number of published articles (per million inhabitants) increased in twelve out of twenty countries.
- In five of nineteen countries the relative employment position of graduates improved (rate of unemployment compared to secondary school leavers).
- The relative earnings of graduates (compared to secondary school leavers) improved in six of thirteen countries.

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[28] We use the term 'improved performance' in a neutral way recognising that some would contest whether all of these improvements are desirable.

[29] The number of countries for which data are available varies for each indicator hence the differing sample sizes per indicator.

Our study explored the possible relationship between governance reforms and these improvements in system performance. In doing so we controlled for the level of public investment in higher education (public expenditure on tertiary level education as a percentage of GDP) as well as for the economic standing of the countries (on the Global Competitive Index, GCI).

For some of the performance dimensions we find that governance reforms aiming to enhance the institutional autonomy of universities are likely to contribute to increased system performance under certain conditions.

The top ten countries in terms of **educational attainment** levels nearly all come from the north-western part of Europe. Most of these countries are high public investors in higher education; score well on the GCI and have public universities with high or medium-high levels of autonomy. Funding reforms have contributed to an increased number of graduates in some countries by providing incentives for institutions to grow and better financial support to students, while governance reforms have contributed through paving the way for private higher education providers and by extending the number of potential students by changing (minimum) admission requirements.

> *Within the right conditions (such as sufficient levels of public expenditure, financial incentives and sufficient capacity to meet demand) autonomous universities can contribute to higher educational attainment levels in their countries.*

The top ten countries in **research productivity** nearly all come from the north-western part of Europe. Most of these countries are high public investors in higher education, score well on the GCI and have public universities with high or medium-high levels of institutional autonomy. Institutional autonomy in academic staffing and related salary matters plays an important role. Funding reforms (stronger emphasis on performance, more funding for research and the introduction of targeted research funding) have contributed to an increase in research productivity in some countries but not in others (most of these were already high performers in research).

> *Within the right conditions (such as sufficient levels of public expenditure, financial incentives and sufficient capacity to attract and retain productive staff) autonomous universities can contribute to improved research productivity in their countries.*

For the other performance dimensions we do not find systematic links between governance reforms aiming to enhance the institutional autonomy of universities and system performance. We do find, however, examples that highlight the facilitating potential of such reforms under specific conditions.

The level of private household financial contributions to higher education strongly depends on government policy on the issue of tuition fees and also on the level of public investments in higher education (low public investments - high private

contributions). While tuition fees remain one of the most controversial issues in European higher education, one way to increase the level of private contributions to higher education is government reforms to introduce or increase tuition fees, to grant universities the authority to set tuition levels, or to open up higher education systems to private providers.

> *Institutional autonomy as a means of increasing the private household contributions to higher education only comes into play when universities have the freedom to charge tuition fees and set tuition levels themselves.*

Many countries with low public expenditures on higher education as well as countries ranked lower in the GCI have relatively high percentages of **R&D investments in higher education from business and industry**. A number of countries that are high public investors have low or modest contributions to R&D from business and industry. Factors that seem to have contributed to growing private investments in R&D in higher education in some countries include economic growth, growing industry demand for R&D, and EU programmes that stimulate public-private collaboration in R&D.

> *We do not find a systematic link between business and industry contributions to higher education R&D and the level of institutional autonomy of public universities. There are indications, however, that institutional, and particularly financial autonomy is a facilitating factor for universities in responding to increasing business and industry demand for and investment in R&D.*

Finally, **for five performance dimensions we do not find systematic links between governance reforms and system performance**. There are indications that other factors and drivers play a dominant role in performance improvements on these dimensions.

In terms of **net enrolments** in higher education, the primary drivers appear to be growth in the number of study places and student and labour market demand. There are links to governance reforms (the introduction of new sectors in higher education) and funding reforms (greater incentives for students to enrol and for institutions to grow). Our analysis does, however, not support the assumption that the existence of financial incentives in combination with autonomous public universities systematically leads to high or increasing net enrolments.

