getting european universities into shape

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doi:10.1057/palgrave.eps.2210082

Abstract

Most European universities lag behind the best universities in the Anglo-Saxon world. A key challenge is to raise resources per student in Europe to US levels. The Lisbon agenda demands fundamental reform of the European university system in order to enhance efficiency, yet avoid grade inflation, to foster more competition, to allow for much larger private contributions accompanied by income-contingent student loans, and to attract larger numbers of foreign students. European universities will be pushed to compete with each other, to offer better incentives and to generate substantially more income. Universities will be stimulated to provide sufficient diversity and quality to meet the demands of a growing and diverse student body. Their ambition should be to educate the best minds in society irrespective of whether their parents are rich or poor, academically inclined or uneducated. A shift from grants to loans and an increase in tuition fees are justified by high returns. Reform should lead to a better and more equitable system of European universities.

Keywords universities; policy reform; central planning; income-contingent student loans; tuition fees; subsidies; vouchers; variety; selection; peer review; grade inflation; input funding; output funding; equity; monopoly; transparency

Knowledge and creativity, not land, mineral resources or physical capital, are nowadays the engines of economic growth. A golden age for universities has arrived. Still, as the Economist (2005) points out, academia in Europe is not ready for the challenges ahead. Realising mass access without sacrificing excellence demands a dynamic and competitive university system. The European challenge is to get the diversity and quality of the US without hurting

accessibility. A key problem is that central planning and steering bring a generic lack of variety, monopolistic behaviour, scale increases and grade inflation. The explosive growth in enrolment has led to an erosion of academic standards. Reform of the European university system should tackle these issues. European universities also have much fewer resources per student than their US counterparts, so it is crucial to raise tuition fees without harming access.

HIGHER EDUCATION IN EUROPE

In virtually every country, enrolment rates have more than doubled over the last thirty years. Although real expenditure and government contributions per student have declined in Australia, New Zealand and the UK, they have remained constant in most countries. From a lifetime perspective graduates will not be poor and can borrow more than their non-graduate counterparts. Lifetime earnings in, for example, the Netherlands vary from €1.2 million for male economics, medical, agriculture and technical university graduates, to €0.9 million for behavioural and social science graduates and €0.8 million for male arts graduates (Jacobs, 2002). The costs of higher education (€45,000) are much less than lifetime earnings; hence, higher education is an excellent investment. Also, while the earnings arising from different courses of study are different, tuition fees are often the same.

No tuition fees exist in Denmark, Germany or Sweden. Other countries (e.g., Australia, France, the Netherlands and the UK) have fixed but positive tuition fees that may differ between fields of study. Typically, prices charged to students do not depend on costs. In recent years, some governments (Australia, Belgium, France, the Netherlands and the UK) have increased tuition fees to maintain resources per student in the face of increasing enrolment. This has also happened in the US and New Zealand where institutions' powers to vary fee levels are unlimited. Some countries (Belgium, the Netherlands, the UK) have reduced student grants and expanded loan facilities. In contrast, Germany, Sweden and Denmark have increased grants and expanded loan facilities. France has only increased grants. New Zealand and Australia have both substantially expanded loan facilities. In Australia, this has been organised through the so-called Higher Education Contribution Scheme. Conditions governing student grants have become tighter in some countries (Denmark, Germany, the Netherlands and Sweden) as a result of policies linking grants and loans to academic progress.

'Realising mass access without sacrificing excellence demands a dynamic and competitive university system.'

European universities suffer from bureaucracy and a lack of autonomy. Almost all parameters are fixed: subsidies per student are fixed, tuition fees cannot be varied, the number of places available on courses is often fixed by ministries of education and applicants cannot be refused once they have passed their national exams. Universities thus find it tough to respond to changes in demand and engage in competition. More time and energy goes into securing government subsidies for education and research than into academic entrepreneurship.

Governments rely more and more on (lump-sum) 'block grants' with both output and input criteria. Most countries fund on the basis of inputs such as the number

of enrolled students. Funding in Denmark stresses output, since universities receive funding on the basis of the number of grade points that students receive (the 'taxi-meter model'). The Netherlands and Sweden take intermediate positions. About half of funding in the Netherlands depends on the number of diplomas. A similar share of resources in Sweden depends on the number of grade points. Germany and the UK differ as funds are allocated on historic-cost grounds independently of the number of students or output criteria, but funding is based on negotiations and enrolment forecasts. However, the UK government is placing increasing emphasis on output and performance in teaching and research. More details on European higher education can be found in Eurydice (2000, 2001).

