

Higher Education Financing in the New EU Member States

Leveling the Playing Field

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The report is part of a series of studies on current issues in public finance reform in the Central European and Baltic countries (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia—the “EU8”) which joined the European Union on May 1, 2004. These studies have been undertaken since 2005 and coordinated and edited by Thomas Laursen, Lead Economist for Central Europe and the Baltic States in the World Bank. Marta Michalska provided excellent administrative and logistical support throughout the process of preparing these studies.

Executive Summary¹

The EU8 countries have enthusiastically embraced mass higher education, and are rapidly closing the gap between themselves and the EU15 in enrollment rates and the incidence of higher education in the population of working age. This expansion is helping these countries to insert themselves into the global knowledge economy, as a high proportion of their graduates get jobs in the knowledge-intensive services sector. At the same time, resources per student are declining, raising concerns about the quality of higher education. Also, the emergence of private higher education institutions and introduction of fees for student who do not gain regular admission, have resulted in a dual-track system that is affecting the equity of access to higher education. The study by Mary Canning, Martin Godfrey, and Dorota Holzer-Zelazewska reviews the experience with a variety of financing mechanisms in the EU8 countries and seeks to develop some useful policy options to “level the playing field” for countries contemplating further reforms, which would include the introduction of variable fees, needs-based grants and loans to increase private financial flows into higher education while facilitating equal access across the board.

Average enrollment in higher education in the EU8 countries is now equivalent to well over one-half of the relevant age group, and the annual number of tertiary graduates (per 1000 people) now exceeds that of the EU15 (although, on average, the proportion of the 25–64 population with higher education remains larger in the latter group of countries). With the coming of a market economy and substantially greater opportunities for university graduates, both in local private sectors and now potentially elsewhere in the EU, the private benefits from university education have increased considerably both in terms of higher income and lower rates of unemployment. The earnings premium for higher education in the labor market is particularly high in countries where higher education still has some scarcity value. Unemployment rates (similar on average in both the EU8 and EU15) vary between countries but are invariably lower for higher education graduates than for those with lower levels of education. Overall, the private rate of return to higher education is still high in the EU8 and, given the pattern of subsidization, likely to be higher than the social rate of return.

Most EU8 countries have managed to protect the percentage of GDP that is devoted to public expenditure on education, and the spending on higher education is comparable to the EU15 (around one percent of GDP). However, EU8 countries spend a much higher proportion of GDP per head per student in public tertiary institutions than EU15 countries, and a much higher multiple of expenditure per primary school student. The number of Euros spent per tertiary student, adjusted for differences in purchasing power, is less than one-half of the level in the EU15. Expenditure per head seems to vary inversely with enrollment rates, which suggests at least the possibility of a tradeoff between the accessibility and quality of higher education from the student’s point of view. While such cross-country comparisons between countries with different salary levels, even when adjusted for purchasing-power differences, are fraught with problems, there is little doubt that an increase in unit expenditure will be needed.²

1. Prepared by Thomas Laursen.

2. Tertiary institutions in the EU8 spend a lower percentage of their budgets on research and development than do their counterparts in the EU15, but even if this is taken into account, the contrast in unit educational spending remains.

The small role of fees in most EU8 countries does not mean that parents and students avoid paying for higher education. Many countries have instituted a dual system, maintaining fee-free higher education for regularly admitted state-supported students, while adding a special fee-paying track for those who fail to gain such admission. Institutions have also imposed and increased user charges for formerly heavily-subsidized board and residence facilities, which are borne by students or their parents, as are the costs of living for those who do not make use of such facilities. Also, although a significant proportion of educational budgets remains devoted to stipends, maintenance grants or other types of financial aid to students, they have been eroded by inflation to virtually nominal levels in many EU8 countries. The dual-track system means that there are two classes of students—those whose education expenses are nominal, and those who pay fees equivalent to several thousands of dollars. Those who obtain fee-free, state-subsidized places are disproportionately from privileged families (which have contributed to their academic success); poorer students, who are less successful in entrance examinations and cannot afford the alternative fee-paying track, are generally excluded from higher education. In order to facilitate entry to higher education for students who need financial support to pay fees and/or maintenance costs, several EU8 countries have instituted loan systems.

The trend towards increased participation in higher education can probably not be combined with the improvement in quality and relevance that is needed in order to be competitive within the EU and to increase participation in the global knowledge economy, unless the amount of money available to institutions increases. At the same time, government budgets are severely constrained, and it is difficult to justify an increase in public allocations to higher education which yields high private rates of return to people who are disproportionately from privileged backgrounds. Also, the increasing internationalization of higher education and cross-border labor mobility from the new toward the old EU member countries reduces assurances that university graduates will eventually pay for their education through income taxes. Thus, it is almost inevitable that average fees in tertiary institutions would have to be increased to a level which covers a significant proportion of total costs. The level at which tuition fees are set is clearly not only an economic but also a political issue. There is a strong case, on the grounds of revenue maximization, efficiency, autonomy, and equity, for making such fees variable, rather than fixed and uniform.

The extension of fees to all students and an increase in their average level would imply a need for wide-ranging student loan systems. The authors argue in favor of income-contingent loans carrying “unsubsidized” interest rates.³ Repayments would be income contingent, calculated as a given percentage of the borrower’s earnings until the loan has been repaid. Those who take out loans effectively get their higher education free at the point of use, repaying only later if and when they can afford to do so. Thus, even the most risk-averse students (often assumed to come disproportionately from low-income backgrounds), may be willing to borrow in order to finance their studies. Several countries have introduced student loan schemes, but with varying success. The authors note that there are several pre-conditions for effective student loan schemes, including ways to keep track of people’s movements and systems of withholding at the point of wage and salary payment. Further, to the extent private banks are involved, there would need to be a system of clear and cred-

3. Interest rate subsidies add a lot to the costs of a loan scheme, divert funding from quality improvement to student support, and are deeply regressive (mainly benefiting successful professionals in mid-career whose loan repayments are switched off early because of the subsidy).

ible government guarantees and proper fiscal accounting for these. Student loans could be supplemented with scholarships and grants for those who truly need it.⁴ However, income contingent loans (and other subsidies) raise difficult issues of both feasibility and equity. Means-testing is complicated by the fact affluence may depend not only on current income, and further, there is no assurance that wealthy parents would pay for their children's education. Means-tested loans and grants to higher education students are, at best, a blunt instrument and need to be backed up by other measures to promote equity in access.

Such reforms would allow the inequitable dual-track system to give way to a single-track system, under which all students pay tuition fees, and to a distribution of state subsidies based primarily on need, rather than on academic ability. Thus, a system of deferred tuition fees (i.e. combined with a well-designed system of student loans), supported by a system of scholarships or grants targeted to those who need them, is an essential part of any strategy for expanding quantity, improving quality and achieving equitable access. Students should be eligible for government subsidies whether they are attending a public or a private institution. At the same time, it is the role of the government to set and monitor quality standards for all tertiary institutions, regardless of ownership. The combination of variable fees, needs-based grants, and loans would also help to increase the current and future labor market relevance of the specializations chosen by students.

The study also stresses that further reforms in the criteria for determining the amount of public money to be allocated to each tertiary institution would help increase transparency of funding and efficiency. Having started with fairly simple "money-follows-the-student" formula, including competitive and experimental funding mechanisms to encourage innovation and research would be useful in meeting the required policy goals. Further governance reforms, particularly in institutional management and procedures for appointing leaders of autonomous tertiary institutions, are likely to be needed to ensure that lump sums allocated through such mechanisms are used in a way that is sensitive to the public interest. While deregulation and increased autonomy of universities have made higher education more sensitive to student choice and labor market developments, closer links between the university and the private sector are desirable, also to attract private funds through endowments and other mechanisms.

Decreased reliance on government funding and increased reliance on price incentives would not mean the elimination of a role for governments in relation to higher education. They would still be an important source of funds, organize and oversee student loan schemes, and be responsible for the promotion of equitable access. They would also have to ensure that quality assurance systems are in place, and would be able to design and use formula-funding schemes to achieve national objectives that go beyond those of the immediate market and to modify excessive competition between institutions. What is needed, rather than detailed interference in academic processes, is a combination of standard-setting and financing systems designed to ensure high-quality outcomes which would be communicated to stakeholders through accurate, impartial and easily available data. The rest could be left to higher education institutions, autonomous but accountable in their governance arrangements.

4. Institutions and governments could offer a few competitive scholarships to the strongest candidates to provide an incentive for competition in the qualifying process.