Our analysis concludes that there is not a link between governance reforms and the percentage of **mature students.** There are several governance issues that have played a positive role in several countries (such as system expansion), but there are also examples of the opposite effect. There is no evidence that the level of institutional autonomy is linked to high levels or growth of mature enrolments. In fact, it appears as if countries that have universities with limited autonomy have been catching up in terms of mature enrolments.

Intra-European student mobility has been driven by many factors (such as regional proximity, common languages, the attractiveness of a country and the reputation of its higher education system, programmes offered in English, and entrance to the EU). For **incoming student mobility** we could not find significant links to governance reform. The provision of targeted funding for this purpose is an important factor in some countries while in other countries there are financial incentives such as tuition fees and funding per student/graduate for public universities to use their autonomy to increase their enrolments including by operating in the European student market. Governance reforms have no obvious effects on **outgoing student mobility**. The most important factors are related to tuition fees and student support arrangements.

Our analysis did not find any relationship between governance reforms or the level of institutional autonomy and the relative employment position of graduates or their relative earnings. The most important drivers of improvements on the **employability** dimension appear to be labour market conditions and the proportion of higher education graduates in the labour force.

Our findings suggest that under the right conditions, particularly sufficient funding and smart financial incentives, institutional autonomy does matter in terms of performance in the primary processes of universities. There appears to be a link between the output of the primary processes (numbers of graduates and articles published) and the level of institutional autonomy. This conclusion is supported by other research. Aghion et al. (2007, 2008 and 2009) argue that university research performance is positively correlated with university autonomy and the level of funding. For the other performance dimensions, which are not related or less directly related to the primary processes of universities, the findings of our study do not reveal clear links between governance and performance. In these dimensions performance is explained more by a combination of other factors such as societal developments, economic conditions and political cultures. This means that on dimensions other than educational attainment and research output links between governance and performance can exist in specific contexts. Our study shows many interesting country-specific examples of a positive interaction between governance reform and performance, but more detailed insights are needed to draw firm conclusions. Future research should also include a focus on national policies on issues in addition to governance and funding (for example, on access, lifelong learning and internationalisation), country characteristics and actual university behaviour in relation to governance reforms and institutional and system performance. We would agree with Knott and Payne's conclusion that governance (reform) is important, but differences in political cultures and economic conditions "can play a more important role in determining the features of university performance than governance structures" (2004:27).

6.4 Policy recommendations

The final research question of our study asks for a summative reflection on our findings as well as for recommendations for future policies. *What lessons can be learned and what might be the key governance policy themes in the further development of European higher education?*

Our study shows that European higher education systems are living in interesting times. They are experiencing substantial reform, in terms of autonomy, accountability, funding and external relations to the state and other stakeholders. Many governance reforms across Europe reflect the governance aspects of the European modernisation agenda. In a way, this is surprising as education in general and higher education in particular have traditionally been driven by well-protected national agendas, national particularities and different developmental paths. It is also obvious and less surprising that the timing, breadth and depth of reforms differ considerably across the more than thirty European countries included in this study. The "European project" is work in progress; some countries are front-runners while others are followers. National contexts and conditions clearly influence the processes of policy formation, formulation and implementation.

Across Europe, institutional autonomy has grown in many but not all respects, and to different degrees in different countries, but this has created increased opportunities for public universities to act as more integrated organisations and to determine their own profiles and strategies. Their level of financial autonomy has increased and more universities now have considerable leeway to run their own financial affairs, although they remain very dependent on public funding. Levels of policy autonomy – the possibility for universities to decide themselves on processes, procedures and policy instruments – have increased, although the pattern is uneven. The level of organisational autonomy has increased but remains rather low as state regulations and guidelines continue to set the organisational frameworks of most European universities. Finally, the level of interventional autonomy has decreased as the accountability requirements for public universities have increased