Partial correlations suggest that incentives matter for performance (Jacobs and van der Ploeg, 2006):

- Higher Programme for International Student Assessment (PISA) scores suggest higher educational attainment, lower dropout rates, shorter periods of enrolment for those who actually graduate and higher wage returns.
- Lower student/staff ratios are associated with higher educational attainment, lower dropout rates, shorter enrolment periods for graduates and higher wage returns.
- Targeting government funding on students rather than universities suggests higher attainment, higher dropout rates, slightly shorter enrolment periods for those who graduate and lower wage returns.
- If students borrow more and get lower grants, or if the share of private expenditures increases in general, this may be associated with higher attainment, shorter enrolment periods for those who graduate, lower dropout rates and larger wage returns.

'In the US, the top ranked universities are generally beyond the reach of the poor unless they receive assistance.'

STRATIFICATION, VARIETY AND QUALITY

The nature of universities

Students, governments and sponsors lack the information necessary to judge the quality of higher education. Higher education is a one-off purchase and often it is the parents who do it on behalf of their children. Still, the nature of academic interchange changes if a price is attached to it. Intrinsic motivation on the part of students and staff, and trust, are vital and diminish if too many monetary incentives are introduced. This is why higher education institutions are probably best operated as non-profit enterprises. Measures of success are typically not profits, but how well institutions do compared to others. Rankings and peer reviews, and the competition that results from them, are thus what drive universities. Peer effects are also crucial for students as they form values, academic interests and aspirations in interaction with other students. Universities also need funding from students, alumni, estates and sponsors. However, non-profit enterprises also have a tendency towards 'bureaucratic slack', as revealed by large offices for central administrative staff, 'prestige projects' and so forth. They also tend to under-estimate the costs of their capital services such as buildings and campuses.

How to avoid stratification?

Most US and UK universities create a niche in the hierarchy of universities and

compete with their peers. In Europe, the differences in ability to tap money are much less marked than in the US. The European market for higher education therefore has many fewer niches. In the US, the top-ranked universities are generally beyond the reach of the poor unless they receive assistance. Many students with below-average levels of academic ability but from well-off backgrounds can also be found at the best universities.

Universities are 'communities', where individuals invest in their human capital. It is the gathering of the best students, professors and researchers in one location that determines the attractiveness of a university. In higher education, stratification and hierarchy according to incomes emerge if students cannot borrow to finance their studies. Conditional upon academic ability, the wealthiest individuals go to the best universities. Without capital market imperfections, the most able students have the highest willingness to pay and therefore go to the best universities (Fernàndez, 1998). In that case, the hierarchy of universities is determined by differences in academic capacities only, not incomes, and local externalities and peer effects will make the stratification in terms of academic abilities more pronounced. With credit market imperfections preventing poor but able students from enrolling in the best universities, these externalities reinforce the adverse effects of capital market imperfections and strengthen stratification in terms of income. This is not efficient; it is not a just outcome, and it is certainly not one driving our pleas for a move towards larger private contributions in Europe. Therefore, the poor must have access to sufficient funds to finance their study through the provision of income-contingent loans (ICLs). We want to encourage elitism in a purely academic sense.

Potential merits of the Bologna reforms

The Bologna reforms introducing a system of bachelors and masters degrees in Europe have the following potential merits:

- *A reduction in the risks of choosing the wrong courses of study, and incentives to students to take more demanding courses of study*. A first degree in mathematics or science that lasts three years is a less daunting prospect than one that lasts five or six years. Those who like mathematics and science can go on afterwards to a specialised degree. By the same token, the Bologna reforms allow students who are uncertain about their capacities, interests and labour-market situation to delay decisions committing them to given courses of study.
- *Incentives to students to combine different courses of study*. Much technological and economic progress in contemporary society occurs in the twilight zone between different disciplines. Moreover, university students who discover that their interests are more vocational than academic can switch to professional masters courses at colleges of professional higher education, while the more academically minded vocational bachelors can switch to university.
- *Stimulation of variety*. Many European institutions are of higher average quality than institutions in the US, but European countries have fewer centres of excellence, less diversity and less flexibility, and less choice between intensive and extensive forms of education.
- *Incentives to students to finish their studies more quickly than in the past*. Students will be better matched with universities because the risks of taking the wrong courses are reduced, there is a greater variety of courses available and students have the option of

interrupting their studies to return later. The Anglo-Saxon system of higher education is characterised by very high retention rates because students know exactly when to study and when they can work or have fun.

- *The engendering of competition between a larger number of shorter degree programmes*. Currently, many universities in Europe are stifling competition – as is suggested by the many mergers and the standardisation of many degrees. If students are unhappy with a particular degree programme, they should vote with their feet and enrol on other programmes.
- *Compatibility of the European system with systems of higher education found in the UK, the US, Canada, Australia, New Zealand, India, Pakistan and much of Asia and Latin America*. This enhanced transparency encourages European universities to compete on a global scale.