Introduction

While historically, EU8 universities were elitist in nature, there were also inherited differences among these countries. Before 1945, in the CEE countries, higher education systems had broadly evolved along the lines of the Austro-Hungarian and German models; in the Baltics, the model was closer to the Soviet system. Under communism, universities were, at least notionally, treated as homogenous and equal. State financing was organized centrally and on a historical basis. While higher education was free of charge, access to higher education was, for the most part, in the hands of the universities, and institutions were able to control admissions through their own entrance examinations, a practice which was opaque and frequently inequitable.⁵

In the Communist era in Central Europe, the proportion of the working-age population that had attained tertiary education was between 11 and 15 percent, with at most, modest increases since the 1960s. In the Baltic countries, the proportion was larger. Everywhere, tuition was free. Although this involved a concentration of a large amount of government expenditure on a relatively small minority of the population, this was not wholly inequitable, since, in centrally planned economies, the State was virtually the sole employer of graduates, whose jobs may have had more power and prestige attached to them, but whose pay scales were marginally (if any) higher than those for skilled workers.

With the coming of a market economy and substantially greater opportunities for university graduates, both in local private sectors and now potentially elsewhere in the EU, the private benefits from university education have increased considerably both in terms of higher income and lower rates of unemployment. This has been reflected in sharply increased demand for tertiary education in all post-socialist countries. In some countries, such as

5. On occasion, there was political interference with admissions practices.

Poland, Hungary, Latvia, and Estonia, the growth in demand has been met partly by a rapid increase in private provision. In other countries, public institutions have increased their enrollment.

At the same time, university programs began to change. Prior to transition, higher education was biased toward programs in engineering and the physical sciences, with ministries of science and industry often setting enrollment quotas. Deregulation and increased autonomy of universities made higher education more sensitive to student choice and labor market developments, rather than the dictates of central planning.⁶ By 1995, there was a marked shift in enrollments everywhere, away from science and engineering courses and toward the social sciences, which had been neglected under socialism.

Throughout the 1990s, the difficulty of managing centrally a growing and more diversified higher education system became increasingly clear. Inevitably, enlarged participation began to raise questions about the sustainability, equity, and quality of the systems. Accordingly, new legal and quality assurance frameworks were developed everywhere to accommodate the need for more flexible institutions with new forms of governance and management. In most countries, private provision of higher education services emerged in response to the need for system expansion. Some countries developed a school leaving examination (the Matura system), which began to act as a national entry examination for the universities, thus introducing greater intellectual equity of access. By the later part of the decade, the Bologna process, which aims to establish a European Higher Education Area (with mobility of students and teachers, convergence towards a common framework of qualifications and cycles of study, and measures to encourage lifelong learning by 2010), was providing an incentive for even greater flexibility in the organization of degree programs.⁷

By the middle of the 1990s, new forms of allocating finances to universities had emerged: block grants (the Czech Republic); normative financing, based on the number of students and on norms for research and maintenance (Hungary); and performance-related financing (Estonia), to name but a few. For example, by 1999 Hungary had merged many of its universities to achieve economies of scale and to improve quality, had developed an innovative income-contingent student loan scheme, and had begun to encourage inter-institutional competition through the application of rigorous investment evaluation criteria to all institutional investments. The economic reality of the need to attract more private financing into the system, to offset the limitations in state funding, had also become clear.

As tertiary enrollment rates increase, questions are arising about the proper extent of public funding at this level. In general, there is a case for continued public funding, but the taxpayer cannot be expected to pay the whole of the cost because:

- it is unaffordable, colliding with competing fiscal imperatives and to the likely detriment of quality; and
- it is unfair, because it is regressive—most of the beneficiaries of subsidized higher education come from families with incomes higher than those of the average taxpayers who provide the subsidies (Barr 2004)—and because the returns are largely private.

6. Outcomes determined by student choice can conflict with labor market demand if subsidies distort the relative costs of different types of courses, and boost private in comparison with social rates of return.

7. See Eurydice (2004) for further discussion of the Bologna Process.

Upfront charges (payable at the outset of or during the period of study) are also unfair because they deter students from poorer backgrounds. Thus, a system of deferred tuition fees (i.e. combined with a well-designed system of student loans), supported by a system of scholarships or grants targeted to those who need them, is an essential part of any strategy for expanding quantity, improving quality and achieving equitable access.

Developing an efficient and equitable financing system is not easy. Some new EU countries, however, have gone further in this direction than others, and one purpose of this paper is to review this experience. Because of the social benefits from higher education, as well as the political impossibility of eliminating all tuition subsidies, universities are likely to remain very substantial recipients of direct government grants. A mass system and increasing institutional differentiation require a wider variety of public allocation mechanisms. The range of mechanisms includes traditional line item budgeting, block grants, formula funding, and competitive and performance-based funding. Funds can also be channeled directly to students through scholarships, vouchers, and mortgage and income-contingent student loans. The rest of this study will discuss the growing experience with a variety of financing mechanisms in the EU8 countries, drawing on detailed country case studies, and will seek to develop some useful lessons of experience, mindful that each country will continue to develop its own solution based on national priorities.

Chapter 2 provides an overview of current higher education systems in the EU8 in a comparative perspective. Chapter 3 suggests some directions for further reform initiatives. Chapter 4 concludes.

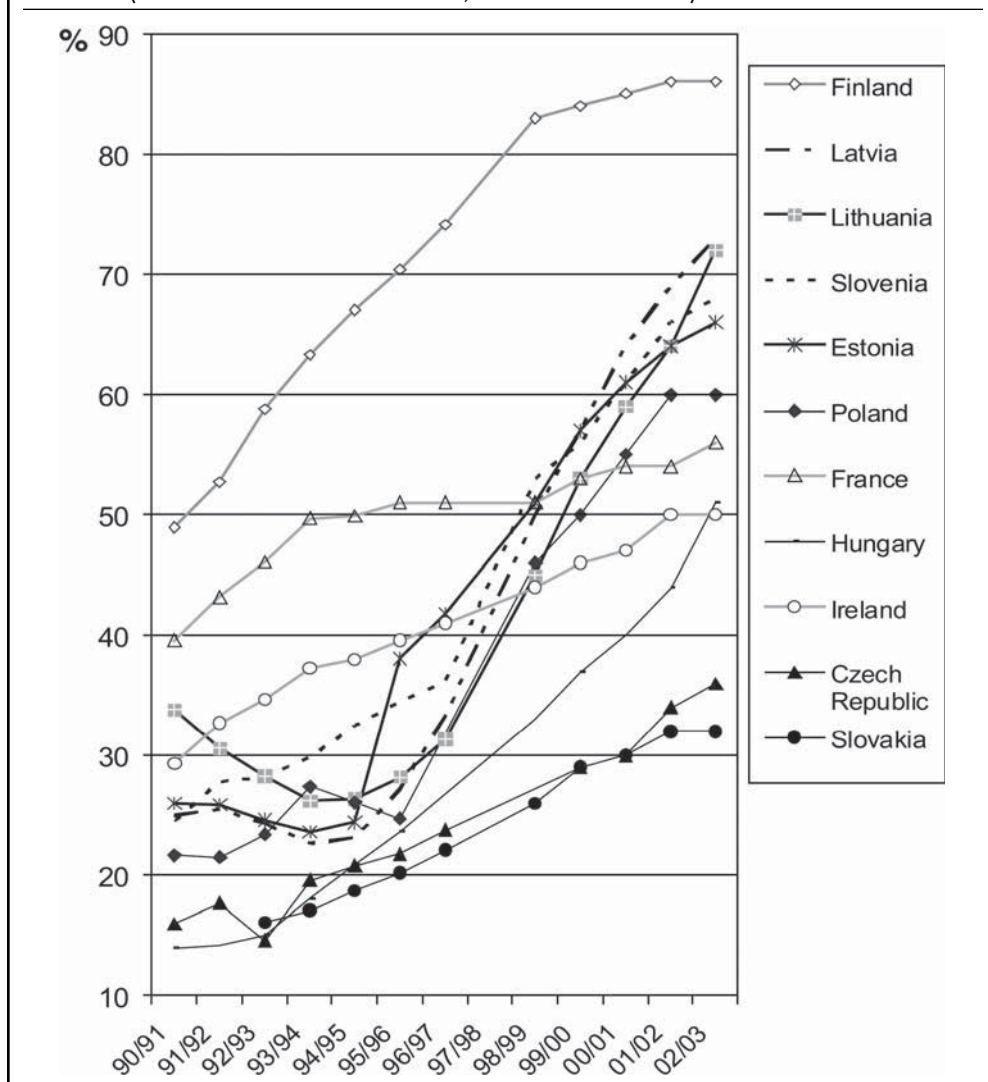
Higher Education Systems in a Comparative Perspective Scale and Impact of Higher Education

EU8 countries have, as already emphasized, joined the headlong rush towards mass higher education (Figure 1). The fastest rate of increase in enrollment rate over the whole 1990/1–2002/3 period was shown by Hungary, followed by the three Baltic countries and Poland. Expansion in Finland, France and Ireland, which started the period with relatively high enrollment rates, has lagged behind that in most of the EU8.