Our exploration of various performance dimensions in European higher education and research points in the direction of increased performance in times of substantial governance reform. There is no doubt as well that universities need to act within frames set and controlled by public authorities; but the current state of affairs places European universities in a state of limbo: there are great expectations as regards increased system performance yet institutional autonomy, although enhanced, remains constrained. Therefore, based on the outcomes of our study, we offer the following recommendations:

> ***European universities should be granted more institutional autonomy overall*** *providing the space and thrust to develop their own strategies and structures. In particular, this concerns more leeway for determining their own internal governance structures; their budgets, financial priorities and human resource policies; and the*

profiles of their academic communities in terms of staff and student selection, and education and research programmes.

There are however, also potential dark sides to enhancing institutional autonomy. More institutional autonomy can create the conditions for replacing micro-management by the state with micro-management by empowered institutional management. Such re-regulation could jeopardise the increased performance, flexibility and responsiveness offered by enhanced autonomy.

The balance between autonomy and accountability needs to be re-visited. *What seems to have been gained in terms of autonomy might too easily be lost to excessive accountability requirements. Traditional means of state regulation and state micro-management tend to be replaced by new methods of accountability and reporting to other authorities. It is timely to assess the means and ends of accountability in European higher education.*

Extensive reform agendas, such as the European modernisation agenda for higher education, are often overloaded with great (and partly diffuse and sometimes conflicting) expectations about the effects of the reforms of structures and processes on the primary functions of education, research and innovation. Such high expectations may be needed to mobilise reform processes and to stimulate the dynamics of change, but they raise the stakes high when it comes to the assessment of what has been achieved. The higher education governance reforms across Europe and the changes in system level performance reported in this study are substantial (and often impressive), but need to be assessed with a sense of realism. Reforms in governance (and funding) have been implemented within financial constraints on the investment in higher education and research across Europe. Various performance indicators are obviously – and not surprisingly – sensitive to the amount of public and private funding for higher education and research.

Governance reforms granting greater institutional autonomy seem to have most visible and direct effects on key performance dimensions when combined with funding reforms; these key dimensions are those that concern the primary processes and products of higher education and research: research productivity and educational attainment. More institutional autonomy combined with performance□based funding for research and a more competition□based research system are likely to have positive effects on research productivity. More institutional autonomy combined with financial incentives for higher education institutions to improve graduation rates is also likely to have a positive impact on educational attainment.

Without ***increasing investment into higher education and research*** *across Europe it is unlikely that universities will be enabled to completely fulfil the growing expectations of their role within the European knowledge society and their overall contribution to European competitiveness. Governance reforms in combination with sufficient levels of funding are likely to contribute to enhanced system*

performance. This requires the issue of the balance of public and private investment into higher education and research to be re-visited.

In terms of other performance dimensions (intra-European student mobility, private income from families/students or business/industry, employability of graduates etc.), links to governance reforms seem to be weaker, and are more diverse, less visible and highly context-specific. Some reforms have been successful triggering performance improvements only in some countries. The higher education systems of thirty-three countries (with their myriad and diverse links to other sectors in society) are too complex a research arena to expect the discovery of simple, straightforward and causal relationships. More institutional autonomy may, for example, enable individual institutions to strategically enhance their attractiveness on the intra-European student market. Their success will, however, be partly dependent on important external factors that institutions cannot control. The success of some institutions in attracting international students may increase their market share within a given country while other institutions may lose international students. The effect at the level of the system may thus be further institutional stratification and not an overall increase in incoming students.