The quest for quality

The Times Higher Education ranking of the world's top 200 universities is based on peer review, numbers of international faculty, numbers of international students, staff/student ratios and faculty citations scores. It is interesting that 41 of the top 50 universities are from countries with an Anglo-Saxon system of education. Continental Europe (excluding Switzerland) has only three universities in the top 50. Despite ferocious competition among students, Japan has only two top universities. China and India will deliver more top universities in the future.

European universities provide a decent education for all but without much variety in the fare offered. Apart from some conservatoires, theatre schools and advanced catering colleges, most institutions of higher education are reluctant to select. The US has considerable experience in aptitude (as opposed to ability) tests. Ability or knowledge tests should not be used for selection because, through additional training, wealthier applicants can cram for them. Unfortunately, there are signs that during the last few years aptitude tests have become more like ability tests. This threatens to undermine the meritocratic features of the US system and to enhance the significance of family ties and background. Europe would benefit from systems of more selective entry. The majority of universities in continental Europe accept students on the basis of a high school diploma only. Hence, many first-year students fail and real selection takes place after one year and sometimes even later. This leads to a huge waste of resources.

In much of Europe, the market for lecturers and professors is closed to outsiders. Many scholars with excellent publication records are defeated by local heroes with the right connections. In France, Italy and Germany outsiders and foreigners find it difficult to get chairs, and are otherwise frightened off by stifling bureaucracies. The UK, Scandinavia and the Netherlands have more open systems of recruitment and so benefit from a more competitive environment. Many European universities cannot reward and attract young talent, while older academics stay on even if their productivity has declined substantially. The severe tenure hurdles and the competitive publication race one sees in the US is less pronounced in Europe.

Peer review encourages high-quality research, but it is weak in Europe. Where peer review of research has taken off, it tends to overshoot at the expense of educational quality, especially if professors mark their own exams. Apart from the UK and perhaps Denmark, external examiners are not used to audit contents or grades. But then there is a danger of grade inflation, especially if funding depends on the number of degrees awarded.

HOW TO SET SUBSIDIES AND TUITION FEES?

Individuals invest more in a particular course of study if interest rates are low, they are not credit constrained, subsidies are high, tuition fees are low, expected graduate wages are high and their ability/aptitude for the course in question is great. High tax rates depress after-tax graduate income and thus discourage investment in higher education. The higher that tax rates are, the more students will invest in courses of study offering high non-material rewards, since the latter escape income tax. Alternatively, they will choose such courses even if expected wages are relatively low. Conversely, students are discouraged from taking courses that offer little prestige but require much effort. It makes sense for governments to make it possible for students to borrow funds that are sufficient to ensure that they are not credit constrained in financing their education or in meeting their living costs.

Education is a 'customer-input technology', where students are both consumers and co-producers of education (Rothschild and White, 1995). The cost function of a degree programme increases with total student demand, but decreases with the total human capital produced by the programme. If students are more able, more human capital is produced. Positive peer group and reputation effects then occur; the quality of education improves, and consequently courses are easier and cheaper to teach (Winston, 1999). Institutions generate excess demand for their services by selling below cost in order to control who they sell to. Selecting and attracting the most able students generates a positive feedback loop as it raises the quality and reputation of the institution and thus further increases demand from able students. Having high-quality students improves academic excellence and makes it possible to attract better professors and higher levels of funding from sponsors and the state.

'Governments may want to reduce the popularity of courses of study that lead to excessive status or rent seeking and signalling.'

Without peer group or reputation effects, profit maximizing universities set prices to a mark-up on marginal cost. The mark-up is particularly high for courses with low price elasticity of demand such as pure mathematics or anthropology. These courses may have high marginal costs anyway, so they are highly likely to be expensive in the absence of cross-subsidisation or special government support. If peer group and reputation effects matter, tuition fees are higher for the less able or less motivated students and lower for the more able students (cf., Rothschild and White, 1995). That is, universities award scholarships or give discounts to bright students. If universities operate under perfect competition, the optimal tuition fees are those that correctly internalise all peer group and reputation effects.

A government that maximises utilitarian social welfare (graduate utility minus tuition subsidies), and does not have any merit motives for intervening in higher education, sets optimal subsidies to zero if it can use non-distortionary taxes. The market outcome is thus efficient. However, governments may support merit studies that are of interest to society as a whole, that will not be provided by the market and that will generate public benefits ('educational welfare'). One could think of, say, anthropology, Sanskrit or pure mathematics. Governments may also support studies that contribute to citizenship, democratic participation

and the transmission of (cultural) knowledge and values, or that induce positive R&D externalities and growth. Governments may want to reduce the popularity of courses of study that lead to excessive status or rent seeking and signalling.