By 2002, average enrollment in higher education in the EU8 countries was equivalent to well over one-half of the relevant age group: rates in the Baltic countries, Poland and Slovenia exceeded 60 percent, while the Czech Republic, Slovakia and (in spite of its fast expansion), Hungary were lagging. In many countries the number of part-time students has increased disproportionately: in Slovakia, for instance, they now account for a third of total enrollment. In 2002, the number of tertiary graduates per 1,000 people in their twenties was slightly higher in the EU8 than in the EU15 countries, with Lithuania and Poland leading the way, and the Czech Republic and Slovakia lagging. On average, the proportion of the 25–64 population with higher education is still larger in the EU15 countries than in the EU8, but Estonia and Lithuania have unusually highly educated populations. Higher education is slightly more feminized in the EU8 group, with the Baltics showing particularly large proportions of women among their students. Student/teacher ratios are similar on average in the two groups, but there are wide variations between the EU8 countries, from Estonia with very few students per teacher to Slovenia with very many. The proportion of students enrolled in science and technology courses (most of them more expensive than humanities courses), is smaller, on average, in the EU8 than in the EU15, but the two countries with the lowest enrollment rates, the Czech Republic and Slovakia, are ahead of the rest in this respect.

Higher education institutions are important for the EU8 countries' efforts to insert themselves into the global knowledge economy. On average, about 14 percent of 25–34 year olds

Figure 1. Gross Enrollment Rates in Tertiary Education
(EU8 & selected EU15 countries, 1990/91–2002/2003)



Source: Gross enrollment rates are from UNESCO Institute for Statistics, *Global Education Digest 2005*; attainment rates in column 3 are from EUROSTAT Labor Force Survey database; other data from EUROSTAT and UNESCO databases and OECD, *Education at a Glance 2004*.

in the EU8 labor force in 2003 consisted of tertiary graduates who were employed as professionals or technicians—a higher proportion than in the case of older age groups, although below the 18 percent average in the EU15 (Table 2). Slovenia had a particularly high percentage in this category—comparable to Ireland. Most EU8 countries have been increasing the total number of graduates in these occupations at a faster rate than the EU15 average. Moreover, these are not old-style scientists and technologists: two thirds of them (not much lower than the EU15 average) were working in knowledge-intensive services.

Table 1. Higher Education Indicators (EU15 and EU8 countries)

	Gross enrollment rate, 2002/03	Tertiary graduates during 2002 per 1,000 population aged 20–29	% of 25–64 population with higher education, 2004	Females as % of total, 2002	Student/teacher ratio, 2002	Students enrolled in science, mathematics, computing, engineering, manufacturing & construction as % of total, 2002
EU15	58%	45		53%	16	27%
of which:						
France	56%	68*	24%	55%	16	
Ireland	50%	71	28%	55%	15	34%
Finland	86%	58*	34%	54%	16	37%
EU8	57%	48	16%	57%	17	23%
Czech Republic	36%	26	12%	51%	12	32%
Estonia	66%	41	31%	61%	9	21%
Latvia	73%	59	20%	62%	21	17%
Lithuania	72%	63	25%	60%	11	26%
Hungary	51%	39	17%	55%	15	18%
Poland	60%	75	15%	58%	20	21%
Slovenia	68%	48	20%	58%	32	21%
Slovakia	32%	31	13%	52%	12	28%

Notes: Females as % of total and % of 25–64 population with HE are weighted average for EU15 and EU8 (other averages unweighted); Denmark and Portugal missing from EU15 average for student/ teacher ratios. The gross enrollment rate (as a % of the population in the five-year age group following on from the secondary school leaving age) counts as enrolled all students (full-time and part-time) in tertiary education (ISCED 5 and 6), whatever their ages, as opposed to the net enrollment rate which counts as enrolled only those students in the specified age range. France, Ireland and Finland are arbitrarily chosen for inclusion in this and other Tables and Figures as examples of EU15 countries with different higher-education traditions.

*2001

Source: Gross enrollment rates are from UNESCO Institute for Statistics, *Global Education Digest 2005*; attainment rates in column 3 are from EUROSTAT Labor Force Survey database; other data from EUROSTAT and UNESCO databases and OECD, *Education at a Glance 2004*.

Table 2. Tertiary Graduates in Science and Technology Employed as Professionals or Technicians (2003)

	As % of the labor force aged:			Annual average rate of growth, 2000–03	% of professionals/technicians in knowledge intensive services
age group:	25–34	35–44	45–64	25–64	25–64
EU15	18.0%^a	15.8%^a	15.3%^a	2.5%	68.9%^a
of which					
France	23.7%	14.9%	14.4%	2.6%	67.5%
Ireland	20.1%	16.5%	14.5%	6.7%	75.8%
Finland	26.1%	23.7%	20.2%	...	63.5%
EU8	13.5%^b	11.8%^b	12.0%^b	...	65.0%^{a c}
Czech Republic	9.9%	11.3%	9.4%	3.1%	64.5%
Estonia	14.7%	14.4%	16.7%	–0.2%	66.2%
Latvia	11.6%	9.5%	10.5%	...	58.0%
Lithuania	14.2%	12.9%	13.4%	...	63.6%
Hungary	13.6%	12.9%	13.7%	5.8%	70.4%
Poland	14.9%	11.2%	9.5%	4.8%	...
Slovenia	19.0%	13.8%	13.1%	7.0%	57.8%
Slovakia	10.0%	8.4%	10.0%	5.6%	62.3%

Notes: ^aweighted; ^bunweighted; ^cexcluding Poland.

Source: Eurostat (2004): Statistics in Focus: Science and Technology (November).

As might be expected, the earnings premium for higher education in the labor market is considerable, but seems to be higher in countries where it still has some scarcity value (the Czech Republic, Hungary) and lower in countries with a high proportion of graduates in their population and high enrollment rates (Lithuania; Table 3). Unemployment rates (similar on average in both groups of countries), vary between countries but are invariably lower for higher education graduates than for those with lower levels of education. Again, the impact of higher education (compared with those of upper secondary graduates) on unemployment rates tends to be greater in countries where fewer people have acquired it: among 15–39 year olds, for instance, the impact is the largest in the Czech Republic, and the smallest in Estonia. Except in Lithuania, female tertiary graduates in this age group have higher unemployment rates than males, but in several countries (France, Estonia, Lithuania, and Slovenia), women in this age group gain more in employability from higher education than do men. Overall, the private rate of return to higher education is still high in the EU8 and, given the pattern of subsidization discussed below, likely to be higher than the social rate of return.⁸

8. Both private and social rates of return are based on earnings as a measure of benefit, but after-tax in the case of private and before tax in the case of social (in principle, social benefits should include indirect benefits not captured by earnings). On the cost side, private rates of return are based on costs to the individual, and social returns based on costs including government subsidies.

Table 3. Higher Education and the Labor Market (EU8 and EU15 countries)

	Earnings premium, 25–64 year olds— HE over upper secondary, 2002		Unemployment rate, 15+, 2004 q2				Unemployment rate, 15–39, 2004 q2			
			Higher education		Upper 2ndary		Higher education		Upper 2ndary	
	Both sexes	Females	Both sexes	Females	Both sexes	Females	Both sexes	Females	Both sexes	Females
EU 15	43%	46%								
of which:										
France	50%	46%	6%	6%	8%	10%	7%	7%	10%	13%
Ireland	49%	61%	2%	2%	4%	4%	3%	3%	5%	4%
Finland	50%	46%	5%	5%	10%	10%	6%	7%	12%	13%
EU 8			5%	5%	11%	12%	6%	7%	13%	15%
Czech Republic	79%	70%	2%	2%	7%	9%	2%	3%	9%	11%
Estonia			6%	6%	11%	10%	8%	9%	13%	14%
Latvia			5%	5%	12%	11%	6%	6%	12%	13%
Lithuania	46%	52%	7%	7%	13%	14%	7%	5%	13%	15%
Hungary	110%	79%	2%	3%	5%	6%	3%	4%	7%	8%
Poland	61%		7%	8%	20%	22%	10%	11%	24%	27%
Slovenia	74%	66%	3%	3%	6%	7%	4%	5%	8%	10%
Slovakia			6%	6%	17%	18%	8%	10%	19%	21%

Note: Latvia unemployment rates for Q1–2004; Estonia and Latvia unemployment rates for 15–39 year old females with higher education are estimated. Greece, Luxembourg, and Austria are missing from the earnings premium average.

Source: OECD (2004); and EUROSTAT Labor Force Survey database.