Governance reforms are enablers for system level performance improvements within an overall regime of steering and funding. They are a means to multiple ends that are only partly under control of more autonomous universities and do not automatically lead to improvements at the system level. Institutional autonomy in combination with funding reforms is most likely to contribute to system performance in higher education's primary processes and products. We urge ***more realism when it comes to expectations that governance reforms will result in multiple and rapid effects****. This realism should also apply in the assessment of the reforms.*

Finally, reforms need time to sink into systems and to reveal their potential. The 1995 to 2008 period of reform and the 2002 to 2006 period for assessing changes in performance have limited our capacity to fully understand the implementation of reforms and their effects. Short term effects can be seen, but long term impacts, arguably those that really change systems, are more difficult to observe. In reform processes the transaction costs for higher education systems and institutions are significant; the effects of reforms on performance need to be developed over time. The progress made thus far is only an intermediate step; the modernisation agenda calls for further implementation and ongoing assessment.

A European monitoring system *should be established to address important aspects of reform and performance in higher education systems in constant flux. A European scoreboard for higher education could integrate and further develop important indicators for performance and for the characteristics of higher education systems and their reform. Such a monitoring system would also provide a*

valuable foundation for the analysis of national systems and the development of tailor-made recommendations for further reform.

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Appendix 1: Governance and funding reforms across Europe over the last decades

Note: in some cases the reforms have taken place over more than one time period; these are indicated at the end of the section for the country

Country	Prior to 1995	1995-1999	2000-2004	Post 2004
Austria	New national Act 1993: first steps to increase institutional autonomy		New national Act 2002 increases institutional autonomy radically: full legal status of universities, new funding mechanisms – more financial autonomy, new internal governance structure, staff appointed by the HEI, freedom to programme teaching and research; Internal quality assessment mandatory; 2001 introduction tuition fees – abolished in 2008; Establishment of national buffer organizations such as quality assurance agencies, national science council and council for R&D;	2009: mergers of quality assurance agencies for public universities, *Fachhochschulen* and private universities foreseen
	System diversification through establishing *Fachhochschulen* (in PPP), private institutions and *Paedagogische Hochschulen.* There are major differences between these higher education sectors, e.g. for public universities there is in general open access, whilst *Fachhochschulen* can select their students			
Belgium (-Flanders)	1989 state restructuring – Flemish Community responsible for its HE New acts 1991 and 1994: more autonomy HEIs, (partially) lump sum funding, mergers of *hogescholen*		Introduction BaMa system, establishment of associations (collaboration one university and several *hogescholen*), 'upgrading' of study programmes of *hogescholen*, establishment accreditation system; Substantial increase research funding	2008 new funding system: less emphasis on input and more on output funding (student performance-based)
	Introduction of quality assurance in education, second wave of 'democratisation' (higher participation rates), and internationalization of the *hogescholen*			
Bulgaria		1996 national evaluation and accreditation agency; Internal quality evaluation for teaching and staff; Introduction formula-based institutional funding; Introduction tuition fees, determined by Council of Ministers;	Introduction Bologna principles; Council of ministers has to approve the total number of study places; Minister of Education develops Register of HEIs;	Each HEI should create Board of Trustees; 2008 Adaptation student support system foreseen

Country	Prior to 1995	1995-1999	2000-2004	Post 2004
	Increase in the research budget allocated by national Scientific Fund			
Cyprus	Establishment of first university 1989		Two new universities;	Establishment of three private universities;
Croatia	1993 establishment of several national agencies; establishment of Universities of Applied Sciences		2001: establishment National Foundation for Science and Higher Education; 2003: Shift from earmarked funding to lump sum funding; Restructuring of study programmes (Bologna); 2003: 'state regulated' standardized quality assessment for teaching and research; 2003 (2007): Increased participation rights for students in institutional decision making 2004: establishment Agency for Science and Higher Education	2009 Act on National Foundation for S&HE and Act on quality assurance 2007: encouragement of entrepreneurialism, research commercialization and third party funding; Establishment of Strategic Council for Science and Technology and the National Innovation System Council; 2007 organizational integration of faculties – not implemented
	Acts of 2003 and 2007 were not fully implemented; university senates determine annual quotas of admitted students; students above the number of publicly funded places are charged tuition fees – some tuition fees set by rector and ministers, others not regulated.			
Czech Republic	Radical change after 1990 – 'full' institutional autonomy; Higher Education Council representing HEIs with many powers; Accreditation Commission	1998 HE Act: introduction private sector, state universities become public legal bodies and get ownership of property, strengthening executive leadership vis-à-vis faculties, introduction of board of trustees (external membership), new powers to Accreditation Committee, introduction of 'strategic plans' of ministry and HEIs	2002 Research and Development Act:	Gradual changes in funding formulas (e.g. number of students as new parameter → more performance-based); Changes to R&D Act: funding more output related
	Despite the changes in the legal system (e.g. HE Act 1998) there have not been major changes since 1995			
Denmark		1999 Contract-based steering	2003 HE Act: new internal university governance system (e.g. rector appointed by institution's board); Introduction of contractual relationship between HEI and state	2007 Mergers of HEIs (including research institutes) – creation of large and multi-campus universities; new independent QA agency (as consequence of Bologna); funding research performance (consequence of 'Globalisation strategy' of state)