Educational welfare is a weighted sum of the educational investments by students in (de-)merit courses of study. Governments may give a larger weight to individuals from disadvantaged backgrounds. The optimal education subsidies are those that internalise the merit study externalities of education on total (i.e. private and public) welfare.

Optimal subsidies to higher education depend on four factors:

- The size of the externality, which provides a measure of the merit good benefits. The more society values a particular discipline, the higher should be the education subsidies to it. Education subsidies (as a percentage of the costs) decrease with the ability/aptitude of the student. The percentage shortfall in the private return from the social return to education is lower for high-ability than for low-ability students. Nevertheless, the total value of the education subsidy is larger for high-ability than for low-ability individuals, because high-ability individuals learn more and invest in more expensive education. Clearly, it is desirable to make education subsidies conditional upon students' characteristics, and selection is therefore desirable. If education causes social damage (rent seeking, signalling), education should optimally be taxed to correct for excessive investments in disciplines that are socially undesirable.
- A peer or reputation effect lowers optimal subsidies if the elasticity of prices with respect to peer and reputation effects is small and public funds are relatively scarce. Subsidies are lowered for bright students especially when universities find it profitable to offer scholarships or discounts to these brighter students.
- *The costs of public funds*. Subsidies to higher education should be the lower the more costly it is to raise tax revenues.
- *The price responsiveness of human capital investment*. If the elasticity of educational effort with respect to the relevant subsidy is low, much tax revenue is needed to induce individuals to invest more in their studies. Hence, more subsidies will be wasted on those who study anyhow.

Uniform tuition fees are thus *never* optimal if social returns differ between disciplines and students. Subsidies should therefore be optimally targeted to fields of study that have the largest social returns. Furthermore, subsidies should be targeted to the students that appear to generate most social value. Also, subsidies of courses of study with a relatively large private return compared to the social return violate optimal rules for education subsidies. Subsidies should be directed towards courses of study with a large social value, not a large private value. The mere fact that for some disciplines the marginal benefits are mainly non-monetary is not a reason for government subsidies. That will lead to over-investment in those disciplines. Students will take account of non-material benefits themselves.

Three final remarks are necessary. First, most students go to their local university, perhaps because they prefer familiar surroundings. The optimal tuition fees are higher for such students, because their price elasticity of demand is lower. Second, governments have insufficient information about the preferences of individual students and the supply of courses and may wish to use vouchers rather than subsidies to universities. By

giving students personal vouchers, which they can use to pay for their courses, governments encourage students to 'vote with their feet'. This fosters competition between universities. Third, our framework abstracts from problems of adverse selection (e.g., think of the opportunities for access available to students from less privileged backgrounds) and moral hazard (e.g., the problem of grade inflation).

'A level playing field can open national markets to the international environment, especially if students can get loans for periods of study abroad and can spend their vouchers abroad.'

CURBING MONOPOLISTIC PRACTICES

In response to smaller public budgets, the size of universities has increased at the cost of creating public monopolies. In the Netherlands, the enormous increases in scale and monopolistic practices have gone hand in hand with huge increases in overhead and capital expenditures leading to substantial falls in resources for teaching. Such monopolies reduce quality ('grade inflation'), ignore student and employer demand and increase overhead costs. Universities engage in a race to attract students and thus more state funds, sometimes fuelled by funding based on student numbers, even when this induces grade inflation. Monopolistic price setting drives up tuition fees and lowers quantity and quality in the supply of education, especially if the price elasticity of demand is low. Subsidies for a course have to be large if the price elasticity of demand for it is low. Since the price elasticity of demand differs between disciplines, subsidies should be differentiated accordingly.

Both output and input funding have unintended side effects. Output funding to curb monopolistic practices has the unintended disadvantage that it induces grade inflation and reduces incentives to cut costs. Input funding does not induce grade inflation, but leaves monopolistic practices intact and stimulates efficiency. One thus has to strike a balance between, on the one hand, avoiding grade inflation and inefficiently run universities, and, on the other hand, curbing monopolistic practices. Countries that rely on substantial output funding therefore often have committees to safeguard quality. If there is a lot of uncertainty and the efforts of managers correlate weakly with cost reduction, high-powered incentives become less attractive.