Financing Higher Education

Most EU8 countries have managed to protect the percentage of GDP that is devoted to public expenditure on education (slightly higher on average than in the EU15), but with variations between countries (the Czech Republic and Slovakia are below the average, though not far below the share achieved by Ireland) (Table 4). Real public expenditure on education has increased faster in the EU8 than in the EU15 since 1995, with Lithuania leading the way (exceeding Ireland's rate of increase), and the Czech Republic and Slovakia again lagging behind. The two groups spend the same proportion of GDP on higher education (1.1 percent) but with variations: no EU8 country approaches the 2.1 per cent of GDP devoted by Finland for this purpose. There is less variation in the proportion of the education budget going to higher education—from 17 to 23 percent: Ireland and Finland allocate much larger shares to higher education than any EU8 country.

The challenge facing the EU8 countries in integrating into the EU higher education system is shown by the fact that, while on average they spend a much higher proportion of GDP per head per student in public tertiary institutions than do EU15 countries, and a much higher multiple of expenditure per primary school student, the number of Euros spent per tertiary student, adjusted for differences in purchasing power, is much lower than in the EU15 group (42 percent lower on average). Such cross-country comparisons between countries with different salary levels, even when adjusted for purchasing-power differences, are fraught with difficulties, but the implication that an increase in unit expenditure will be needed for integration purposes is probably correct. Tertiary institutions in the EU8 spend a lower percentage of their budgets on research and development than do their counterparts in the EU15, but even if this is taken into account, the contrast in unit educational spending remains (OECD, 2004). Significantly, expenditure per head seems to vary inversely with enrollment rates, being lowest in Lithuania and Poland and highest in Hungary and the Czech Republic, which suggests at least the possibility of a tradeoff between accessibility and quality of higher education from the student's point of view.

Although higher education students tend to be disproportionately from more prosperous families, there is a tendency in European countries for the public to support them through financial aid.⁹ Financial support to students is strongly biased toward higher education (Table 5). In general, this bias was higher in the EU15 countries than in the EU8: while both groups spent a comparable proportion of their education budget on financial aid to students, the NMS allocated a much larger share to primary/secondary schools than did the existing members. However, there were wide variations between EU8 countries. Poland stands out as a country that spent hardly any of its education budget for this purpose. Estonia spent a higher proportion on financial aid to students at lower levels than at the tertiary level. Latvia (where about 16 percent of publicly funded students receive grants awarded on the basis of academic merit), Slovenia, and Hungary were especially generous to their higher-education students, but the biggest contrast between primary/secondary and tertiary patterns of spending in this respect was in Slovakia, where as much as 10 percent of full-time higher education students received scholarships in 2003. Within the EU15, the examples of France, Ireland and Finland show the wide variation in the models used by different countries.

9. Defined by Eurostat as "transfers from the public sector to students in the form of grants, loans and child allowances, contingent on their status as students."

Table 4. Public Financing of Higher Education (EU8 and EU15 countries, 2001)

	Total public expenditure on education as % of GDP	Change in total real public expenditure on education, 1995–2001	Total public expenditure on tertiary education as % of GDP	Tertiary as % of total public education expenditure	Expenditure per student in public tertiary institutions (EUR PPS)	Ratio of tertiary to primary expenditure per student in public institutions	Expenditure per student in public tertiary institutions as % of GDP per head
EU15	5.1%	14%	1.1%	21%	8426	1.9	38%
of which:							
France	5.8%	12%	1.0%	18%	8043	1.8	33%
Ireland	4.4%	45%	1.2%	29%	9282	2.7	35%
Finland	6.2%	16%	2.1%	33%	9069	2.1	39%
EU8	5.3%	25%	1.1%	20%	4877	2.8	48%
Czech Republic	4.2%	–1%	0.8%	19%	5431	3.3	40%
Estonia	5.5%	31%	1.1%	20%	5143	3.1	59%
Latvia	5.8%	29%	1.0%	17%			
Lithuania	5.9%	52%	1.3%	23%	3274	1.7 ^a	39%
Hungary	5.2%	21%	1.1%	22%	6942	3.0	60%
Poland	5.6%	40%	1.1%	19%	3582	1.6	38%
Slovenia	6.1%		1.3%	22%			
Slovakia	4.0%	1%	0.8%	21%	4891	4.2	49%

Note: ^aratio of tertiary to general (primary + secondary) expenditure per student. EU8 averages are unweighted.

Source: Eurostat website.

Table 5. Financial Aid to Students (EU8 and EU15 countries, 2001)

	Financial aid to students as % of total public expenditure on education		
	All levels	Primary & secondary schools	Higher education institutions
EU15	5.0%	2.8%	13.8%
of which:			
France	3.9%	3.4%	8.4%
Ireland	5.8%	3.3%	11.9%
Finland	8.1%	3.4%	18.2%
EU8	6.6%	5.8%	12.8%
Czech Republic	5.6%	5.9%	7.9%
Estonia	5.4%	6.3%	2.8%
Latvia	9.2%	7.1%	23.5%
Lithuania	6.2%	5.5%	11.9%
Hungary	10.5%	10.1%	19.5%
Poland	0.5%	0.5%	0.4%
Slovenia	11.6%	8.7%	25.6%
Slovakia	3.6%	2.0%	10.5%

Note: Table includes EUROSTAT estimates.

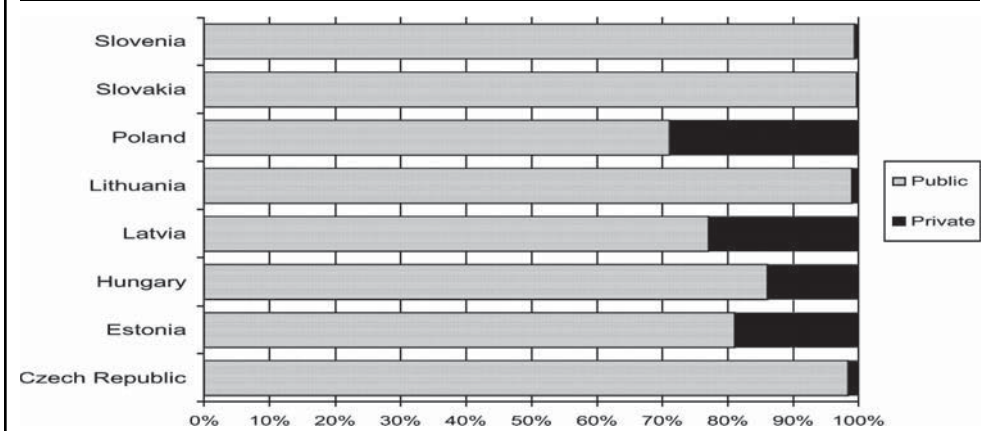
Source: EUROSTAT database.

In most EU15 countries, higher education is funded almost entirely from public sources—the UK is the only country with more than 25 percent private funding (including fees and donations); Italy, the Netherlands, and Spain the only others with more than 20 percent. Data are available for only three EU8 countries: in Hungary, private funding accounted for 22 percent of total expenditure on tertiary education in 2001, while the Czech Republic (with 15 percent private funding), and Slovakia (with only 7 percent), are more in line with the EU15 norm.

Only four of the eight countries—Estonia, Hungary, Latvia, and Poland—have more than 14 percent of their university students in private institutions; in the other four countries, the proportions are negligible (Figure 2). In Latvia, the number of private higher education institutions increased tenfold to 20 between 1991 and 2004, but on average they are much smaller than their 36 public counterparts.

The small role of fees in most EU8 countries does not mean that parents and students avoid paying for higher education. For one thing, many countries have instituted a dual system, maintaining fee-free higher education for regularly admitted state-supported students, while adding a special fee-paying track for those who fail to gain such admission. Institutions have also imposed and increased user charges for formerly heavily subsidized board and residence facilities, which are borne by students or their parents, as are the costs of living for those who do not make use of such facilities. Also, although a significant proportion of educational budgets still goes to stipends, maintenance grants or other types of financial aid to students, they have been eroded by inflation to virtually nominal levels in many EU8 countries (Johnstone, 2004).

There are large differences in the higher education expenses borne by parents and students in public institutions, between the more and the less fortunate categories of student in some

Figure 2. Share of University Students in Public and Private Institutions (EU8 countries, 2002)

Source: UNICEF: TransMONEE database.

of the EU8 countries that have introduced a dual-fee-track system (Table 6). In Poland, although the constitution guarantees free higher education to all who achieve entry level qualifications, over 50 percent of all students pay some form of tuition fees (when the numbers of extra-mural, part-time or evening students who can be charged tuition fees are added to those attending private HEIs) (World Bank and EIB 2004). In Hungary, state-funded full-time students pay no fees and receive subsidies for books and living costs, while those who are not state-funded (for various reasons, including below-average scores in entrance examinations) pay tuition fees and all their own expenses. In Latvia, state-financed places are rationed, and those who fail to get one (again on the basis of academic merit), have to pay tuition fees. Latvia has significantly increased the proportion of students in the fee-paying track, from 32 percent of the total in 1995/6 to 77 percent in 2004/5, and tuition fees accounted for 31 percent of the income of public higher education institutions in 2002.