Country	Prior to 1995	1995-1999	2000-2004	Post 2004
	Taximeter system (performance-based funding) has been 'constantly' reformed			
Germany (NRW)			Accreditation of study programmes through external agencies;	Shifts in authorities from federal to state level; new HE act in 2007: more institutional autonomy in funding, HR and internal organisation; introduction of university councils with external members (in NRW with decision making powers); HEIs (in NRW) can charge tuition fees – maximum level set by the state; importance of historically-based funding decreased in favour of more formula funding and contracts between state and HEIs; reforming remuneration system for professors; Excellence Initiative: promoting research excellence; HE Pact: additional state and federal funding to cope with increasing student numbers.
	Gradual shift to lump sum budgeting; more centralization inside HEIs			
Estonia	Reorganization HE and R&D system since early 1990s – Universities Act 1995	1997: reorganization Academy of Sciences and integration of research institutes into universities; 1995: introduction quality assurance framework – institutional and programme accreditation; 1998 establishing professional HE and private HEI and expansion fee-charging education in public universities; Changes in admission procedures of HEIs;	2003: Quality Assurance Committee under auspices of Estonian Rectors' Conference; Introduction Bologna principles; New funding formula based on output (performance-based);	2009/10: introduction of three year contract between state and institution; 2007 significant increase in basic funding of study places; Changes in study allowances and study loans; 2005: introduction of base-line funding for research
	Tuition fees introduced in early 1990s but have become increasingly important as source of income; shift from detailed input line item funding to lump sum allocation system			
Finland	1994: budgeting based on operational expenditures and performance agreements between state and HEIs;	Universities Act 1997: HEIs responsible for quality assessment; national coordination of quality assurance by Finnish Education Evaluation Council; 1998: professors appointed by institutional leadership instead of by the state; Introduction of Universities of Applied Sciences (polytechnics), started in 1991;	Polytechnics Act 2003	2006: introduction of institution-based new salary system based on work load and performance; 2006: universities can establish university companies; introduction of national and regional innovation systems; 2009/10: new act prepared and might change legal status of universities, internal governance and ownership of property; Mergers of universities and alliances of universities and polytechnics