Most funding schemes suffer from 'ratchet effects' arising from budgeting and accounting procedures. Managers do not pursue cost-effective policies because the government creams off or even penalises cost savings. Universities are not very aware of how much their programmes cost. They do not use rational cost-based criteria that allow for various cross-subsidies. Little work has been done on estimating the technical and allocative efficiency of universities, except perhaps in the UK (Glass *et al*, 1995). And a high overall score on relative efficiency may imply that all universities are managed equally badly. It is also difficult to correct for the quality of both inputs and outputs. An increase in the staff–student ratio may appear as an improvement in technical efficiency, but may imply lower educational quality.

Both private and public universities are better able to compete if subsidies are allocated directly to students through vouchers/grants. Students can spend

the vouchers on the institutions and courses of their preference. Barriers to entry in the market for higher education should be lowered by abolishing historic-cost funding and barring cross-subsidies that hinder fair competition. It helps if an independent authority publishes yearly performance criteria of universities. These criteria should cover retention rates, enrolment duration averages, average exam marks, student evaluations, quality of scientific publications, evaluations of independent scientific committees and so forth. A level playing field can open national markets to the international environment, especially if students can get loans for periods of study abroad and can spend their vouchers abroad. In some countries, internal checks and balances have been destroyed by abolishing university democracy. Supervisory boards lack sufficient information from the 'shop floor' to be able to act as effective countervailing powers. In fact, neither governments, nor students, nor stakeholders, nor potential entrants seem able to discipline administrators in Europe.

UNIVERSITIES SHOULD RELY MORE ON PRIVATE FUNDING

The gap between social and private returns is small and declining

Each additional year of education, typically, raises wage incomes by 5–10 per cent (see, e.g., Harmon *et al*, 2003). These returns are generally larger for higher education. If social returns exceed private returns, education has positive external effects on society and the government should support education. Estimation of macro-economic production functions where total output is explained by human as well as physical capital, gives macro returns to education of about 5–6 per cent for each year of education. This is at the lower end of the estimated micro returns (see, e.g., De la Fuente and Doménech, 2006). Despite the widespread belief that there are large externalities associated with education, the social returns seem slightly lower than the private returns. Signalling seems to be of minor importance, since macro estimates suggest that education is productive.

Empirical findings suggest that private returns to higher education are substantial. Still, in popular debates there is much confusion on the returns to education. A popular argument is that the government should expand investment in education rather than reduce the public debt, because the *private* returns from study are higher than the safe real return on government bonds. But the government should intervene in higher education because the social exceeds the private return to education, not because private returns are large. The returns to education are higher than on government bonds because human capital is illiquid and more risky. This, in turn, is due to the fact that labour incomes are subject to business cycles, sectoral shifts, technological developments, international trade, etc. (Palacios-Huerta, 2004). Also, the direct costs of higher education and finite time-horizons drive up the required returns. No wonder private (and social) returns are high.

Rising private returns warrant higher fees

If skilled graduates earn higher incomes than workers with fewer skills, it is profitable to invest in higher education. The US and the UK especially have experienced dramatic increases in the skill-premium. Similar but less dramatic stories can be told for many European countries. The main explanation is skill-biased technological change, which boosts relative demand for skilled workers and thus the

skills premium, especially after the ICT revolution (see Katz and Autor, 1999). Stimulating skill formation also increases the relative demand for skilled workers in R&D sectors. If this effect is strong enough, the skills premium may even rise in the long run (Acemoglu, 2002).

Another explanation for the rise in the relative demand for skilled workers is that countries with an abundance of skilled workers specialise in skill-intensive production and low-wage countries specialise in labour-intensive production. Relative wages then depend on the relative global supply of and demand for skilled workers. This explanation is disputed because the volume of international trade is too limited. Supply side factors play a role as well. For example, the relative supply of skilled workers may have decreased in the US due to population aging, lower fertility and an inflow of unskilled migrants. Lower minimum wages and an erosion of union power have increased wage inequality in the US. In Europe, increases in demand for more skilled labour seem to result in higher unemployment rates among the unskilled, especially if their incomes are protected by minimum wages and strong unions (Katz and Autor, 1999).

The US skill-premium will continue to grow at about three per cent per year if the relative supply of skilled workers remains fixed. In Sweden, the premium will grow at one per cent (Edin and Holmlund, 1995) and in the Netherlands roughly two per cent per year (Jacobs, 2004). As growth in the relative supply of skilled workers in Europe levels off, so returns to education will grow substantially.

Baumol's cost disease also suggests more private funding

Higher education is intrinsically labour intensive and has little scope for technological progress. Teaching and research need to be done by highly qualified people who cannot be replaced by technology. Productivity growth in universities inevitably lags behind, so the cost and price of university education rise over time (Baumol, 1967). This does not warrant growing subsidies, since increases in productivity elsewhere boost purchasing power. Skill-biased technical change boosts the returns to study. Also, if higher education is a luxury good, it flourishes as technical progress makes people wealthier. Graduates can thus rationally use the higher returns to pay for the higher cost. Provided the opportunity costs of study do not increase as much as tuition fees, Baumol's cost disease expands the university sector. Hence, despite rising relative prices, the budget share of higher education rises over time.