Among other countries with a dual-track system, higher education institutions in Slovakia are allowed to charge fees only for a limited range of services, and full-time students do not pay tuition fees (unless the study time exceeds the standard length). However, many institutions collect fees illegally from part-time students. In the Czech Republic, students in public higher education institutions do not pay fees for study programs provided in the Czech language, unless they have exceeded the standard length of study by more than one year, or are enrolled in more than one program at the same time. Tertiary professional schools (ISCED 5B) do, however, charge tuition fees (ranging from €90 to €1,100 per year, depending on the ownership of the school: regional; church; or private). In Hungary, students in public universities and colleges who have achieved a minimum level in their secondary school-leaving examination do not pay tuition fees in most fields of study. In Lithuania, only half of the full-time students in universities and 20 percent in post-secondary colleges pay fees; the rest are totally funded from the state budget. Fees are set at a nominal level and are equivalent to less than 10 percent of the national budget expenditure per fulltime university student (and less than 6 percent in the case of colleges). Exemption from fees is awarded to students based on their academic performance. Full-cost fees are paid only by extra-mural, evening, and postgraduate students. In Slovenia, all full-time undergraduates

are financed by the state: only part-time undergraduate and all postgraduate students pay tuition fees.

The dual-track system means that there are two classes of students in higher education institutions—those whose instructional expenses are nominal, and those who pay fees equivalent to several thousands of dollars. If student living expenses are included, the cost of putting a fee-paying student through higher education looks prohibitive.¹⁰ Those who go to private institutions can pay even higher tuition fees—ranging from \$3,500 to \$8,000 in Poland, and from \$1,400 to \$16,700 in Latvia in 1998/99 and 2003/04, respectively (adjusted for differences in purchasing power).

Table 6. Higher Education Expenses Borne by Parents and Students (first degree, public institutions: Poland, Hungary and Latvia; US\$ PPP)

	Hungary 2000/1						
	Poland 1998/9		State-funded students	Non-state-funded students	Latvia 2003/4		
	Moderate	High			Low	Moderate	High
Instructional expenses							
Tuition fee	0	3696	0	2400	0	1666	10095
Other fees	0	0	50	530	71	48	95
Books etc.	271	271	0	...	24	33	52
Sub-total	271	3967	50	2930	95	1747	10242
Student living expenses							
Lodging	1359	1630	750	1800	0	952	11428
Food	2446	3261	750	1200	2000	2857	8571
Transportation	163	163	300	180	743	1714	4571
Other personal expenses	434	516	600	1800	2286	2857	6743
Sub-total	4402	5571	2400	4980	5449	8380	32213
Total cost to parents & student	4673	9538	2450	7910	5544	10127	42455

Notes: In Poland, “moderate” = living in a dormitory or shared apartment; “high” = extra-mural, part-time or evening student, living as an independent adult. In Latvia, “low” = enrolled in a state-financed slot, living with parents; “moderate” = moderate public tuition fee, living in a dormitory; “high” = high public tuition fee, living as an independent adult.

Source: The International Comparative Higher Education Finance and Accountability Project, Graduate School of Education, State University of New York.

An anomaly associated with the dual-fee-track system is that it tends to penalize students from disadvantaged families. Those who obtain fee-free, state-subsidized places are disproportionately from privileged backgrounds (which have contributed to their academic success); poorer students, who are less successful in entrance examinations and cannot afford the alternative fee-paying track, are excluded from higher education. Throughout the OECD, participation rates of 18–24 year-olds in higher education vary strongly and directly with parents’ levels of education (Blöndal, Field, and Girouard 2002). In Poland, for example,

10. Even in the case of non-fee-payers, student/parent expenses are considerable.

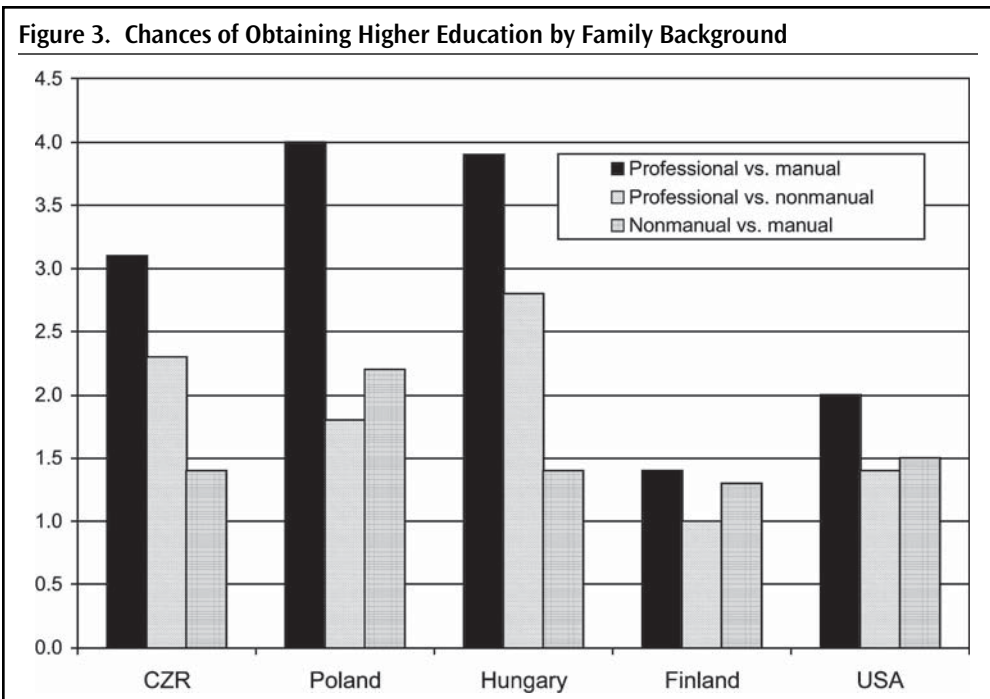
there is a 17-percentage-point difference between the education enrollment rates of 19–24 year olds of the richest and the poorest consumption quintile (Table 7). This probably understates the influence of differences in family backgrounds, since students living away from home in bed-sitting rooms are counted as one-person households (with presumably a relatively low budget).

Table 7. Poland: Enrollment Rate by Age Group and Household Consumption Quintile (2003)					
Age group: & quintile:	3–6	7–10	11–15	16–18	19–25
I	4.6%	94.7%	99.6%	90.9%	36.2%
II	3.8%	95.0%	99.7%	96.1%	46.6%
III	4.2%	95.2%	99.9%	97.2%	52.6%
IV	2.0%	94.1%	99.4%	97.9%	55.0%
V	3.3%	96.4%	100.0%	97.3%	52.6%
Total	4.1%	94.9%	99.7%	94.7%	47.4%

Source: Household Budget Survey database.

The influence of social class on access to higher education may be even stronger in the EU8 than in other industrialized countries (Figure 3). In Poland and Hungary, for instance, a 20–35 year-old in 1998 whose father had a professional occupation was four times as likely as a comparable child of a manual worker to have gained access to higher education, whereas in the

USA, the ratio between the chances of the two categories was only two. Moreover, there is strong preliminary evidence for the hypothesis that the post-communist transformation



Notes: Family Background indicated by father's occupation: the Czech Republic, Poland, Hungary, Finland, and the USA, 1998; ratios for individuals aged 20–35.

Source: Matějů, Řeháková, and Simonová (2004).

brought an increase in inequality in access to tertiary education (Matějů, Řeháková, and Simonová 2004).

In order to facilitate entry to higher education for students who need financial support to pay fees and/or maintenance costs, several EU8 countries have instituted loan systems:

- In Latvia, students enrolled in private as well as public higher education institutions are eligible for two types of loans, one covering tuition fees, the other living expenses. The number of loans in 2004 was over 55 thousand compared with less than seven thousand six years earlier. The interest rate is kept to 5 percent by a government subsidy covering the difference from the rate charged by the commercial bank which administers the program. There is a year-long grace period after graduation, and those who get specified jobs in the public sector have their loan repaid by their employer at a rate of 10 percent per year. Other concessions include a 30 percent reduction in debt for every child born or adopted. In addition to the government's program, some commercial banks have started issuing guaranteed loans to students, sometimes in cooperation with higher education institutions.
- In Lithuania, there is an official student loan scheme, but it covers only a very small proportion of fulltime students, probably less than five percent.
- In Poland, the coverage in 2002/03 was about 11 percent of all students.
- In April 2001, Hungary introduced an income contingent student loan scheme (whereby a graduate only makes a repayment if his or her income exceeds a designated level), thus providing an important instrument for the support of further institutional and policy change in higher education. By September 2001, all higher education students enrolling in Hungary were eligible to apply for loans, and in the intervening years interest in this loan scheme has been impressive.
- In Slovakia, there has also been a proposal to extend the system of student loans to cover tuition fees, repayable after a student finishes studying and reaches at least the minimum wage, in addition to the loans for maintenance that are already available.