Country	Prior to 1995	1995-1999	2000-2004	Post 2004
	Over the last decade a shift from line item budgeting to lump sum funding as well as from historically-based to formula funding;			
France	1980s multi year contracts between HEI and state, as 'side effect' created gradually more administrative autonomy	1999 Innovation act: mobility of teachers-researchers	Introduction Bologna principles (LMD reforms)	2005 Pact of Research e.g. clustering of research and teaching, 'leading' to 2006 Law for Research: increase research excellence and visibility; 2006 LOLF increased efficiency in university management in finance and HR; 2007: introduction Agency for the Evaluation of Research and Education; 2007 Law for Autonomy of Universities (LRU): more institutional governance and funding autonomy.
Greece			2001 upgrading TEIs to HEIs and formation of binary system	2005: new agency for recognition of degrees; 2005: introduction quality assurance, ECTS and diploma supplement; 2007: changes in internal university organization; maximizing study duration; scholarships and student loans, stronger demands for transparency, publicity and accountability; New allocation model for state funding and four year strategic plans for HEIs
Hungary		1995 introduction of 'cost covering' students 1996 Introduction formula funding	2000 Integration of HEIs ('mergers') 2001 introduction of student loan system	2005 introduction of Financial Board at institutions 2005 changes in admission and allocation of students 2005 increasing financial autonomy 2006 introduction of three year performance funding contracts
	Increasing institutional freedom in deciding on internal governance structures			
Ireland		1997 University Act: greater academic freedom, autonomy for universities and internal quality assurance; Abolition of tuition fees; Introduction competitive funding for research;	2003 National Qualifications Framework; 2003 establishment of Science Foundation Ireland and research councils, increase in research funding with greater emphasis on competitive funds	2006 Institutes of Technology Act: giving IoT more autonomy and becoming part of HE act (for greater coherence); 2006 Grant Allocation Model replacing historical funding system with more output and performance-based parameters;

Country	Prior to 1995	1995-1999	2000-2004	Post 2004
Iceland		1997 University Law: opening up for private universities; Colleges were entitled to call themselves universities; More institutional autonomy (deciding on own internal structure, more external memberships); More systematic external quality assurance; 1998 introduction performance-based funding;		2006: public and private institutions get equal status; Adaptations in act as regards Bologna principles; 2008 new act stipulating that majority of senates are external stakeholders
Italy	1989 first start with granting more institutional autonomy.	1993-1995-1996: more institutional autonomy; Introduction of new national body to evaluate teaching and research; 1999: each university has to establish an internal evaluation body 1997: decentralization of authorities from state to institutions; 1995: shift from line item budgeting to lump sum allocation;		
Latvia	1991 Law on Education – private institutions were allowed and tuition fees introduced	1995 Law on HE	2001 introduction formula funding – 'contract-like' arrangements between state and HEI; Adaptations internal governance structures: strengthening leadership and management roles; Introduction of Higher Education Council – national strategic advisory body;	2006: universities become 'autonomous public entities'; 2006: ministerial approval of HEI research plans with separate funding for strategic research;
Liechtenstein	1992 first HEI (University of Applied Sciences)		2004 new HE act as the result of the Bologna process; Changes in state education support; Introduction new funding formula	2008 *Hochschule Liechenstein* given right to award doctoral degrees; 2009 new act proposed

Country	Prior to 1995	1995-1999	2000-2004	Post 2004
Lithuania	1991 Law on HE&R	1995 establishment of Lithuanian Centre for Quality Assessment in HE	2000 introduction of student registration fee; Less autonomy: study programmes must be in accordance with (strict) guidelines that are approved by government ('national curricula'); Introduction binary system – establishing non-university colleges; Change internal university governance: introduction university council (or board) with partly external membership; linking university funding to research performance;	2009 new act: change in legal status HEIs; Change internal governance structure with more powers of the university council/board; Expanding performance-based competitive funding; Abolition of the 2000 registration fee; Changing student support system; Introducing 'student basket'
Luxembourg			2003 establishment University of Luxembourg;	
Netherlands	Since 1985 several reforms to increase institutional autonomy and introduce quality assurance systems for teaching and research; mergers of *hogescholen* starting in 1983;	1997 change internal governance structure: strengthening executive leadership and introduction of supervisory board with external members; More emphasis on valorization (transfer and 'utilization' of knowledge); More conditional funding for research; 1996: introduction of student performance grant;	2002/03 introduction of Bologna principles; accreditation system along side existing evaluation systems for teaching and research; 2001 strengthening applied research function of Universities of Applied Sciences (e.g. through new staff category)	