Challenges: individualisation and scarce public funds

Individualisation and increased heterogeneity imply that the demand for higher education is becoming more diverse. An educational system, which is a straitjacket to individuals increases the welfare costs of uniform prices as is the case under the current system. Hence, governments should allow more flexibility in the setting of tuition fees rather than raise subsidies. Governments experience that public funds are increasingly scarce – this due to population aging and a growing fragility of tax bases. The willingness to pay taxes for university funding diminishes as a consequence.

To conclude, the crisis of European universities is not due to lack of *public* funds. There is no evidence that the social return to study exceeds the private return sufficiently to warrant larger state subsidies. If anything, private returns to higher education seem to be rising, as may be seen from the growing skills premium that graduates command in the market. However, higher education in

many parts of Europe is starved of funds. The problem of lack of funds will worsen due to the relentless operation of Baumol's cost disease. Much more can be asked of students provided they can make use of ICLs. Even though student poverty is a real issue, graduates are relatively well off.

MISGUIDED EQUITY MOTIVES IN HIGHER EDUCATION

Empirical research suggests that student ability and long-run background factors ('culture', 'family', 'environment') are the most important determinants of enrolment in higher education (Cunha *et al*, 2005). Increasing enrolment in higher education on the part of children from lower socio-economic backgrounds therefore requires intervention in basic and secondary education and not generic subsidies for higher education. It is doubtful that there are strong equity grounds for large-scale subsidies to universities. The vast majority of students in higher education belong to the richest half of the population. Moreover, the average taxpayer has less lifetime income than the average graduate. Many politicians raise equity issues for the wrong reasons.

Some argue that university education is a 'basic right' and should be free of charge. Universities should be accessible to all with sufficient academic capabilities. But this does not imply that higher education should be free of charge, neither does it imply that all should pay the same price, or should have education of the same quality. Another misguided argument is that subsidies are desirable as graduates pay more taxes. But the extra tax revenues do not recoup subsidies as most governments over-subsidise education (De La Fuente and Jimeno, 2005). Also, high-income earners who do not study do not receive subsidies, but still pay higher net taxes compared to those who do study. The poor may benefit from regressive higher education subsidies as they allow the government to use the progressive income tax at lower efficiency costs. Education subsidies reduce the tax distortions on human capital investments. The costs of study should therefore be tax deductible, but not the interest as this induces over-investment and distorts saving.

'Imperfect capital and insurance markets induce underinvestment in higher education and hurt especially more loan-averse students from poorer backgrounds.'

Some politicians reject 'elitist' universities where the brightest students receive the best and most expensive education. This boils down to a plea for high taxes on investments in higher education and thus obstructs profitable investments in human capital. The best students migrate abroad. And individuals with the lowest incomes are worse off than with direct redistribution. Both efficiency and equity are harmed by holding back talented students. Low tuition fees should not be used for equity reasons either, since it is inefficient to tax study at 100 per cent above the fixed tuition fee for those who want to pay. Income redistribution should be carried out through the tax system and not through the education system. Tuition fees that are too low erode the tax base by causing under-investment and the poor are eventually worse off than with more progressive taxes. If the purpose of low fees is to guarantee access to universities, and not income equality, an ICL scheme is sufficient.

FROM STUDENT GRANTS TO ICLS

Capital markets fail to deliver the loans to finance tuition and living costs as banks cannot easily assess the risks associated with students and face difficulties in monitoring the effort made by students and graduates. Resulting adverse selection and moral hazard effects give rise to high interest rates, credit rationing or even a collapse of the credit market for student loans. In addition, students are risk averse and hesitate to take up large loans. Indeed, risks associated with study cannot be insured due to incomplete contracts and information problems. Imperfect capital and insurance markets induce underinvestment in higher education and hurt, especially more loan-averse students from poorer backgrounds. Such students are forced to work, disturb the quality of teaching and more frequently drop out. Hence, there is a case for helping such students so that they can pay higher tuition fees.

ICLs rather than student grants and subsidised tuition

To tackle student poverty, students should be allowed to borrow to meet fees and living costs. ICLs can overcome problems of capital market imperfection with risk-averse students (Barr, 1993; Chapman, 1997). ICLs only require students to pay back principal and interest if their incomes after graduation are high enough. ICLs thus offer a combination of loans and social insurance. If the income risks of graduates are pooled, fewer subsidies are needed to eliminate risk aversion.