EU8 countries are also experimenting with the use of formulae to determine the amount of public funding to be allocated to each higher education institution:

- In Slovenia, state funding of undergraduate studies in any institution has two elements: basic annual funds (a lump sum proportionate to the previous year's allocation, which in 2004 was 80 percent of the annual funds allocated in 2003); and standard annual funds which depend on the number of students and the number of graduates with differential weighting of subject areas. Public co-financing of postgraduate studies and funding of research are distributed by tender.
- In Slovakia, the allocation for wages and salaries is based on the number of students and the number of graduates (varying between fields in line with differences in student/teacher ratios and faculty 90 structure), and on the results of research. Allocations for research partly reflect an institution's success in obtaining research grants, and the success rate of doctoral students in qualifying examinations. State funding for goods and services, scholarships for graduate students, capital expen-

diture, student stipends, dining, lodging, sport, cultural and religious activities, and development and reform of higher education are allocated separately.

- The Czech Republic is planning to introduce a new funding mechanism, with a formula based at least partly on output rather than input indicators, supplemented by an agreement on the longer term plans of each institution. This is expected to lead to a division of labor between different types of higher education institutions/faculties, with some basing their study programs mainly on top-quality research, some combining such research with teaching, and others focusing primarily on teaching.
- In Hungary, the allocation to each higher education institution is based on the number of full-time equivalent students (and their fields of study), the number of lecturers/researchers, and of state financed PhD students (and their fields of study), the amount of research support in the previous year, and the number of non-teaching staff and maintenance norms for such staff and students. Efforts are being made to move towards a more results-based allocation mechanism, which would encourage institutions to use resources more efficiently.
- Latvia has had a formula funding system since 2002, with allocations based on the number of approved full-time places and the unit cost. The unit cost for each subject is calculated as a multiple of the “base cost” per student, which reflects wages, social insurance costs, costs of utilities, etc., and rose from 440 lats in 2002 to 696 lats in 2005. The indices used for each subject are being gradually adjusted to reflect differences in costs from year to year. Research is funded partly by tender and partly by grants to institutions: each institution receives an amount equivalent to at least 1 percent of the funds it is allocated for undergraduate and postgraduate studies, plus funds for research infrastructure based on the number of approved student places and faculty posts.
- In Lithuania, experimental “student’s basket” systems were introduced for colleges and universities in 2004, with allocations partly based on the number of students and type of program. This was a welcome step towards transparency, but the logic of the formulae was not allowed to prevail: rectors at risk of losing resources successfully lobbied parliament to change the results.
- Poland in 2004 switched back to using the funding algorithm that had been introduced in the early 1990s, designed to promote the expansion of enrollment and to encourage HEIs to employ greater numbers of professors with doctorates. The new version of the algorithm addresses issues of quality, and includes criteria that are based on the National Accreditation Commission evaluations. The formula takes into account variations in unit cost between programs, numbers of students (including PhD students), and numbers of faculty in both research and teaching with PhDs.

Governance

A modern system of tertiary education, comprising many autonomous institutions with differing but complementary missions and goals, requires flexible governance on a national level and an enhanced policy function of the Ministry of Education. Autonomous higher

education institutions should be set within a framework of accountability, openness and segregation of the regulatory and operational management functions.

Throughout the EU8 countries, changes in financing arrangements have, as expected, been accompanied by changes in the governance of higher education institutions. In most EU8 countries, the lower tier of tertiary institutions (ISCED 5) are subject to greater government control than universities, many of which match their counterparts in the EU15 in the extent of their autonomy (Table 8). The Czech Republic, Latvia and Poland appear to be the countries in which universities have the greatest freedom, in contrast to Lithuania and Slovenia in particular. The most widely available freedom is to employ and dismiss academic staff. Also, most universities can set their academic structure and course content, and spend their budgets to achieve set objectives. Less widely available is the authority to set salaries, decide on the size of student enrollment, own buildings and equipment, borrow funds, and decide the level of tuition fees (allowed in Hungary alone).

An important aspect of university governance is the arrangement for appointing leaders. In all the EU8 countries for which information is available, leaders of universities are still elected by bodies consisting of representatives of academic staff and, in some cases, students (Table 9). Only in Hungary and Latvia are such appointments subject to governmental approval, and in all cases, they are renewable for at least one more term. There is no mechanical connection between the method of selecting a university leader and the propensity to reform, but academics tend to elect rectors who will look after them rather than cause them trouble. The trend in the EU15 is clearly towards a redefinition of the functions and composition of university Boards or Councils, with a greater management role for a mix of academics and outside people. Such Boards then take over the function of appointing university leaders from shortlists that emerge from a wide-ranging search. A move in this direction would help EU8 universities to implement the financial reforms that will be needed in the challenging times ahead.

Table 8. Extent of Autonomy Enjoyed by Universities (selected EU15 and EU8 countries)

	Institutions Are Free to:							
	1	2	3	4	5	6	7	8
	Own their buildings & equipment	Borrow funds	Spend budgets to achieve objectives	Set academic structure/course content	Employ & dismiss academic staff ^a	Set salaries ^b	Decide size of student enrollment	Decide level of tuition fees
EU15								
Netherlands	●	●	●	○	●	●	●	○
Ireland	●	○	●	●	●	○	●	○
UK	●	○	●	●	●	●	○	○
Denmark	○	●	●	○	●	○	●	○
Sweden	○	○	●	●	●	●	○	
Finland	○		●	○	●	●	○	
Austria	○		●	●	●	●		
EU8								
Czech Rep	●	●	●	●	●	●	●	
Estonia								
Latvia	●	●	●	●	●	●	●	○
Lithuania	○	○	●	●	●	○	○	○
Hungary	○	○	●	●	●	●	○	●
Poland	●	●	●	●	●	○	●	○
Slovenia	○		○	●	●	○	○	○
Slovakia	●		●	○	●	●	●	

● Institutions have autonomy.

○ Institutions have some autonomy, but limited.

^a“Employ and dismiss academic staff” (column 5) and “Set salaries” (column 6) include cases where any legal requirements for minimum qualifications and minimum salaries have to be met.^b“Decide size of student enrolment” (column 7) includes cases where some departments or study fields have limits on the number of students able to enroll.^cPublic universities.

Source: Interviews for EU8; OECD (2003) for EU15.

Table 9. Appointment of Leaders of Universities (selected EU15 and EU8 countries)

	Process for election or appointment	Government has to approve?	Typically appointed for how many years?	Renewable position?
	<i>Countries where leaders are usually ELECTED by:</i>			
Lithuania	Senate (academic staff).	No.	4–5	Yes, for one more round.
Finland	Academic staff & heads of separate institutes.	No.	5	Yes.
France	Board or Council.	No.	5	No.
Czech Republic	Academic Senate (academic staff and students representatives).	No.	3	Yes, for two consecutive periods, with possibility of later reelection.
Hungary	Senate (academic staff and students).	Yes.	4	Yes, for one more round.
Latvia	Constitutional Meeting (academic staff 60%, other staff 20%, and students 20%).	Yes.	5	Yes, for one more round.
Poland	Academic Senate or Electoral College.	No.	3	Yes, for a maximum of two consecutive periods.
Slovakia	Academic Senate.	No.	4	Yes, for one more round.
Slovenia	All higher education faculty, faculty assistant, researchers employed by the university, and students 20% of all votes.	No.	4	Yes.

<i>Countries where leaders are usually APPOINTED by:</i>				
Ireland	Governing Body (approximately 50% external).	No.	10	No.
Netherlands	Supervisory Board: 5 external members appointed by Minister.	No.	4	Yes.
Sweden	Government, on recommendation of mainly external Governing Board, which first consults students & employers.	Yes.	6	Yes, for two periods of three years.
UK	Governing Body, of which majority are external members.	No.	7	Yes.
<i>Countries where reforms have been implemented in 2003:</i>				
Austria	Formerly elected by University Assembly (75% staff, 25% students).	No.	4	Yes.
	From 2003 appointed by University Council, made up of external members, from a shortlist of 3 candidates nominated by Senate.			
Denmark	Formerly elected by academic staff (50%), other staff (25%), and students (25%)	No.	4	Yes.
	From July 2003, appointed by Board with majority of external members.			