Country	Prior to 1995	1995-1999	2000-2004	Post 2004
Norway			2001/04: implementation Quality reform with more output-based funding system, introduction of compulsory national quality assurance system and an independent QA agency (accreditation) and enhancing institutional autonomy as regards its own internal governance structure and programmes offered; 2005 common regulatory framework for both public and private HEIs; 2003 colleges that offer a minimum of four doctoral programmes can apply for university status; Introduction Bologna principles with new degree structures; A more performance-based student support system;	
Poland	1990 ministry issues national curricula; private HE possible, introduction tuition fees		2001 introduction mandatory internal quality assessment for teaching and establishment state accreditation commission; 2001 same conditions for private and public students as regards student support	2007 mandatory external quality assessment of research; 2005 shift from entrance exams to external maturity exams; Shift from ministry to State Accreditation Committee as regards curricula; 2005 student representation in governing bodies of public universities increased; 2010: establishing flagship universities foreseen; more transparent academic careers foreseen; charging tuition fees for full time public students foreseen; HEIs more freedom to develop their own curricula foreseen

Country	Prior to 1995	1995-1999	2000-2004	Post 2004
Portugal	1988 Law on Autonomy – increased institutional autonomy, new governing boards with external participation, possibility of independent legal status for public institutions, establishment of consortia, recognition of research centres as part of university management		2003/05 performance-based formula funding; differentiation of tuition fees;	2006 regulations access for students over 23 years; 2007 introduction student loan scheme 2007 new legal regime for HEIs which changes internal governing structure and creation of new type of institutions (public foundations by private law); Changes internal governance: less collective decision-making, reduction size governance bodies, less student participation and more external involvement
Romania	Before 1990 completely centralized system; 1993 accreditation law; more democratized internal governance systems	1995/97/98 more financial and academic autonomy in universities; universities entitled to raise both public and private funds (e.g. tuition fees); Private universities can compete for public research funds; 1999 introduction new formula funding system 1998 ministerial strategic plans as basis for contracts between state and HEI		2005/07 quality assurance reforms – introduction periodical quality evaluation 2005 introduction Bologna principles Restructuring (reducing) the number of HE specializations; Introduction of doctoral school system;
Slovakia			2002 state HEIs are transformed to public institutions; Institutional autonomy increased; Faculties no longer legal entity; 2003 universities own their property; 2002 changing conditions for private institutions – growing number of privates; Less direct state steering – developing national strategic plan and HEIs develop their own strategic plans – to be discussed with ministry; 2002 introduction Board of trustees – strengthening link between institution and society; Introduction targeted funding and increase competitive funding;	

Country	Prior to 1995	1995-1999	2000-2004	Post 2004
	More output-driven formula funding; HEIs can decide on tuition fees for special groups of students;			
Slovenia	1993 universities became legal entities, private HEIs allowed;	1997 establishment National HE Quality Assessment Commission; 1999 financial autonomy and ownership of property; Democratization of internal university governance;	2004 introduction of lump sum funding; Introduction quality assurance system; 2004 composition of the administrative board changed;	2008 Senate of Evaluation responsible for QA – replacing 1997 national evaluation body;
Spain (Catalonia)	1983: autonomous status universities within regulatory framework; authority shift from federal to regional level; professors 'belong' to university and not to national body;		New Universities Act Catalonia (2001) with subsequent reform in 2007; Some lay persons in university social council; election of rector by direct vote; increase staff representation; Accreditation by new national agency for quality assessment and accreditation; Catalonian Universities Act 2003: system structuring, increase university funding, framework for contract teaching staff;	2007: more institutional freedom for curriculum design; More freedom to open new posts and select academics; More freedom to decide on internal organization;
	Gradual introduction of quality assurance system and reorganization competences regional quality agency; introduction formula funding with more emphasis on outputs; targeted national funding for teaching quality and student mobility; growing importance of competitive research grants			
Sweden	1993 HE act; early adopter of reforms (early 1990s) concerning devolving authorities from the state, management by objectives, quality assurance, accountability and performance-based funding;	1995 national system of quality assurance and creation National Agency for HE; 1997 more detailed result specifications funding, all HEIs granted funding for research; 1998 rector no longer chair of University Board, chair and most board members appointed by state (changed in 2007); 1999 new rules for HR based on merit and research production; 1999/00 HEIs may apply for changed status – colleges becoming universities;	2000/01 establishment of four research funding bodies; Increasing focus on strategic management;	2006 implementation Bologna principles – new study structures; 2009 new system public funding gradually introducing research performance-based funding; 2011 foreseen changing legal status universities to autonomous organization with special public law status – staff no longer governmental employees, more entrepreneurialism, more institutional strategic profiling, multi annual contracts between state and institutions;
Switzerland		Establishment of Universities of Applied Sciences; Reform federal Act: strengthening joint governance structures and cooperation between Confederation and cantons;		Preparation new HE Act – common framework for whole higher education system