Commercial banks and insurers are unable to write contracts based on future incomes, but the government can enforce contracts through the tax authorities and verify earned incomes. Through the selection and tracking of student performance, and by denying funds to non-performing students, governments can more easily eliminate the 'rotten apples'. They can also collaborate with other tax authorities in Europe to track down graduates who try to default. In principle, ICLs involve no subsidies. However, the risks of default may be borne by society. ICLs avoid perverse redistribution from the average taxpayer to students, because the majority of students come from higher income classes and will belong to the higher income classes after graduation.

An alternative is a graduate tax (GT) where graduates receive grants financed by the issue of government debt. Graduates repay a fraction of their lifetime incomes. The government pools this income to repay government debt including interest. From the perspective of the individual, repayments under a GT can exceed loans (including interest) as graduates with high incomes under a GT typically pay more. A GT thus has larger insurance and redistribution elements than ICLs. In practice, there is only a small difference between a GT and an ICL. Under a GT, repayments by high-earning graduates exceed the costs of their education and the surplus is used to subsidise low-earning graduates. If the impact of a GT on budgets is neutral, it is like an ICL with risk pooling. In the absence of moral hazard, a GT provides more insurance than an ICL and thus dominates a pure loan. With moral hazard, however, an ICL provides better incentives as it features less insurance and performs better than a GT if risks are pooled among students and not borne by the government.

Both ICLs and a GT distort labour supply and encourage delay of career choices in order to avoid repayments that are contingent on future incomes. Students may not put enough effort into their studies; they may study longer, or enrol in 'fun' courses. These moral hazard problems can be avoided by selection and penalties for those who do not make satisfactory progress. A larger loan

warrants a higher tariff. This prevents cross-subsidisation of cheap by expensive courses and avoids income redistribution from able (high-return, low-risk) to less able (low-return, high-risk) students. As a result, there is less moral hazard and more pure insurance. To prevent cross-subsidisation of loss making by profitable courses, tariffs per course and per discipline must be differentiated (see the section, 'How to set subsidies and tuition fees?' above). We prefer ICLs to a GT, because they involve less insurance, allow more flexibility in repayment and can be better tailored to avoid moral hazard. This is especially the case if repayment parameters are not very sharply differentiated by size of loans, types of course or student performance. In that case, the GT causes a potentially large moral hazard problem as the link between funds received, and repayments, is weakened considerably.

Insurance of default risks may also result in adverse selection. Rich students may avoid ICLs or a GT to avoid risk pooling, unless the government finances the cost of bad debtors out of general funds rather than a surcharge on interest. These transfers only benefit students with very low lifetime incomes. An alternative is to make participation in ICLs or a GT obligatory. Adverse selection also arises if talented but 'poor' youngsters do not participate due to loan aversion and work rather than study. Good information may convince them that it pays to study and that they do not run large income risks if they finance their studies with an ICL.

ICLs versus education subsidies and means-tested student grants

Education subsidies involve large transfers to students who do not need financial assistance. Most students are not credit constrained in a lifecycle sense, since returns to education are so high. Education subsidies do not reduce the risks of a particular course of study. Consequently, most subsidies are directed to students with relatively safe earnings prospects such as medical doctors, lawyers or business economists. Large subsidies also provoke excessive enrolment on the part of lazy and less talented students with high dropout rates and low earnings prospects. Student grants or subsidised tuition fees suffer from massive deadweight losses; so much greater subsidies are needed to achieve the same levels of accessibility. Large sums of money are directed towards students/graduates who on average do not face problems in financing their education, have no income uncertainty and/or have excessively low returns on their education. ICLs involve fewer misallocation of subsidies and lower tax requirements, and they result in a less perverse redistribution while weeding out students who enrol on courses to postpone work rather than to engage in serious study.

Means-tested student grants or subsidised tuition fees are meant to help poor students who suffer from credit market imperfections and the inability to insure human capital risks. But ICLs appear to be more efficient in tackling these market imperfections and in helping poor students. ICLs also dominate subsidies based on parental incomes, since means-testing discourages parental savings (Feldstein, 1995). Means-tested subsidies are in any case unfair as graduates from poor backgrounds can also look forward to high lifetime incomes.