Source: for EU8, interviews/questionnaires; for EU15 countries, OECD (2003).

Directions for Further Reform

The need for further reforms in higher education finance in the EU8 countries arise from a combination of factors:

- the trend throughout Europe towards mass participation in education at this level, reflected in the enrollment rates in Table 1 above;
- the pressure for improving the quality and increasing the relevance of higher education in the EU8 countries, associated with membership of the EU and participation in the Bologna process and the European Credit Transfer System (Eurydice 2004), and with globalization, which probably implies a need to increase expenditure per student towards EU15 levels;
- the tight overall fiscal situation faced by EU governments trying to limit the size of their budget deficits;
- concerns about equity given that private rates of return on higher education are likely to be much greater than the social rate of return (Psacharopoulos and Patrinos 2002) and that higher education students are still disproportionately from privileged backgrounds.¹¹

As has already emerged from the discussion of the current situation, a useful starting point for programs of further reform of higher education finance in EU8 countries would be a

11. Work on promoting equitable access must, of course, start well before higher education, given the critical importance of early child development (Feinstein 2003).

thorough review of the extent and incidence of subsidies to higher education. Subsidies take several forms:

- tuition fees at less than full cost-recovery levels, or exemptions from tuition fees;
- stipends, scholarships or maintenance grants, and subsidized loans;
- subsidized food and lodging; and
- subsidized books and other learning materials.

As already emphasized, the imposition of fees is a recognition of the private benefit to recipients of higher education, but the level at which tuition fees are set is clearly a political as well as an economic issue. In some countries, to impose any tuition fees at all would require a constitutional change.¹² Generally, the flawed tradition in Europe of regarding higher education as entirely a public good is still strong, and there is a general refusal to acknowledge the limitations on public revenue caused by rising costs and enrollments. In many such countries in the EU15, controversy about the possibility of introducing fees still rages. In Ireland, an attempt to reintroduce tuition fees in 2003 was abandoned after public protests rendered it politically impossible. In 2004, the OECD noted the need for greater investment in tertiary education to improve Ireland's competitiveness, including some cost-sharing arrangement with users. In 2005, while the Minister of Education broadly accepted the OECD recommendations, undergraduate tuition fees are still not politically feasible in Ireland. The UK introduced tuition fees some years ago in conjunction with a student loan scheme and has recently increased their level. However, this process has been fraught with difficulty and is a perpetual subject of acrimonious debate in the media. In May 2005, the Slovak parliament refused to ratify a government proposal to introduce a new system of tuition fees (equivalent to between 5 and 30 percent of unit expenditure) at specific levels to be determined by the institutions.

In the EU8, however, the pressures outlined above make it almost inevitable that the average level of fees in tertiary institutions will be increased, to a level which covers a significant proportion of total costs. Should such fees be fixed and uniform, or variable (by institution and by specialization)? Barr (2004) argues strongly in favor of variable fees on various grounds: variable fees bring in more resources; they promote efficiency, for instance guiding students to choose cheaper ways of acquiring the skills they want, or to choose courses at a cheaper local college instead of a more expensive and more prestigious university—to the benefit of both student and taxpayer; they are an incentive for institutions to improve quality (and hence charge higher fees), and to increase efficiency (and maybe attract more students by charging lower fees); they give institutions control over their own income stream instead of being dependent on what the government is currently able to allocate; and they are more equitable (as part of a package), introducing higher charges for those who want to pay them, helping poor people to pay those charges through redistributive policies, and ensuring some correspondence between what individuals pay, and what they get (instead of, as Barr puts it, “taxing beer to subsidize champagne”).

An increase in average fee levels would allow the inequitable dual-track system to give way to a single-track system, under which all students pay tuition fees, and to a distribu-

12. The German constitutional court recently declared that tuition fees in higher education do not violate constitutional guarantees.

tion of the various subsidies that are based on need, rather than academic ability. Institutions could use their own resources to offer a few competitive scholarships to their best applicants, but state subsidies to students (most appropriately handled by social service ministries rather than educational institutions) would be based only on means-tests. This raises the question of the feasibility of means-testing in current EU8 country conditions. The technical pre-conditions for successful means-testing include “pervasive and generally workable income tax systems with high degrees of voluntary compliance that capture most sources of taxable income, and allow reasonably reliable calculation and monitoring of family means, or need” (Johnstone 2004). As part of the process of integration with the EU, the EU8 countries are moving towards such systems. For example, Slovakia was proposing to extend means-tested social stipends in scope and amount, to cover at least a third of full-time students. Progress will vary from country to country, but meanwhile, existing relatively informal systems to estimate means or need can be built on, “with the onus of demonstrating financial need placed upon the family that is claiming it, and with clear penalties for misrepresentation.”

Means-tested grants to higher education students are, at best, a blunt instrument and need to be backed up by other measures to promote equity in access. Barr (2004) suggests a means-tested stipend for children above the minimum school-leaving age to encourage them to complete school, and financial incentives to universities to widen participation (which could be embodied in the funding formula). He also calls for action to inform school children about the benefits of higher education and to raise their aspirations: “the saddest impediment to access is someone who has never even thought of going to university.”

While students from disadvantaged families could thus be subsidized, the extension of fees to all students and an increase in their average level would imply a need for a wide-ranging student loan system. This could take the form of a loan, either repayable in the conventional way or (as implemented by Sweden and the UK, among EU15 countries), on an income-contingent basis, or a graduate tax whereby a student incurs an obligation to pay a higher rate of income tax.¹³ Barr (2004) argues in favor of income-contingent loans charging “unsubsidized” interest rates (broadly in line with the government’s cost of borrowing). Income-contingent repayments are calculated as a given percentage of the borrower’s earnings until the borrower has repaid: low-income earners make low repayments and those with low lifetime earnings never fully repay. Those who take out loans effectively get their higher education free at the point of use, repaying only later if and when they can afford to do so. Thus, even the most riskaverse students (often assumed to come disproportionately from low-income backgrounds), may be willing to borrow in order to finance their studies. Interest rate subsidies add a lot to the costs of a loan scheme, divert funding from quality improvement to student support, and are deeply regressive (mainly benefiting successful professionals in mid-career whose loan repayments are switched off early because of the subsidy).

13. In a progressive tax system, higher education graduates who achieve higher incomes pay higher taxes. It is sometimes suggested that, in this way, they repay the cost of their higher education, so fees plus loans are not necessary. As Barr (2004) points out, this is to some extent a fallacy: two people with the same income, one with and one without higher education, pay the same amount of tax, but if part of the tax payment of the graduate is covering the cost of higher education, he/she is contributing less than his or her less educated counterpart to the school, healthcare systems, and other tax-funded services. Emigration of graduates is another concern.

Whatever the exact form of the loan system, Johnstone (2004) suggests several technical preconditions for success:

- ways to keep track of people's movements, including a wide-ranging postal system with "skip-tracing" capabilities, and official and enforced employee identification;
- systems of withholding at the point of wage and salary payment that can facilitate student loan repayments; and
- effective systems of government guarantees, and primary and secondary private capital markets, that together allow private savings to supplement public revenue (thus providing a real alternative to dependence on tax revenue).

The first two pre-conditions pose fewer problems for EU8 countries than the third: very few countries (apart from the USA) have private capital markets for student loan notes. However, the absence of appropriate capital markets is not an insurmountable obstacle to the creation of successful loan schemes. It is possible to attract private resources to such schemes from multinational banks. It is useful, also, to distinguish between the fiscal costs of a loan scheme (money that is lent out but never repaid), and its cash flow costs (money which is lent out and subsequently repaid). Cash flow costs matter for the EU Stability and Growth Pact (and this is why it is important to bring in private resources, if possible), but the fiscal costs of a loan scheme matter much more. The lower the fiscal costs of a loan scheme, the less critical is private finance.

Only four EU8 countries allow a significant role for private tertiary institutions. Their role is likely to increase, particularly if admission to public universities and colleges is held back by fiscal constraints. The ownership of higher education institutions should not be an important issue; they can be public, private or mixed, as long as there is a funding and regulatory framework which operates smoothly across the entire sector. Students should be eligible for government subsidies whether they are attending a public or a private institution. At the same time, it is the role of the government to set and monitor quality standards for all tertiary institutions, regardless of ownership.

A potentially important source of extra-budgetary resources for tertiary institutions is paid teaching, research, and consultancy. Arrangements have to be set up for channeling the income from such activities to the institutions, rather than merely to individual faculty members. The danger of increasing interdepartmental disparities in resources available also has to be recognized. Departments of economics, business studies, foreign languages, and information technology are likely to be the main beneficiaries; other arts and science departments may not be able to attract as many resources in this way. In Latvia, the proportion of expenditure on higher education financed from sources other than the state budget and tuition fees (from scientific contracts, international agreements and commercial services), rose from 1.9 percent in 1995 to 11.5 percent in 2003.