Country	Prior to 1995	1995-1999	2000-2004	Post 2004
	General increase autonomy HEIs; gradual reform funding system from historically-based to more balanced system			
Turkey	1981 integration all HEIs; 1982 introduction private institutions		2003/07 public funds allocated through performance-based system in accordance with annual plans of universities;	2005 yearly internal assessment of academic and administrative activities and external assessment every five years; 2005 establishment of Commission for Academic Assessment and Quality improvement in HE; 2005 intention to increase student participation in HE governance – introduction of national and institutional student councils;
United Kingdom	Early adopter of 'NPM reforms'; introduction of influential Research Assessment Exercises; 1992 abolition of the binary system; Quality Assurance systems; Funding councils	1997 introduction tuition fees (flat rate);		2006 introduction variable tuition fees

Appendix 2: National experts

Country	National expert	Institution
Austria	Hans Pechar	University of Klagenfurt
Belgium	Kurt de Wit	Katholieke Universiteit Leuven
Bulgaria	Pepka Boyadjieva	Institute of Sociology, Bulgarian Academy of Sciences
Croatia	Danijela Dolenec	Institute for Social Research
Cyprus	Petros Pashiardis	Open University of Cyprus
Czech Republic	Ales Vlk	Independent consultant
Denmark	Hanne Foss-Hansen	University of Copenhagen
Estonia	Hanna Kanep	Estonian Rectors' Conference
Finland	Timo Aarrevaara	University of Tampere
France	Christine Musselin	Centre de Sociologie des Organisations (Sciences Po and CNRS)
Germany	Barbara Kehm	INCHER–Kassel
Greece	Rania Filippakou	Institute of Education, University of London
Hungary	Jozsef Temesi	Corvinus University of Budapest
Iceland	Jón Torfi Jonasson	University of Iceland
Ireland	Lewis Purser	Irish Universities Association
Italy	Emanuela Reale	Cnr CERIS
Latvia	Indrikis Muiznieks	University of Latvia
Liechtenstein	Benedetto Lepori	University of Lugano
Lithuania	Rimantas Zelvys	Vilnius Pedagogical University
Luxembourg	Fritz Ohler	Technopolis
Malta	Carmel Borg	University of Malta
Netherlands	Ben Jongbloed	CHEPS, University of Twente
Norway	Bjorn Stensaker	NIFU STEP
Poland	Wojciech Duczmal	The Academy of Management and Administration in Opole
Portugal	Pedro Texeira	University of Porto
Romania	Luminita Nicolescu	Academy of Economic Studies
Slovakia	Gustav Murin	Comenius University
Slovenia	Aleksandra Kovac	CHEPS, University of Twente
Spain	Pepe Mora	Institute of Education, University of London
Sweden	Anki Dällnes	SISTER
Switzerland	Benedetto Lepori	University of Lugano
Turkey	Fatma Mizikaci	Eastern Mediterranean University
United Kingdom	Paul Temple	Institute of Education, University of London