Transparency is crucial

European students are reluctant to borrow €50,000 for their university studies even though the return is very high and many do borrow after graduation to buy a car or home. Students express fears of unemployment, low incomes and high debt. Students should be better informed

about the quality of various degree programmes, their own abilities, average returns to their education, the risks associated with such investments (employment probabilities, etc.), the repayment obligations of student loans in normal circumstances and in cases of low income, and so on. Well-informed students should have less debt aversion. They also boost competition between universities. Universities are likely to abuse their informational advantages in order to (price-) discriminate, select and skim off the best students, and lower average educational quality. Government, secondary school teachers and universities should therefore invest in informing school children where, in terms of quality of teaching, research reputation, extra-curricular assets, etc., they can best study. It will help to publish the achievements of universities in Michelin-type guides. These could contain average grade-marks, the average number of times that exams are retaken, average enrolment durations, the scientific accomplishments of staff, teaching evaluations, student evaluations, average salaries of graduates, average employment rates and so on.

SUMMING UP

Private returns to higher education rise. The gap between social and private returns is not large enough to warrant more *public* investment in higher education. In spite of the expected rise in demand for higher education, governments in Europe are not allowing supply to expand to meet demand through a battery of central planning and steering instruments. Politicians from the left and the right have also formed a '*cordon sanitaire*' against structural reforms by misguided equity and accessibility arguments. Owing to 'glass ceilings' on academic excellence, many top academics flee to the US. Students are not challenged enough and drop out

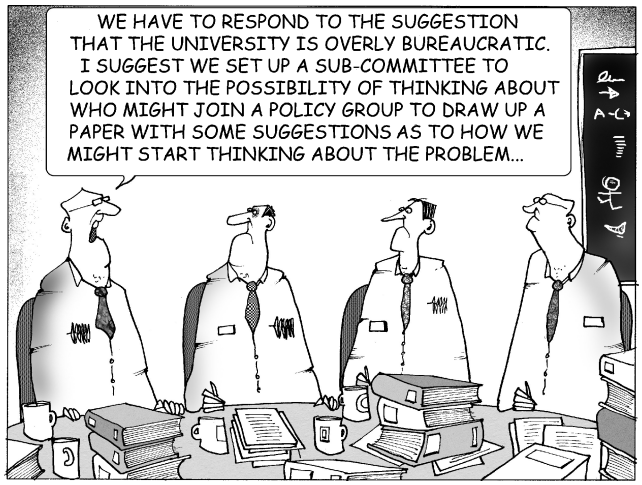
'It will help to publish the achievements of universities in Michelin-type guides.'

massively. European governments produce 'one size fits all' higher education systems that fail to adapt to an increasingly international and competitive market for higher education. Lack of transparency implies lack of competition between universities. In Europe, cartels are now firmly embedded through non-level playing fields between private and public institutions. Inappropriate methods of funding give rise to ever-rising overhead costs and status-seeking university bureaucrats wasting scarce resources on nonsense projects. We therefore propose the following reforms:

1. Allow universities to charge substantially higher tuition fees and also allow them to differentiate fees by type of course depending on demand and costs. Allow universities to give discounts or scholarships to the brightest students, especially if they are from poorer backgrounds. Uniform fees reward bad students and harm good students. Bright rich students will be happy to pay for quality in view of high expected returns. The objective is to increase university budgets, attract the best students and improve the quality of teaching. If fees function as signals of scarcity, there will be less mismatch between the supply of and the demand for graduates.
2. Provide students with ICLs, which graduates repay from future earnings. The objective is to provide insurance, to guarantee universal access at low public cost and to stop students taking disruptive, part-time jobs. Governments may wish to cover defaulters out of

general funds, or make participation obligatory to avoid adverse selection.

3. Only subsidise courses of study when social benefits exceed private benefits. Think of pure science (which is needed to maintain fundamental research), art history or archaeology. Do not subsidise market-oriented, 'status' or 'signalling' courses like business economics or law as they are popular and graduates will earn a lot. Uniform subsidies induce excessive enrolment in fields with little social value and not enough in fields that have large private value. Universities that attract large numbers of bright students need less government subsidy.
4. Improve incentives for students and professors. Allow universities to select only the brightest and most motivated applicants irrespective of their socio-economic backgrounds. Only provide access to student loans and scholarships if students perform well. Introduce strong incentives for teachers and make sure that the best academics teach. Encourage universities to introduce tenure-track appointments where regular assessment of both teaching and research performance play a role in salary, tenure and promotion decisions. Base research budgets on academic performance and potential and have them allocated by independent academics of high reputation.
5. Foster competition among universities at home and abroad and accredit foreign institutions. Abolish historic-cost funding and cross-subsidisation that hinder fair competition. Both private and public institutions should be made to compete on the same terms by means of the allocation of subsidies directly to students through vouchers, grants or, scholarships. Intervene if scale and funding on the basis of student numbers induces monopolistic behaviour, bureaucratic waste and grade inflation. Universities should publish drop out rates, exam marks, student evaluations, details of scientific publications, the evaluations of scientific visitation committees and so on.



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