The criteria for determining the amount of public money to be allocated to each institution are also in need of further reform. In general, as already described above, the desire to get away from politicized and opaque negotiation between the government and each institution is inspiring a move towards formula funding, whereby the amount allocated is determined by a transparent formula. The simplest formula for funding, adopted in several countries, is to base it on the number of students enrolled—"money follows the student." This can lead to distortions, such as expanding enrollment beyond the optimum level,

delays in student completion, and a bias towards programs that are popular and/or low-cost. There is growing interest, accordingly, in more complex, performance budgeting or results-based funding.

Results-based funding has to strike a balance between manageability and comprehensiveness. Indicators used have to be easy to calculate, difficult to manipulate, reliable as a guide to an institution's value added, and not subject to statistical "noise" (Thorn, Holm-Nielsen, and Jeppesen 2004). Several EU15 countries have experimented with systems of this kind. In the UK, allocations are based on two separate sets of indicators: a teaching grant, based on number of students, length of the courses, size of the institution, location, level of specialization, number of disadvantaged students, etc.; and a research grant, based on the number of qualified researchers, published research documents, the number of research students, the quality of research assessed by peers, external research income etc. The Danish "taximeter" model bases the amount institutions receive for their teaching activities on the number of students who pass their examinations. The tariff per passed examination varies according to the field of study, with three components: costs of education and equipment; joint costs (for example, administration, buildings); and expenses for experimental sciences and practical training (for example, in medicine and physics). In the Netherlands, a macro-budget for the university sector is fixed and then allocated to each institution on the basis of the number of students who completed their program multiplied by the normal study duration (4½ years) plus the number of students who dropped out multiplied by a notional study duration (of only 1.35 years). This number is calculated for each field of study and then multiplied by a fixed amount per student (for example, €4,477 for engineering and €3,461 for other programs in 2001). All such systems have the advantage of transparency in funding criteria, but run the risk of unintended consequences, for instance: overemphasis on publication in the case of the UK, artificial boosting of pass rates in Denmark, and the premature dismissal of struggling students in the Netherlands. None of them as yet has found a way of rewarding quality of teaching.

In general, further experimentation with more sophisticated, results-based formulae can be expected in the EU8 countries over the next few years, to the benefit of transparency of funding and efficiency in higher education. Experience worldwide has shown that a certain variety in public funding mechanisms is desirable in higher education for several reasons (World Bank, 2005a). First, such variety provides the government with multiple ways to support investment in evolving public priorities. For example, financial awards can be modified to encourage institutions to invest in important public goods or to support public objectives such as the survival of areas of study which might not have immediate benefits to the labor market in the short term, but are vital for long-term development of a country. Second, variety in funding mechanisms provides the government with multiple processes that can stimulate favorable organizational behaviors at both the central and institutional levels (e.g. collaboration, transparency, accountability, stakeholder inclusion, etc.). Third, certain funding mechanisms can be used by governments to reward institutions for quality outputs, or to signal to stakeholders the quality of an institution's outputs. Fourth, variety in funding mechanisms prevents budget instability at the institutional level which can occur when governments tie too large a proportion of institutional budgets to only one sort of resource-distribution procedure.

It is in the government's interest to develop stable, more sustainable public institutions, infusing public higher education with a variety of effective and efficient funding

mechanisms is one way to support that objective. There is no ideal mix, and each country must determine on its own which financing mechanisms and what combination of mechanisms work best in the given context. Innovations should be prudently and gradually introduced to a higher education system to provide opportunities to assess the impact of the new mechanism, to learn lessons from the initial implementation, and—based on such lessons—to make adjustments to the operational aspects of implementation before scaling up. Ultimately, however, oversight will have to be exercised by the ministry of education or some other central body to ensure that programs and mechanisms do not conflict or generate perverse incentives.

Finally, further governance reforms would also help to increase efficiency. Part of the motive for delegation of authority to autonomous institutions is to allow them to manage their use of resources. Accordingly, budgets for public universities in European countries are increasingly lump-sum: it is then up to management to decide on the allocation of the funds between line items, mid-year interchange between line items and, if necessary, carrying forward of expenditures from one year to another. There are dangers in this system, particularly if university leaders are elected by faculty members rather than appointed by a Board or Council with significant representation from the outside world. Links between the university and the private sector are desirable, not only to encourage labor market relevance but also to attract private funds through endowments and other mechanisms. Thus, it is likely to be efficient to increase the financial autonomy of higher education institutions, but only if institutional management systems are reformed to make them more sensitive to the public interest, rather than to that of the faculty and other politically powerful constituencies.

Conclusions

The EU8 countries have enthusiastically embraced mass higher education, and are rapidly closing the gap between themselves and the EU15 in enrollment rates and the incidence of higher education in the population of working age. This expansion is helping these countries to insert themselves into the global knowledge economy, as a high proportion of their graduates get jobs in the knowledge-intensive services sector. The earnings premium for higher education tends to be higher in the EU8 than in the EU15, and the private rate of return to higher education still looks to be high.

Expansion brings problems, however. Essentially, there is a conflict between the need for highquality mass education and fiscal constraints. Most EU8 countries have managed to protect the percentage of GDP that is spent on higher education, and on average they spend a much larger proportion of GDP per head on each student in public tertiary institutions than do EU15 countries. However, the number of Euros spent per student, adjusted for differences in purchasing power, is much lower than in the EU15 group. The tradeoff between accessibility and quality of higher education, from the student's point of view, is becoming increasingly obvious.

The EU8 countries have a similar approach to funding higher education in public institutions to that of most of the EU15—they spend public money on financial aid to students, and try to avoid charging them tuition fees. However, many countries have instituted a back-door dual-track system, maintaining fee-free higher education for regularly admitted state-supported students, while adding a special fee-paying track for those who fail to gain such admission. This tends to penalize students from disadvantaged families, who are less successful in entrance examinations, and cannot afford the alternative fee-paying track (or the private institutions that are growing in importance).

This combination of trajectories is clearly untenable. The trend towards “massification” of higher education cannot be combined with the improvement in quality that is needed in order to be competitive within the EU and to increase participation in the global knowledge economy, unless the amount of money available to institutions increases. At the same time, government budgets are severely constrained, and it is difficult to justify an increase in public allocations to higher education which yields high private rates of return to people who are disproportionately from privileged backgrounds.

An increase in the average level of fees in EU8 public tertiary institutions, to a level which covers a significant proportion of total costs, thus looks inevitable. There is a strong case, on the grounds of revenue maximization, efficiency, autonomy, and equity, for making such fees variable, rather than fixed and uniform. This would allow the inequitable dual-track system to give way to a single-track system, under which all students pay tuition fees, and to a distribution of state subsidies based primarily on need, rather than on academic ability.

It would also imply the need for a wide-ranging student loan system, preferably extending income-contingent loans and charging unsubsidized interest rates, and other measures to promote equity in access at all levels of education. The combination of variable fees, needs-based grants, and loans would also help to increase the relevance of the specializations chosen by students to the labor market reality.

Governments should not pay too much attention to the public/private distinction. They should rather focus on the quality and relevance of the graduates of tertiary education institutions, regardless of the sources of funding, and put in place a quality assurance system to monitor and enhance the performance of tertiary education institutions of all kinds. Loans and government subsidies could then also be available to students in private universities which meet national eligibility criteria for access to additional public funding by participating in evaluation/accreditation exercises.

Further reforms in the criteria for determining the amount of public money to be allocated to each tertiary institution would also help to increase transparency of funding and efficiency. Having started with fairly simple “money-follows-the-student” formulae, experimentation with more sophisticated results-based formulae would be useful in meeting the required policy goals. Rather than immediate implementation of a single mechanism, experience suggests that variety in funding mechanisms is desirable, on grounds of flexibility, multiplicity of objectives, quality and stability. Further governance reforms, particularly in institutional management and procedures for appointing leaders of autonomous tertiary institutions, are likely to be needed to ensure that lump sums allocated through such mechanisms are used in a way that is sensitive to the public interest.

Decreased reliance on government funding and increased reliance on price incentives would not mean the elimination of a role for governments in relation to higher education. They would still be an important source of funds, organize and oversee student loan schemes, and be responsible for the promotion of equitable access. They would also have to ensure that quality assurance systems are in place, and would be able to design and use formula-funding schemes to achieve national objectives that go beyond those of the immediate market (for example, by channeling additional resources to music, drama, engineering, and so forth) and to modify excessive competition between institutions. What is needed, rather than detailed interference in academic processes, is a combination of standard-setting and financing systems designed to ensure high-quality outcomes. The rest could be left to higher education institutions, autonomous but accountable in their governance arrangements.

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